



OPERATION INSTRUCTION MANUAL

MANUFACTURING DATA REPORT

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

ZIEMANN-HOLVRIEKA NV
Wervikstraat 350 - 8930 - MENEN - BELGIUM

C O N T E N T S

Client	: BIODIESEL ARGENT II BV
Order	: 5685B
Name of the tank	: 1 x Vert. St. Steel Tanks B130700 Cap. ca 212,8m ³ /242m ³
Drawing	: A0072-5685B-0821

- 1- Declaration of conformity**
- 2- Operation Instruction Manual & Safety Instructions**
- 3- Control plan**
- 4- Calculations**
- 5- Material traceability records**
- 6- Welding procedures**
- 7- Certification of welders**
- 8- Non-destructive tests**
- 9- Pressure test on vessel**
- 10- Gauge table**
- 11- Verification nameplate**
- 12- Drawings**

DECLARATION OF CONFORMITY

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³



Declaration of conformity

Number: 5685B

Company:



Address: Wervikstraat 350, B-8930 Menen, Belgium

Phone: 0032 56 51 42 51

Ordernumber: 5685B

Fabrication number: B130700

Client: BIODIESEL ARGENT II BV

Design, Manufacturing and Inspection Code: EN14015

Manufacturing year: 2022

Atmospheric vessel: 1 x Vert. St. Steel Tank B130700

Technical Data:

- single walled
- Main dimensions: Ø6200 mm x 9297 mm
- Capacity: 212800L
- Contents: Biodiesel
- Density: 0.875 kg/l

The vessel is manufactured conform to report number—delivered by ATLC - Dirk Andries
report number ATLC 19 / 220627 / 13

Signature:



Quality - Harald Verhegge

**ATLC®**

ATLC BV
Schaliënhoeverdreef 20T
B-2800 MECHELEN

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ZIEMANN HOLVRIEKA N.V.

Wervikstraat 350
B-8930 MENEN

Uw kenmerk: Biodiesel Argent II/ RVS Tank 5685B/B130700

Ons kenmerk: 800006/WVL/Biodiesel Argent II/r/ RVS Tank 5685B/B130700 / Rapport controle bouw

RAPPORT nummer: 19/220627/13**CONTROLE OP DE BOUW VAN EEN BOVENGRONDSE HOUDER**

Datum(s) onderzoek : 13/12/2021 en 10/02 en 8-27/06 en 10/10/2022 en 26/01/2023 en 1-9-/02/2023

Locatie onderzoek : ZIEMANN HOLVRIEKA N.V., Wervikstraat 350, B-8930 MENEN
ATLC (dossier)

Aanwezige personen : Dhr. A. Dirven, Dhr. R. Duchateau, Dhr. H. Verhegge, Dhr. S. Holvoet en technici

1. IDENTIFICATIEGEGEVENS EN KENMERKEN HOUDER

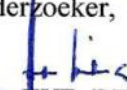
Fabrikant	: ZIEMANN HOLVRIEKA	Fabricagenummer:	B130700
Bouwjaar	: 2022	Volgnummer:	5685B
Type	: Verticaal, RVS	Enkelwandig	Ø 6,2 x H 7,5 m
Ontwerpdruk	: -10/+200 mbar	Maximum werkdruk:	Atm.
Proefdruk	: FoW (zie 3 en 4)*	Controle bouw:	ATLC, IWE-BE00130
Ontwerptemperatuur	: +40° C	Constructiecode:	EN 14015 : 2004
Inhoud	: 212800 liter (nominaal)	Constructiemateriaal:	1.4404 (316L) houder + zie 2.3
Product - dichtheid	: ≤ 0,875 kg/liter, en volgens bestendigheid en vergunning	Corrosietoeslag:	0 mm

Beknopte beschrijving: Bovengrondse, verticale, cilindrische, enkelwandige RVS opslagtank met vlakke bodem met ankerstoelen voor verankering° en met vast conisch dak (20°)**2. ONDERZOEK****3. INBREUKEN-OPMERKINGEN-NOTA'S**

- ☐ Controle op de bouw van een vaste bovengrondse houder volgens Vlare II, Bijlage 5.17.2.
☒ Controle op de bouw volgens erkende constructiecode: EN 14015 : 2004
Details, onderzoeksresultaten, eventuele opmerkingen en nota's: zie dossier.

4. BESLUIT

Het onderzoek en de uitgevoerde controles overeenkomstig EN 14015 hebben voldoening geschonken. Een hydraulische* beproeving met gevulde houder is nog uit te voeren na transport en definitieve plaatsing, alsook het onderzoek voor ingebruikname volgens de toepasselijke voorschriften, na plaatsing en aansluiting van de beveiligingen en toebehoren.

De onderzoeker,

Ing. D. Andries, IWE-BE 00130



2.	ONDERZOEK
2.1	<u>Basis onderzoek:</u> ☐ Controle op de bouw van een vaste bovengrondse houder overeenkomstig Vlare II, Bijlage 5.17.2. ☒ Controle op de bouw volgens erkende constructiecode: EN 14015 : 2004
2.2	<u>Details onderzoek:</u> ☐ Controle op de bouw van een vaste bovengrondse houder volgens Vlare II, Bijlage 5.17.2. ☒ Controle op de bouw van een vaste bovengrondse houder volgens erkende constructiecode: EN 14015 : 2004 Voorgelegd dossier ZIEMANN HOLVRIEKA, referentie 5685B, met conformiteitsverklaring, berekeningen, controleplan, lasprocedures (WPS/WPAR), lasserkwalificaties, NDO rapportering, materiaalcertificaten EN 10204-3.1 met lay-out en overzichtsjijst, tekening nr. A0072-5685B-0821 en tekeningen detail naamplaat en transport, bedienings- en veiligheidsinstructies, verdere detailgegevens houder, volgens opgave: Hoofdafmetingen houder: - Diameter: 6,2 m - Hoogte: 7,5 m (cilindrische hoogte) / (totale hoogte: 9297m) - Wanddikten: 5 mm (1^{ste} plaatgang), 4 mm (2^{de} tot en met 5^{de} = bovenste plaatgang) - Bodem: dikte 5 mm, met afgeronde opstaande rand (R=65 mm & H=80 mm) - Dak: Vast conisch dak (20°) met afgeronde dakrand (R=65 mm), dikte dakplaten: 6 mm, met centrale buisstomp (N8) ontluchting DN200 en flens PN10 Bijzondere kenmerken: - Mangaten: Mantel (MH01): 1 x DN600, Dak (MH02): 1 x DN600 - Kooiladder (LA), 2 Hijsogen (LL), aarding (EL) - 18 Ankerstoelen (AP)° voor verankeringen M24, uitvoering met supplementaire dwarsstaaf Ø 20 mm - Buis DN80 (N12) leeglaat / drain, met bocht onderaan bodem - De houder wordt geïsoleerd en is berekend en bestemd voor opstelling binnen. - Verdere details zie dossier 5685B en uitvoeringsdetails op tekening
2.3	<u>Onderzoeksresultaten:</u> <u>Onderzoekdata controle op de bouw:</u> - <u>13/12/2021:</u> Goedkeuring constructiecode EN 14015 : 2004: aanvaardbaar; werkplaatsbezoek met beoordeling lasprocedures, laswerk en controle materialen en eerste deel voorgelegde documenten. - <u>10/02 en 8-27/06 en 10/10/2022:</u> Vervolg controlebezoeken werkplaatsen met verificatie materialen, inwendig en uitwendig onderzoek, beoordeling NDO (RT & PT & vacuümtesten) en controle tekeningen, berekeningen, lasserkwalificaties en controleplan. - <u>10/10/2022 en 26/01 en 1-9/02/2023:</u> Vervolg onderzoek met controle uitvoeringsdossier houder met as built documenten, met tekening nr. A0072-5685B-0821 Mod. V, tekeningen detail naamplaat en transport, bedienings- en veiligheidsinstructies, berekeningsnota's EN 14015 houder, aansluitingen, verankeringen en hijsogen ('lifting lugs' bovenaan houder), controleplan,



- Vervolg Blz. 2: lasmethodebeschrijvingen (WPS) nrs. WPS 02.2B/03.2B/04.3B/06.1B/06.2B/08.1B/ 09B/09.3B/17.2B/21.2B/24B/25.1B/25.2B en 26B en overeenstemmende lasprocedurekwalificaties (WPAR) nrs. 03992 ADM (proces 141 BW) / 03993 ADM (proces 15 BW) / 03994 ADM (proces 15 BW) / 080561 ADM (proces 135 FW) / 080561 ADM (proces 135 FW) / 03998 ADM (proces 141 BW) / 03999 ADM (proces 141 BW) / 930303 ADM (proces 141 BW) / 03998 ADM (proces 141 FW) / 120209 ADM (proces 141 BW) +0119821 EUN (proces 141 BW) / 930303 ADM (proces 141 BW) / 930303 ADM (proces 141 FW) / 930303 ADM (proces 141 FW) en 930303 ADM (proces 141 FW), gecertificeerd en getekend RWTÜV, AIB-Vinçotte en TÜVNord met overzichtslijst toegepaste WPS en lasprocedures, met kwalificaties lassers volgens EN ISO 9606-1 en operatoren EN 14732 door Apragaz van Jean-Michel Waeye (Nr. 18 / 141), Benjamin Desmarests (Nr. 26 / 141), Rik Catry (Nr. 19 / 15), Laurens Vandeveld (Nr. 16 / 15), Arnaud Delachapelle (38/15), Kitia Kangala (Nr. 04 / 135), Dimitrov Atanas (Nr. 25 / 141); door TÜV Rheinland van Emil Pavlov (141), Mitko Chankov (141), Stoyan Stoyanov (141), Radoslav Dzhagalov (141), Zlatko Stamatov (141), en Doncho Chongarov (141); Materiaalcertificaten EN 10204/3.1 RVS 1.4404 (316L) platen bodem, romp en dak met materiaalbeschrijving (lay-out) inclusief vermelding smeltnummers en RVS 1.4404 (316L) voor buizen, bochten, flenzen en delen in contact met product met tevens een overzichtslijst (traceability records) der materiaalcertificaten en RVS 1.4301 (304) / 1.4307 (304L) o.a. voor uitwendige dubbelplaat en uitwendige delen niet in contact met product, NDO-rapporten: Radiografisch onderzoek (RT): rapport 5685RT-02 van 29/09/2022 met aanduiding filmlocaties op tekening: films 10 x 48 cm nrs. CW41/CW51/CW61 en LW62 aanvaardbaar bevonden en getekend Stefaan Holvoet, RT L.II, BANT cert. 15/066 met lopende geldigheid; Testcertificaten penetrant onderzoek (PT) lasverbindingen ankerstoelen en inplantingen buisstompen, alsook 100% bodem-mantelverbinding en 10 % van alle overige kruisverbindingen van de mantel, aanvaardbaar bevonden en getekend Harald Verhegge, PT L.II, BANT cert. 21/025 met lopende geldigheid, alsook testcertificaten betreffende vacuümtesten lasnaden bodem en dak, aanvaardbaar bevonden en getekend Harald Verhegge.
- Ter aanvaarding werden van de opslagtank de conformiteitsverklaring, berekeningen, de uitgevoerde rubrieken van het controleplan, de WPS, de overzichten van de lasprocedures, lasserkwalificaties en materiaalcertificaten, alsook de testrapporten en -certificaten geïmprimeerd en getekend.

3	INBREUKEN – OPMERKINGEN – NOTA’S
3.1	<u>Inbreuken:</u> - Geen betreffende het uitgevoerde onderzoek van de houder
3.2	<u>Opmerkingen:</u> - Geen betreffende het uitgevoerde onderzoek van de houder, mits uitvoering van een geslaagde hydraulische beproeving na transport en definitieve plaatsing, zie ook 3.3..



3.3	Nota's: - Na transport en definitieve plaatsing van de houder, is na plaatsing en aansluiting van de uitrusting, beveiligingen en toebehoren, het aanbrengen van productaanduidingen en waarschuwingen, het onderzoek voor ingebruikname met gevulde houder nog uit te voeren volgens de toepasselijke voorschriften. - Specifieke uitvoering bodem met afgeronde opstaande rand ($R=65\text{ mm}$ & $H=80\text{ mm}$) en 18 ankerstoelen met supplementaire dwarsstaaf $\varnothing 20\text{ mm}$ aanvaardbaar bevonden na geslaagd NDO (100 % PT verbindingen ankerstoelen + 100 % PT bodemmantelverbinding + RT 48 cm inclusief kruising met verticale rompnaad (film CW61)).
4	BESLUIT: zie bladzijde 1

5	ALGEMENE VOORWAARDEN EN MEDEDELINGEN
5.1 5.2 5.3 5.4 5.5 5.6 5.7	De inhoud van dit rapport is een momentopname en weergave van de situatie op het ogenblik van uitvoering van het onderzoek, op basis van de op dat ogenblik gedane vaststellingen. Dit rapport mag niet anders dan in zijn geheel vermenigvuldigd worden. In deel 2 is enkel de tekst na de aangekruiste vakjes "☒" van toepassing Verklaring terminologie in deel 3 van dit rapport: - 3.1. Inbreuken betreffen (ernstige) gebreken of onvolkomenheden die strijdig zijn met de toepasselijke voorschriften en bijgevolg leiden tot afkeur - 3.2. Opmerkingen betreffen minder ernstige gebreken of onvolkomenheden, verklaringen en of beperkingen in verband met het onderzoek en eventueel voorwaarden waaraan nog moet voldaan worden - 3.3. Nota's betreffen gebreken die geen invloed hebben op de besluitvorming, vaststellingen die buiten het kader van het onderzoek vallen maar een potentieel gevaar of veiligheidsrisico aanduiden, of organisatorische gegevens Gebruikte afkortingen (in voorkomend geval): NDO: Niet Destructief Onderzoek; RD: Review Documents: Nazicht voorgelegde documenten naar vermelding van vereiste kwalificaties, resultaten en vorm volgens de toegepaste voorschriften, maar waarvoor de oorspronkelijke uitgever of opsteller verantwoordelijk blijft. Toepassingsgebied: Eventuele veranderingen aan de gebruiksomstandigheden van de houder, zoals bij verandering van productklasse of -kenmerken, verandering van de uitrusting en of beveiligingen, eventuele aanpassingen of herstellingen, heropstelling, e.a. vereisen bijkomend milieudeskundig onderzoek, en in voorkomend geval is melding aan de bevoegde overheid vereist, of is het bekomen van een nieuwe of gewijzigde vergunning verplicht, zoals o.a. bij verandering van vergunningsklasse. Huidig onderzoek beperkt zich tot de houder voor opslag van producten, andere installatiedelen en andere toepassingen en activiteiten vallen buiten het bestek van dit onderzoek (tenzij uitdrukkelijk vermeld) en onder de verantwoordelijkheid van de exploitant of fabrikant. Worden <u>niet</u> beschouwd als normaal gebruik volgens de voorschriften (niet limitatieve lijst): Het gebruik (of poging tot) buiten de werkingsgrenzen van de houder, het niet respecteren van de voorschriften, het veroorzaken van schade en of ongevallen door oneigenlijk gebruik of onachtzaamheid (zoals het ongelimiteerd doorblazen of vullen op overdruk van de houder, het veroorzaken van overdruk in houder of leidingen, het beschadigen of afrukken van vulleiding of vulmond, het vullen met verkeerde producten of productconcentraties, het lozen van gevaarlijke producten in de omgeving,...), het verborgen houden van gegevens met betrekking tot het onderzoek en gebruik van de houder of het verstrekken van misleidende informatie,.... Facturering, betalings- en andere voorwaarden zie corresponderend factuur.
6	BIJLAGEN: Geen



OPERATION INSTRUCTION MANUAL & SAFETY INSTRUCTIONS

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

Operation instruction manual and safety instructions



Order Nr.5685B – B130700



Introduction

Dear Client,

This operation instruction manual and the safety instructions in this document contain important information, which is necessary for a correct and safe use of Ziemann-Holvrieka tanks and equipment.

This operation instruction manual and the safety instructions should be read and implemented carefully before start of operation of the tank. This document should be handed over to all involved personnel (for transport, set-up, installation, first-use and further operation including maintenance).

Also during operation, it is important to have a copy of this instruction manual and the safety instructions easily available for the operational personnel.

In this document, which is arranged by topics, you will find important information and instructions for a safe use of our products.

For specific questions or remarks, please contact the manufacturer named in this document.

Ziemann-Holvrieka NV

Contents

Introduction	2
Contents	3
1. Product description and technical data	4
2. General instructions	5
2.1. General	5
2.2. Modifications and operation	5
2.3. Removal of packaging / protective parts	5
2.4. Inspection of the delivery	6
2.5. Bringing into use	6
3. General instructions for transport and installation	7
3.1. General	7
3.2. ZIEMANN-HOLVRIEKA products	7
3.3. Transport	8
3.4. Lifting instructions	8
4. Safety instructions	9
4.1. General	9
4.2. Pressure	9
4.3. Temperature	10
4.4. Inspection of openings and manholes	11
4.5. Electric equipment	11
5. Malfunctions, possible causes & dangers to be avoided	12
5.1. General	12
5.2. Overpressure	12
5.3. Vacuum	12
5.4. Temperature variations	12
5.5. Corrosion resistance	12
5.6. Tank support	13
5.7. Manhole	13
6. Maintenance	14
6.1. General	14
6.2. Cleaning	14
Annexe 1: Example	15
Annexe 2: Example	16

1. Product description and technical data

Designation of the tank	1 x Vert. St. Steel Tank B130700
Client	BIODIESEL ARGENT II BV
Manufacturer	ZIEMANN-HOLVRIEKA NV Wervikstraat 350 8930 Menen – Belgium Tel. +32 56 51 42 51 – Fax. +32 56 51 07 28
Ziemann-Holvrieka Order-No.	5685B – B130700
Year of Construction	2022
Main Drawing Number	A0072-5685B-0821

Main Design Data and Operational Data:

Calculation Design Code	EN14015
Erection	Indoor
Construction of support	Vertical on a concrete base
Wind Load	10 m/s
Seismic Load	Not to be considered

Tank

Capacity (net/gross)	approx. 212800 Litres
Medium	Biodiesel
Density	0,875 kg/l
Max.allow design overpressure	0,200 bar
Max.allow.(Design) Vacuum	-0.010 bar
Test Pressure	Full of water
Max.allow. design temp	80 °C
Internal Diameter	6200 mm
Total Length / Height	9297 mm
Material acc. EN10028-7	1.4404 / X2 CrNiMo 17 12 2
Weight empty (Tare)	10500 kg

Execution and Equipment	See main drawing and additional technical drawings / documents
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2. General instructions

This operation instruction manual reflects the state of technology at the time this instruction manual has been drawn up.

For possible questions or comments to the tank in question, reference must always be made to the order number. The order number is indicated in point 1. Product Description and Technical Data of this operation instruction manual, and on the nameplate of the tank.

2.1. General

Attention!



The maximum allowable pressure, vacuum, and temperature, as indicated in 1. Product description and technical data of this operation instruction manual are not to be exceeded.

The tank / pressure equipment has been designed for operation in accordance with the specifications.

2.2. Modifications and operation

Adaptations, repairs, changes or modifications to the pressure equipment, tanks or apparatuses only to be made after written approval from Ziemann-Holvrieka. Without this written approval, the client should be aware that he acts for his own risk and account, and that such action will influence the client's (remaining) contractual rights. For example, all guarantees will be void. Please refer to the contract of sale.

Possible modifications have to be incorporated in the tank drawings and one should also notice that some original documents (e.g. declarations of conformity) will not be valid anymore and have to be replaced by new ones.

Personnel in charge of the installation, operation, maintenance, and welding operations must be well skilled and qualified according to the local regulations and requirements, and as requested by the client.

The client or the user will be fully responsible for the consequences of:

- ◆ Lack of maintenance;
- ◆ Unqualified modifications;
- ◆ Operation of the tank not according to this manual, or by unintended actions;
- ◆ Failure to observe the operation and security instructions in this manual;
- ◆ Corrosion damage from whatever structural action.

In all these particular cases, guarantees of Ziemann-Holvrieka (if any, either implicit or explicit) will become void.

2.3. Removal of packaging / protective parts

In order to make sure that certain tank parts or equipment parts remain together during the transport, these parts may be fixed with tape. The tape should be removed prior to erection of tank and equipment and while these parts are still easily accessible. Special attention has to be directed towards possible ventilators and openings to and from anti-vacuum valves. Such kind of openings may in no way remain covered or restricted.

In order to avoid undesirable movements of certain tank parts or equipment parts during the transport (e.g. long slender shafts of agitators, covers of housings, ...), these parts are sometimes supported, tightened or bound together with parts that must be removed before the equipment is taking into use. Make sure that no such parts are blocked or have got stuck in or on the tank, before tank erection and before taking into use.

To avoid any corrosion and to avoid our products getting dirty during transport, an extra protection for transport is sometimes required. Has tape or foil been used, such material should be removed before the erection of the tank or equipment (for reasons of accessibility).

In cases where tanks, equipment or parts thereof must be protected during transport with a thin layer of rust preventive (e.g. paraffin-oil, ensis-oil, ...), this thin protective film must also be removed before taking into use. For this cleaning operation, it is advisable to use a high-pressure cleaning device, with a water temperature of +80 °C or more (with or without the addition of an organic or alkaline solvent, providing that this solvent will not harm the stainless steel surface). Take care: drying drops of water sometimes leave behind visible marks on the surface of the stainless steel. To avoid this, one could dry up the surface after cleaning with a piece of cloth or a rag.

While removing packaging / protective parts, one should take care not to damage the stainless steel surface. Some scouring or abrasive products (e.g. sponges with ScotchBrite) may leave behind visual unattractive marks on a stainless steel surface, and it is therefore recommended not to use these products. Knives used to remove packaging and to cut through tapes and foils, may also cause deep grooves and scratches on the stainless steel surface. As such grooves and scratches are very vulnerable towards corrosion, these should be avoided!

2.4. Inspection of the delivery

On receipt of goods, a check-up should be done to see if the tank or equipment show any damages and if the delivery is in accordance with the sales conditions.

Ziemann-Holvrieka should be contacted immediately if the tank has been damaged and / or is incomplete.

2.5. Bringing into use

Before a tank is brought into use, the client or user has to check with local authorities if there are any additional directives, laws or rules to follow (e.g. licenses, distance rules, ensilages, ventilation, electrical connection, etc.).

Periodical inspection should be arranged for in accordance with local rules.

3. General instructions for transport and installation

3.1. General

These instructions are valid for transport, transshipment, storage in between, loading and unloading of single or multiple walled and/or insulated Ziemann-Holvrieka storage tanks, reservoirs and equipment.

These instructions are a part of our order concerning the execution of the above mentioned works. Deviations from these instructions need to be noted down in writing.

A transport company or a crane entrepreneur who has been authorized to arrange for the transport + erection has to follow the local regulations (on the road, on the working sites, etc.). A competent and skilful execution of the tasks should be provided. Personnel should be elected and afterwards be informed of the tasks to execute and the corresponding regulations / instructions.

Every transport or lifting operation of pressure equipment, tank or apparatus has to be performed in common by at least two qualified persons.

Unless otherwise agreed in writing, the parts which Ziemann-Holvrieka has foreseen for lashing and securing will be marked in yellow on the tanks or equipment of Ziemann-Holvrieka. The parts which are foreseen for attaching lifting equipment will be marked in red (these last parts may obviously also be used for the lashing and securing).

For any sub-contracted transport-, lifting- or installation-operation ordered by the client or user, the client or user is responsible for the distribution of this operation instruction manual and safety instructions to the right people.

3.2. ZIEMANN-HOLVRIEKA products

The products of the Ziemann-Holvrieka Group are made from stainless steel, and are single walled, multiple walled or insulated. Surfaces and parts from stainless steel may not come into direct contact with steel parts containing carbon (traces). The equipment used for lashing, securing and lifting should be protected / coated accordingly.

Lashing, securing and lifting may only be performed from the points reserved for this purpose. Exceptions have to be agreed separately.

Should grinding / cutting be required in the immediate neighbourhood of tanks, pressure equipment and apparatuses, the stainless steel surfaces must be protected (with suitable screens) from sparks and particles flying around. Otherwise, corrosion damages cannot be excluded.

Also construction activities (e.g. with spatters, pickling residues, sparks and particles flying around and falling down, etc.) on the premises of the client or user may cause corrosion damages. It is important that the client or user of the Ziemann-Holvrieka tanks, reservoirs or equipment protects the equipment with suitable screens if such activities should occur. Damages as a consequence of corrosion following on insufficient protection are for risk and account of the client.

3.3. Transport

If arranged by the client:

Ziemann-Holvrieka-tanks and equipment may only be transported by units approved for this purpose (supports, saddles, support shells, etc.). The transport-company has to provide and submit all the required licenses for the transportation. All escort rules, official or private, contained in these licenses have to be impelled by the transport-company.

A survey of the transport route with special care for obstacles, narrow passages, etc. has to be made by the transport-company.

The loading of tanks on transport units, storage in between of tanks and equipment, transshipment or unloading on the construction site may only be performed on the supports reserved for the transport: frames and saddles or shells. Consult if you are in doubt.

3.4. Lifting instructions

The attachment of lifting tools or equipment on Ziemann-Holvrieka – tanks and equipment may only be done to the parts which Ziemann-Holvrieka has foreseen for it (lifting eyes and related parts). The lifting operation must be performed with cranes having a suitable hoisting capability in a stable position (use of suitable spreaders and traverses). Only vertical hoisting or lifting lines are allowed. Two lifting points or lifting eyes are always used as a minimum.

Only approved lifting and hoisting material may be used for lifting or hoisting. Also, the lifting and hoisting material should be capable of carrying the weight of the tanks or equipment. The weight of the empty tank ('tare weight') is for instance mentioned on the nameplate of the tank, or in 1. Product description and technical data of this operation instruction manual.

It is forbidden to perform lifting operations by a wind force > 5 (wind speed $v > 40$ km/hr). A filled tank may never be lifted or turned over. The angle of lifting cables or ropes by a horizontal tank may never be less than 60° in order to avoid intolerable high stresses in the lifting material.

While lifting (insulated) tanks and equipment, the lifting equipment and related parts (e.g. chains, beams, etc.) may not get into contact with parts of the tanks or equipment not foreseen for it, nor with the insulation nor with the cladding. This could cause transport or hoisting damages and consequential corrosion damages.

For most Ziemann-Holvrieka-tanks and equipment, additional instructions will be given. Normally, these instructions can be found on the technical drawings. In the annexes 1 and 2 some examples of this can be seen. Should Ziemann-Holvrieka have issued such additional drawings, these drawings should be handed over to the company entrusted with the transport, the lifting, or the mounting. The transport or lifting operations are to be executed by qualified personnel only.

4. Safety instructions

4.1. General

- ◆ Ziemann-Holvrieka tanks, reservoirs and equipment shall be put into use, handled, and operated by well skilled and qualified personnel only.
- ◆ The client or user is responsible for the correct distribution of the necessary information from this operation instruction manual to the operational personnel.
- ◆ Personnel for operation, inspection and maintenance must wear appropriate and suitable safety clothing. Jewels, loose parts from clothing and hair may be caught by rotating equipment and must be absolutely forbidden.
- ◆ One should always keep an eye on the weather conditions before walking or climbing on a tank (ladders, stairs, platforms, etc.).
- ◆ In confined rooms / tanks / reservoirs or equipment a dangerous atmosphere may occur (dangerous low oxygen content, toxic, explosive or otherwise dangerous contents in the air). The safety precautions for working in confined spaces must always be followed (e.g. working with a safety mask or automatic breathing apparatus).
- ◆ Adequate means must be provided for the draining and venting of pressure equipment where necessary:
 - To avoid harmful effects (escape from steam, CO₂, etc.), vacuum collapse, corrosion and uncontrolled chemical reactions. All stages of operation and testing, particularly pressure testing, must be considered;
 - To permit cleaning, inspection and maintenance in a safe manner.
- ◆ Before filling or pressurising a tank, the user should have made certain that all openings have been connected or blinded in a correct way, and also that the tank has been installed / anchored in a correct way.
- ◆ Adaptations and repairs on tanks, reservoirs and equipment may only be made after approval from Ziemann-Holvrieka (this because the safety may be impaired and the former classification as pressure equipment e.g. may become obsolete).

4.2. Pressure



1. Watch out! Before the storage tanks, pressure reservoirs and equipment are put into use, all necessary safety devices have to be installed as a protection against intolerable overpressure and vacuum.
2. Atmospheric storage tanks are generally equipped with openings and / or facilities, which prevent the development of intolerable high overpressure and vacuum. These openings and/or facilities may not be closed off or otherwise mechanically restricted. A periodic check-up of these openings / facilities is required.
3. Pressure tanks and equipment are generally estimated for higher overpressure and vacuum because the implementation has been made in accordance with the destination. To ensure safe compliance with and restriction of overpressure and vacuum as specified in the working conditions, the pressure tanks and equipment have to be equipped with suitable safety devices (overpressure valves, vacuum valves). In general the tank manufacturer does not supply these safety devices. The client or user therefore has to arrange for suitable safety equipment before putting the installation into use, e.g. procure an adapted overfilling valve to avoid uncontrolled escape of fluid.

4. While tuning the safety devices (against overpressure and vacuum), one has to respect in particular the design specifications of the pressure equipment, tanks or apparatuses. These specifications can be found on the nameplate and in 1. Product Description and Technical Data of this operation instruction manual. Reference should be made to the locally applicable legislation and directives.
5. Likewise, an adequate section (diameter) of the safety devices against overpressure and vacuum must be foreseen by taking into account the functioning of the tank / apparatus and the corresponding pumping capacity for filling and emptying.
6. A periodic check-up of correct functioning of all safety equipment is required (refer to the operation instruction manual of the safety equipment).
7. The setting and functioning of the safety equipment (protection against overpressure and / or vacuum) must be periodically checked (repetition tests). The test interval is regulated by legal or local directives or e.g. based on company experience.
8. Through ventilation openings and / or near safety valves, dangerous vapours or fluids under pressure may escape. Please take care for the direction in which this escape can be blown away.
9. At automatic cleaning of tanks, especially for hot-cold cleaning, the correct operation of the aeration and de-aeration equipment should be monitored. In case of hot-cold cleaning, this aeration and de-aeration equipment must be fully opened. Also, aeration and de-aeration equipment should not be blocked mechanically, by-passed for operational control reasons or otherwise constrained in their function. This could cause heavy damage to tanks / equipment, or injure people. Functional checking and monitoring of this aeration and de-aeration equipment must be done on a regular basis.

4.3. Temperature

1. Usually, low temperatures have little influence on material quality of stainless steel. Only at very low temperatures ($< -50^{\circ}\text{C}$) problems with ductility of stainless steel may occur.
2. At low temperatures the expansion of the medium in the tank should be taken into account. Specific parts of the tank may be pressurised at a higher pressure than the pressure foreseen by Ziemann-Holvrieka. This could possibly cause damages.
3. At low temperatures, sticking of the safety valves by freezing could occur. This should be avoided by placing heat tracing or the like.
4. High temperatures have a high influence on the material strength of stainless steel. Consequently it is important to monitor that the temperature of the medium stays within the temperature limits stated by Ziemann-Holvrieka (e.g. by continuous monitoring of the temperature by a sensor and a periodic calibration of the sensor). See also 1. Product Description and Technical Data.
5. At high temperatures the expansion of the medium in the tank should be taken into account. Temperature variations may result in pressure variations, and so the maximum allowable working pressure could be exceeded, which could possibly cause damages.
6. If there is a fire in the direct neighbourhood of the tank it is the responsibility of the user to consider the possibility of cooling the tank in order to keep temperature within the allowable limits, e.g. by extra external cooling, by suitable coolants, etc.
7. It is the responsibility of the user to take suitable precautions against people touching a very hot or a very cold surface of the tank (e.g. insulation of the tank, limited access to the tank, availability of personal protection for users and local personnel, pictographs for warnings, etc.).

4.4. Inspection of openings and manholes

1. Storage tanks, pressure tanks and equipment are mostly equipped with inspection openings or manholes. Different implementations exist.
2. Manholes and inspection openings are equipped with a cover which can be closed. Inspection openings and manholes may only be opened, when the interior of the tank is in an atmospheric state (without pressure). This is also valid for all other outfit, piping and equipment for measuring and control.
3. Before entering into a tank, one must possibly check or examine the safety of the atmosphere inside the tank. While entering into the tank, the opening has to be secured against a slam shut by either another person or in a mechanical way.
4. Before closing manholes or inspection openings, it must be verified that the gasket and the sealing surface are cleaned and that the gasket is on its proper place. Before closing, it must be checked that there is no one inside. The cover has to be closed carefully and without violence. Before tightening the fasteners, one must check that the cover is centered correctly. Care should also be taken on all fasteners laying back and positioned correctly and on an evenly tightening of all fasteners.
5. Defective covers and their accessories (bolts, locks, gaskets, etc.) must be replaced immediately by original spare parts through suitable personnel. For any information about these parts you can consult the manufacturer of the tank indicated in this operation instruction manual.

4.5. Electric equipment

1. Storage tanks, reservoirs, pressure tanks and apparatuses can be equipped with electric devices (e.g. mixers, lighted sight glasses, measuring equipment, control technology equipment).
2. This equipment may only be used for the purpose intended for.
3. At wrong operation or abuse, danger for body and life of the operator exist as well as the equipment, storage tanks, pressure tanks and equipment may be damaged.
4. Only qualified skilled personnel may execute the electrical connection of mixers and other electric equipment. By the installation and the operation of such generators and equipment, one has to follow the instructions of the manufacturer and all relevant regulations (e.g. European directives, local laws, (inter)national norms, instructions by insurance companies, etc.).
5. It is the responsibility of the user to take care that the tank is effectively earthed before start-up of the tank.
6. At inspection and maintenance work, the electric tension should always be switched off.
7. At inspection and maintenance work, one should never spray water or other liquids on electric motors, switches, switchboards and other electrical components.

5. Malfunctions, possible causes & dangers to be avoided

5.1. General

All remarks stated on the drawings, datasheets, calculations, and in operation instruction manuals must be respected very strictly. The correct and safe working of the tank, reservoir or apparatus depends upon it.

5.2. Overpressure

Possible causes can be:

- Closed off ventilation;
- Ventilation filter stopped up or silted up with liquids or dirt;
- Sticking of a safety valve (caused by freezing, pollution, etc.);
- Inadequate or improper adjusted pressure valve;
- Defect high-level-measurement device;
- Sudden air volume expansion in the tank during a cleaning operation;
- Volume expansion of the medium in the tank due to heating or freezing.

5.3. Vacuum

Possible causes can be:

- Closed off ventilation;
- Sticking of an anti-vacuum-valve (caused by freezing, pollution of the valve, etc.), or an inadequate or improper adjusted anti-vacuum-valve;
- Cold cleaning of a hot tank (shrinking of the air in the tank);
- Cleaning with lye of a tank filled with CO₂.

5.4. Temperature variations

Possible causes can be:

- Climate conditions;
- Incorrect temperature measurement (e.g. defect sensor, sensor not suitable for the application, etc.);
- Missing temperature measurement and / or temperature control;
- Heat or high temperatures in the neighbourhood of the tank (e.g. fire, etc.).

5.5. Corrosion resistance

If the client did not specify the medium in the tank (storage medium, process medium, etc.) to Ziemann-Holvrieka or if he specified the stainless steel himself, then Ziemann-Holvrieka supposes that the client has assessed the risks of corrosion of the materials he ordered. In such cases, or if the client uses the tank to stock other products than specified, Ziemann-Holvrieka will not be responsible for damages as a consequence of corrosion.

- ❑ As a consequence, avoid also using media in high quantities, in high concentrates or for a long period of time. This may possibly damage the corrosion resistance of the stainless steel surface. This has also to be considered during cleaning and / or disinfecting.
- ❑ Avoid damaging and even covering up the surface of the tank by iron particles which may come from cutting, grinding, sawing, spattering, or other operations in the neighbourhood of the tank (for example placing railings, platforms, stairs and ladders around / on the tank). If necessary protect the tank with an adequate screen. This is also required if extreme aggressive atmospheres occur (e.g. while pickling in the neighbourhood).

5.6. Tank support

- Tanks with a flat bottom on a concrete foundation:
The concrete foundation must be adequately dimensioned and sealed up.
- Tanks on a skirt:
If a skirt support is used, it's important to be sure that the bottom ring of the skirt is supported over its full length and width. Such support can be realised by:
 - ❑ Placing the skirt levelly on the self-supporting foundation, using filling material / plates of an adequate width, length, thickness and strength.
 - ❑ Filling the joint between foot ring and foundation with a solid layer of concrete.
- Tanks on legs or support brackets welded to the cylinder:
Tanks on 3 legs or support brackets have an equal load on every support point. If the tank has more than 3 support points, the weight must be equally divided over the support points by:
 - ❑ Using adequate filling material / plates under the legs or support brackets,
 - ❑ Or by adjusting the legs to the correct length.Irregular loads on the legs or brackets may result in cracks and / or stress-corrosion.
- Tanks on saddles:
Tanks on 2 saddles have an equal load on each saddle. If the tank has more than 2 saddles, the weight must be equally divided over the saddles by:
 - ❑ Using adequate filling material / plates under the saddles.Irregular loads on the saddles may result in cracks and / or stress-corrosion.

We advise to check every 6 months (while the tank is empty) the support of the tank and if necessary adjust or add filling material / plates.

In order to avoid collapse of the tank support caused by external heating (e.g. with fire), the user has to take suitable measures.

5.7. Manhole

It is important to check periodically if the manhole or the inspection opening and its sealings are not damaged but still waterproof. A defective gasket should be replaced by an original spare part.

Please contact the manufacturer of the tank mentioned in this document for more information in such cases.

6. Maintenance

6.1. General

Storage tanks, pressure tanks and other equipment must undergo a periodic maintenance by sufficiently trained personnel.

Also the safety instructions according to paragraph 4 of this document should be respected.

The periodic maintenance should be scheduled and executed in conformity with the general requirements which exist within the company of the user.

The maintenance should cover a testing / review of all screw connections, entrance and inspection openings like manholes, and remaining annexes, equipment, flanges and tubes. One should check on tightness, faultless functioning and correct fastening / connection.

Before the tank is taken into use again, defective parts must be replaced with suitable spare parts.

For any information about suitable spare parts you may consult the manufacturer of the tank indicated in this operation instruction manual.

6.2. Cleaning

For each periodic or other cleaning of a tank, one should at least take care of following remarks:

While cleaning the inside of storage tanks, pressure tanks and apparatuses, adequate ventilation during and after the cleaning is required.

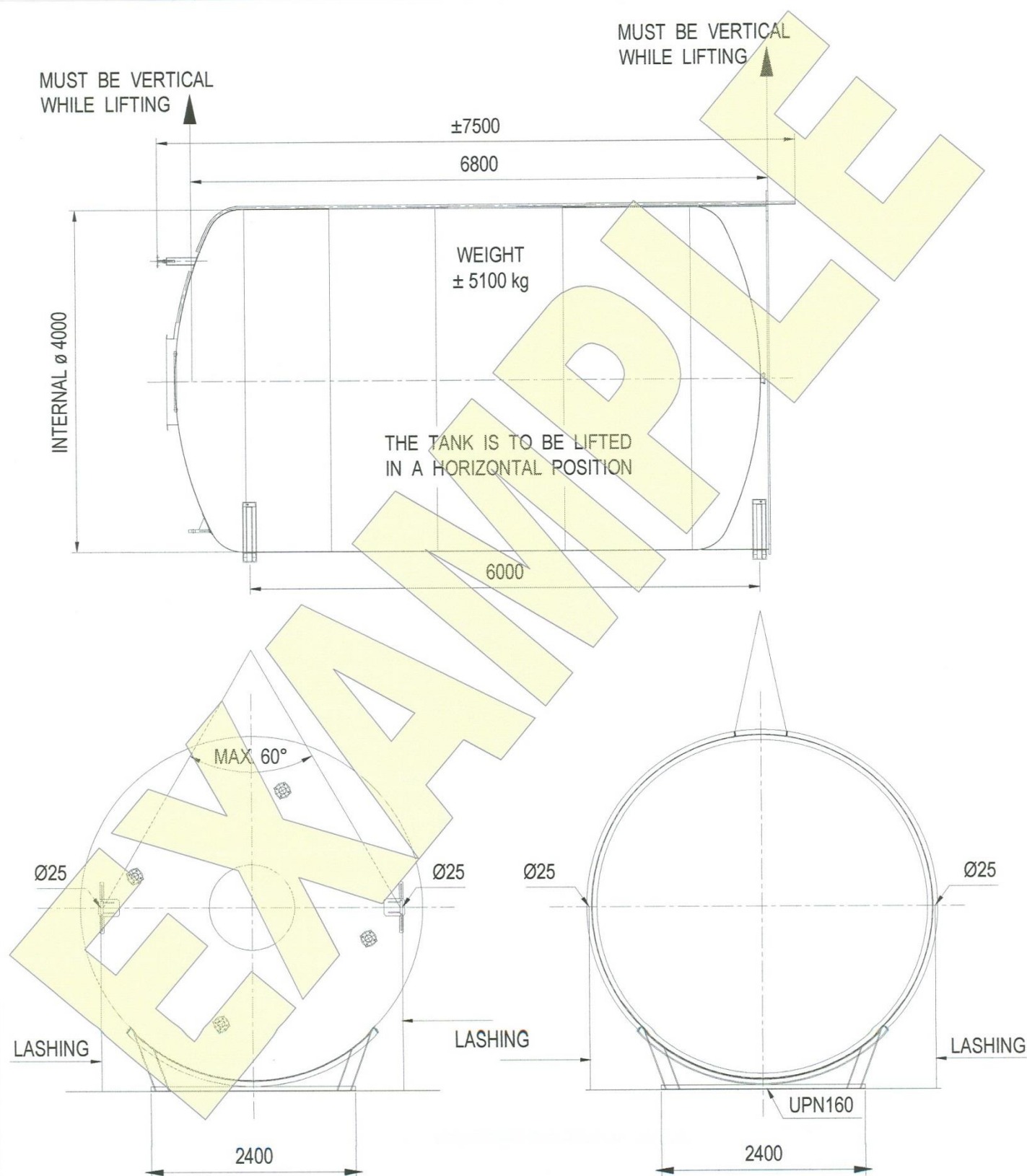
Only cleaning agents which do not affect the material of the tank or equipment may be used.

Before one starts the cleaning, one must be absolutely sure that there are no product residues in the tank which can form a dangerous corrosive mixture with the cleaning agents. It is therefore recommended to pre-rinse the tank with an appropriate product before applying any cleaning agent.

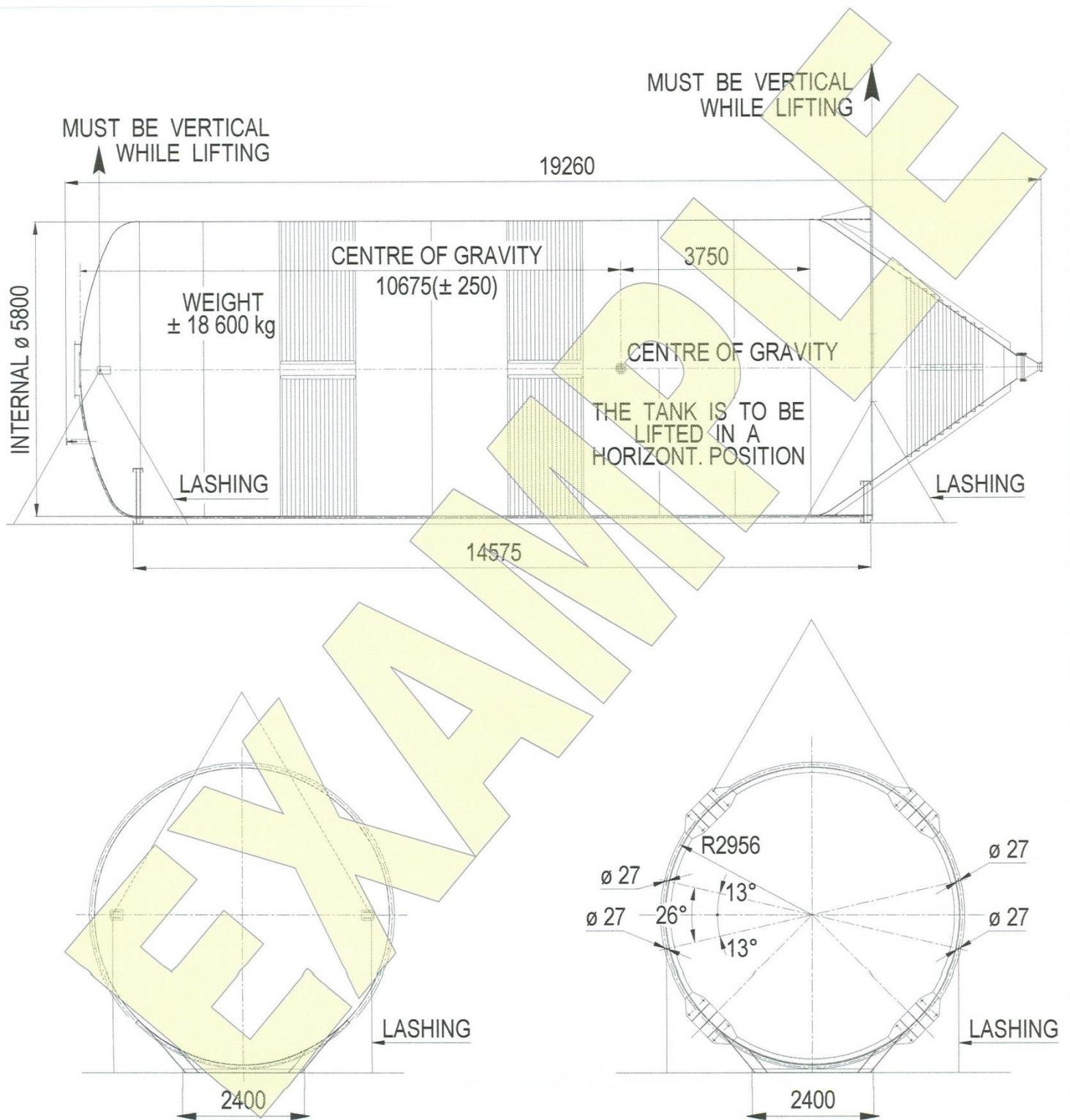
While and after cleaning it is possible that external parts of the tank get warm.

For the cleaning of storage tanks, pressure tanks and other equipment which are to be used for foods, one has to keep the relevant regulations and directives.

Annexe 1



Annexe 2



CONTROL PLAN

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³



Wervikstraat 350 B-8930 Menen

QUALITY CONTROL PLAN

Drawing Nr. : A0072-5685B-0821

Shop order : 5685B		Client : BIODIESEL ARGENT II BV		Tank Nr: B130700		
P.O. : B130700		Equipment : 1 x Vert. St. Steel Tank 130700		Material : 1,4404		
Nr.	Description	Standard	Insp.	Doc.	Signature + date	Remarks
					A B C	
1	Inspection of drawings	EN14015	A+B+C	Yes	 	
2	Design	EN14015	A+B+C	Yes	 	
3	Identification of material certificates	EN 10204 3.1	A+C	Yes	 	
4	Welding procedure qualification	ISO 15614-1	A+C	Yes	 	
5	Welders qualification	EN ISO 9606-1 (EN 287-1)	A+C	Yes	 	
6	Approval of personnel for non-destructive test	EN 9712	A+C	Yes	 	
7	Penetrant testing	EN 571-1 + EN1289	A+C	Yes	 	
8	Radiografic inspection on welds & test reports	EN 17636 cl. A + EN14015	A+C	Yes	 	
9	Pressure test on piping (heating)	ASME VIII DIV 1	A+C	Yes	 	
10	Hydrostatic test on vessel	EN14015 WI-HT01	B	No	 	on site
11	Measurement & orientation nozzles	TOL. 001	A+C	No	 	
12	Check finish Inside	EN 4288 (Ra) EN970	A+C	No	 	λc = 0,8
13	Check finish outside	EN970	A+C	No	 	
14	Verification Nameplate		A+C	Yes	 	
15	Final inspection completed vessel	following contract	A+C	No	 	
16	Manufacturing Data Report	EN14015	A+C	Yes	 	

A = Inspected by QC Ziemann Holvrieka

B = Inspected by client

C = Inspected by No Bo

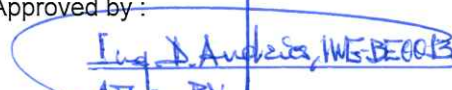
 = not applicable



Quality - Harald Verhegge



Date: 20-06-22

Approved by : 

Date : 

Approved by :

Date :

Date: 20-06-22

Approved by :

Date :

Approved by :

Date :

CALCULATIONS

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

Berekeningen - Calculations

5685B

1 x stainless steel tank

Opslagtank

Cap. Ca. 242m³



Berekeningen - Calculations

EN-14015

- Tankconstructie

4

EN 14015

Design of a vertical stainless steel storage tank
Calculations according EN 14015

Calculated by: YH
Date: 03-05-22
Purchaser: Argent
Order: 5685B
Drawing: B130700-A0072-5685B-€

Location: Indoor

Tank dimensions:

Shell:

Diameter: D = 6200 mm
Cylindrical height: Hc = 7500 mm
Thickness of insulation: tiss = 50 mm

Roof:

Slope of roof: Alpha = 20 °
Knuckle radius: rR = 65 mm
Thickness of roofplates: tur = 6 mm
Thickness of insulation: tistr = 50 mm
Height of roof: Hr = 1178 mm
Total weight of roof: Gr = 2224 kg

Bottom:

Slope of bottom: sl = 0 mm
Thickness bottomplates: tub = 5 mm
Weight of bottom: Gb = 1248 kg

Tank design:

Total weight: Gt = 10582 kg
Total Height: Ht = 8678 mm
Total capacity: Ct = 226,4 m³

Material:

Type of material:
1% Yield strenght at 20 °C:
Young's modulus at 20 °C:
1% Yield strenght at T °C:
Young's modulus at T °C:

	Material 1	Material 2
	1.4404 C EN 10028-7:2000	
Reb =	270 N/mm²	N/mm²
E =	200000 N/mm²	
Res =	216,6 N/mm²	
Et =	195500 N/mm²	

Contained liquid:

Name of liquid: Biodiesel
Density of liquid: w = 1000 kg/m³

Design values:

Design temperature: T = 80 °C
Design pressure: p = 200 mbar
Vacuum: pvO = 10 mbar
Design vacuum: VaO = 12,5 mbar
Windspeed: VwO = 10 m/s
Wind pressure: q = 0,06 kN/m²
Corrosion allowance: c = 0 mm

Loads:

Snow/live load: Fs = 37,0 kN
Uplift force: Fu = 603,8 kN
Horizontal wind force: Fw = 2,25 kN
Extra horizontal force: Fh = 0 kN
Extra vertical force: Fv = 0 kN
Roof loading + selfweight: Pe = 3,40 kN/m²

SHELL DESIGN:

Minimum thickness of each course:

$$t_{calc} = \frac{D}{20 * S} (98 * w * (H - 0,3) + p) + c$$

The equivalent stable height of each course at tmin

$$He = h * \sqrt{\left(\frac{t_{min}}{t}\right)^5}$$

Course Number	Height of course (h) [mm]	Total height (H) [mm]	Calculated thickness (tcalc) [mm]	Thickness (t) [mm]	Weight [kg]	He [m]	z tcalc/t	Material
1	1500	1500	0,68	4,0	934,9	1,50	0,17	1,00
2	1500	3000	1,00	4,0	934,9	1,50	0,25	1,00
3	1500	4500	1,31	4,0	934,9	1,50	0,33	1,00
4	1500	6000	1,63	4,0	934,9	1,50	0,41	1,00
5	1500	7500	1,94	5,0	1168,7	0,86	0,39	1,00
Total		7500			4908,4	6,86		

Calculation of the maximum height of the unstiffened shell:

$$K = \frac{95000}{3,563 * V_{wO}^2 + 580 * V_{aO}} = 12,49$$

$$Hp = K * \sqrt{\frac{t_{min}^5}{D^3}} = 25,89 \text{ m}$$

Positions vacuum ring

No vacuum ring needed (Hp > He)

(Dimensions in formulas : meter)



ROOF DESIGN:

Radius of curvature of roof:

$$R_1 = \frac{D}{2 * \sin^* \alpha} = 9,1 \text{ m}$$

Minimum thickness to resist buckling:

$$tr = 40 * R_1 * \sqrt{\frac{10 * Pe}{Et}} = 4,78 \text{ mm}$$

Calculation of the required compression area:

Minimum required area:

$$A = \frac{50 * p * (0,5 * D)^2}{Res / 2 * Tan \alpha} = 2200 \text{ mm}^2$$

Existing area:

Area of roof:

$$Ah = 0,6 * \sqrt{R_1 * tur * tur} = 840 \text{ mm}^2$$

Area of shell:

$$Ac = 0,6 * \sqrt{D * 0,5 * t_{\min}} * t_{\min} = 267 \text{ mm}^2$$

Extra area:

$$Ae = 1500 \text{ mm}^2$$

Since $Ah + Ac + Ae > A$; the provided area is sufficient.

Bottom design:

Minimum thickness required to resist bending stress:

$$t_b = \sqrt{\frac{1250 * S_{df}}{\frac{1}{9} * R_{es}}} = 1,8 \text{ mm}$$

LIFTING LUGS:

Number of lifting lugs: 2

DESIGN OF THE TANK ANCHORAGE:

Number of anchors: 18
 Size of anchor-bolt : M 24
 Minimum quality : 4,6

Uplift:

Portion of the bottom not acting for uplift:	mdb. =	0,00 m	
Diameter of the bottom acting for uplift:	Dupl. =	6,20 m	
Uplift force due to internal pressure:	Pint. =	603,81 kN	
Anchorforce per anchor due to uplift:		Paupl =	33,55 kN

Wind:

Projected area of shell and roof:	Aproj. =	51,38 m ²	
Design wind speed:	Vwind =	10 m/s	
Windpressure acc to DIN 1055:	Pw =	0,06 kN/m ²	
Wind dragcoefficient:	Ct =	0,7	
Horizontal windforce on roof:	Froof =	0,17 kN	
Windmoment due to Froof:	Mroof =	1,39 kNm	
Horizontal windforce on shell:	Fshell =	2,08 kN	
Windmoment due to Fshell:	Mshell =	7,8036 kNm	
Total windmoment on tank:	Mtank =	9,1919 kNm	
Anchorforce per anchor due to windmoment:		Paw =	0,33 kN

Own weight:

Weightload acting for hold down:	-9157 kg	
Anchorforce per anchor due to weightload	PaG =	-5,09 kN

Extra forces:

Extra horizontal force:	Fhor =	0 kN	
Distance between horizontal force and 0 point	a =	0 mm	
Moment due to extra horizontal force	Mhor =	0 kNm	
Anchorforce per anchor due to extra horizontal force:		Pab =	0,00 kN

Total anchorforce per anchor

Pa = 28,79 kN

Stresse in anchor-bolts

Allowable anchor stress	σ_{al} =	96 N/mm ²
Actual anchorstress	σ_{ac} =	89 N/mm ²

STRESSES DUE TO DESIGN LOADINGS:

Axial stress in the shell	Saxp =	1,20 N/mm ²
Trust pressure on the foundation	Sdf =	0,06 N/mm ²
Bending stress in the bottom	Sbb =	17,96 N/mm ²
Allowable stress	Sal =	144,4 N/mm ²

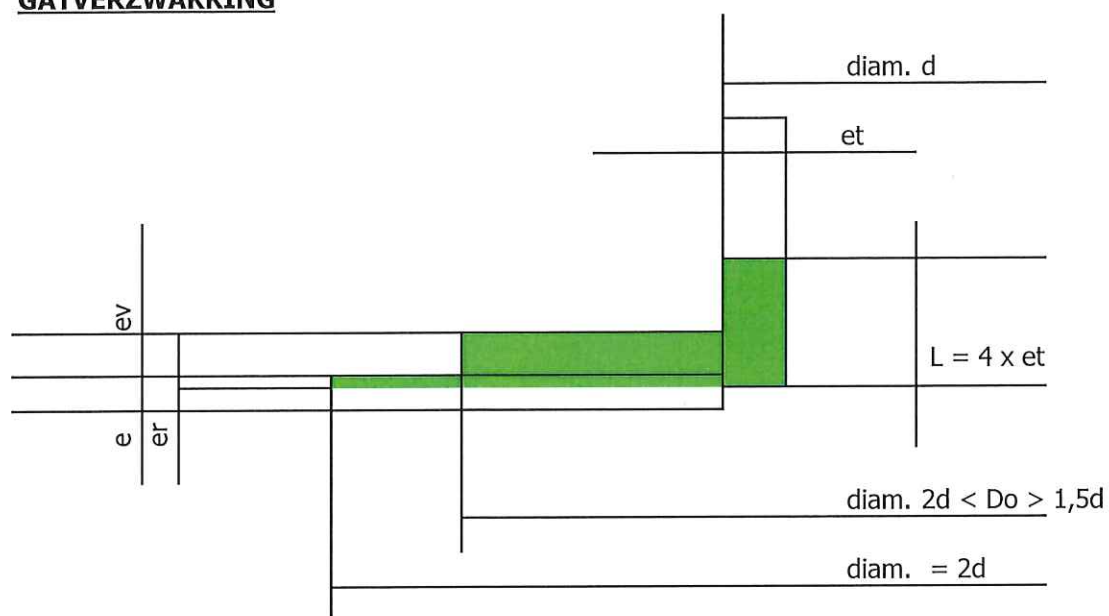


Berekeningen - Calculations

EN-14015

- Aansluitingen

GATVERZWAKKING



Berekende dikte : e_r mm
 Toegepaste dikte: e mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e_r$$

Beschikbare gatversterking :

$$A_1 = (e - e_r) \times (D_o - d) \quad \text{met } 2d < D_o > 1,5d$$

$$A_2 = L \times 2 \times e_t$$

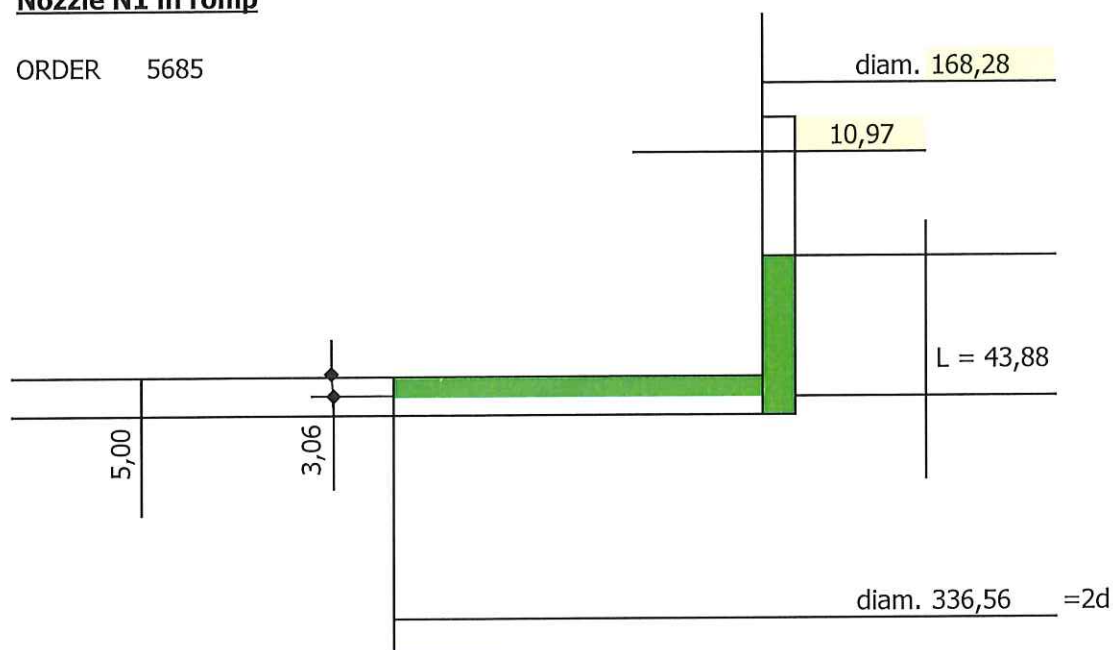
Toegepaste versterking :
 diam. $D_o / d \times e_v$

$$A_3 = (D_o - d) \times e_v$$

$$A_{\text{tot}} = A_1 + A_2 + A_3 = > A$$

Nozzle N1 in romp

ORDER 5685



Berekende rompdikte: 1,94 mm
Toegepaste rompdikte: 5,00 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 168,28 \times 1,94 = 245 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (336,56 - 168,28) \times (5 - 1,94) = 514,94 \text{ mm}^2 \\ A2 = L = 43,88 \times 2 \times 10,97 = 962,73 \text{ mm}^2$$

geen versterking nodig

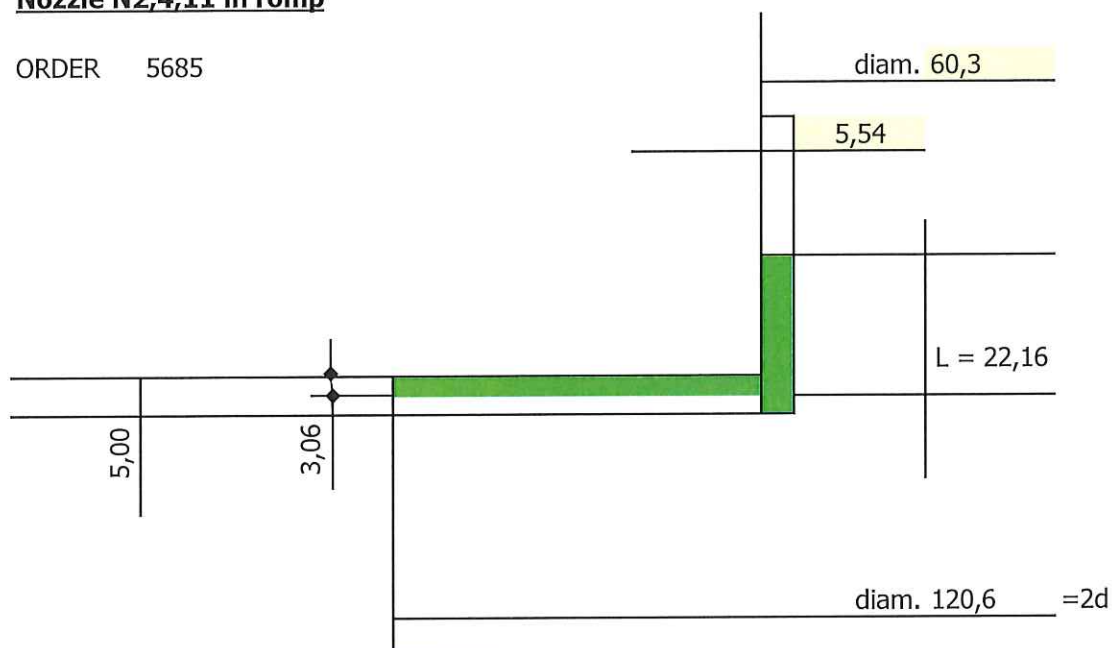
$$A3 = 0,00 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 1.478 \text{ mm}^2 > 245 \text{ mm}^2$$

Handwritten signature or mark.

Nozzle N2,4,11 in romp

ORDER 5685



Berekende rompdikte: 1,94 mm
Toegepaste rompdikte: 5,00 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 60,3 \times 1,94 = 88 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (120,6 - 60,3) \times (5 - 1,94) = 184,52 \text{ mm}^2 \\ A2 = L = 22,16 \times 2 \times 5,54 = 245,53 \text{ mm}^2$$

geen versterking nodig

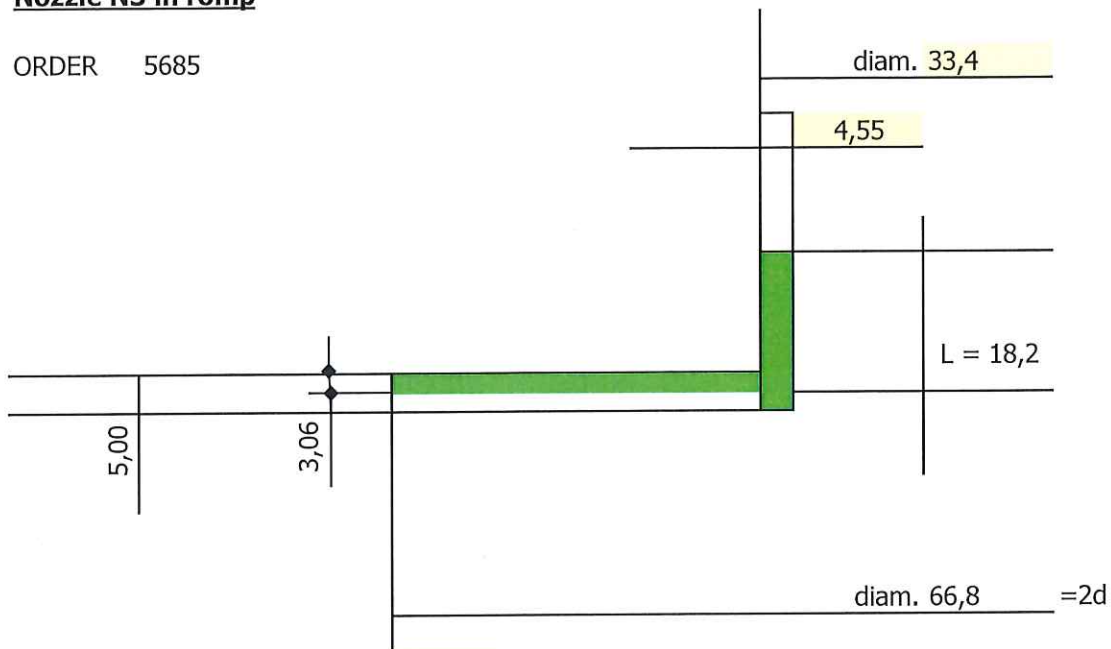
$$A3 = 0,00 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 430 \text{ mm}^2 > 88 \text{ mm}^2$$

Handwritten signature

Nozzle N3 in romp

ORDER 5685



Berekende rompdikte: 1,94 mm

Toegepaste rompdikte: 5,00 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e$$
$$= 0,75 \times 33,4 \times 1,94 = 49 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (66,8 - 33,4) \times (5 - 1,94) = 102,20 \text{ mm}^2$$

$$A2 = L \times 2 \times 4,55 = 165,62 \text{ mm}^2$$

geen versterking nodig

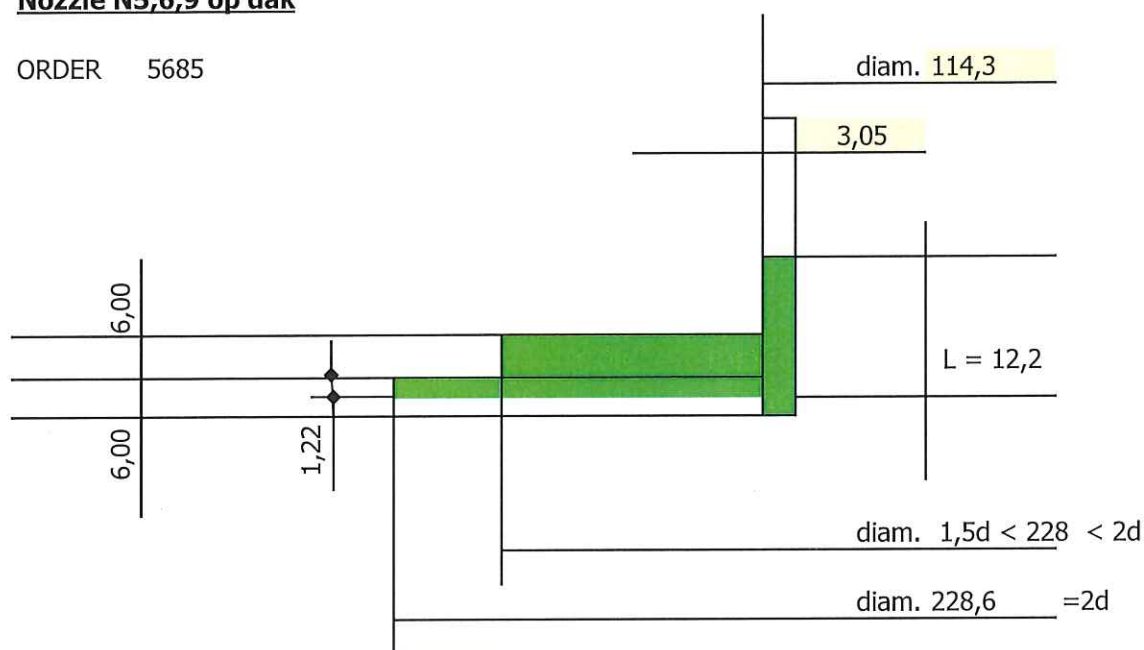
$$A3 = 0,00 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 268 \text{ mm}^2 > 49 \text{ mm}^2$$

Handwritten signature or mark.

Nozzle N5,6,9 op dak

ORDER 5685



Berekende dakdikte :	4,78 mm
Toegepaste dakdikte :	6,00 mm
Toegepaste versterking :	6,00 mm
Buitendiameter versterking :	228 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e$$
$$= 0,75 \times 114,3 \times 4,78 = 410 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (228,6 - 114,3) \times (6 - 4,78) = 139,45 \text{ mm}^2$$

$$A_2 = L = 12,2 \times 2 \times 3,05 = 74,42 \text{ mm}^2$$

Toegepaste versterking :

diam. 228/114,3 x 6 mm

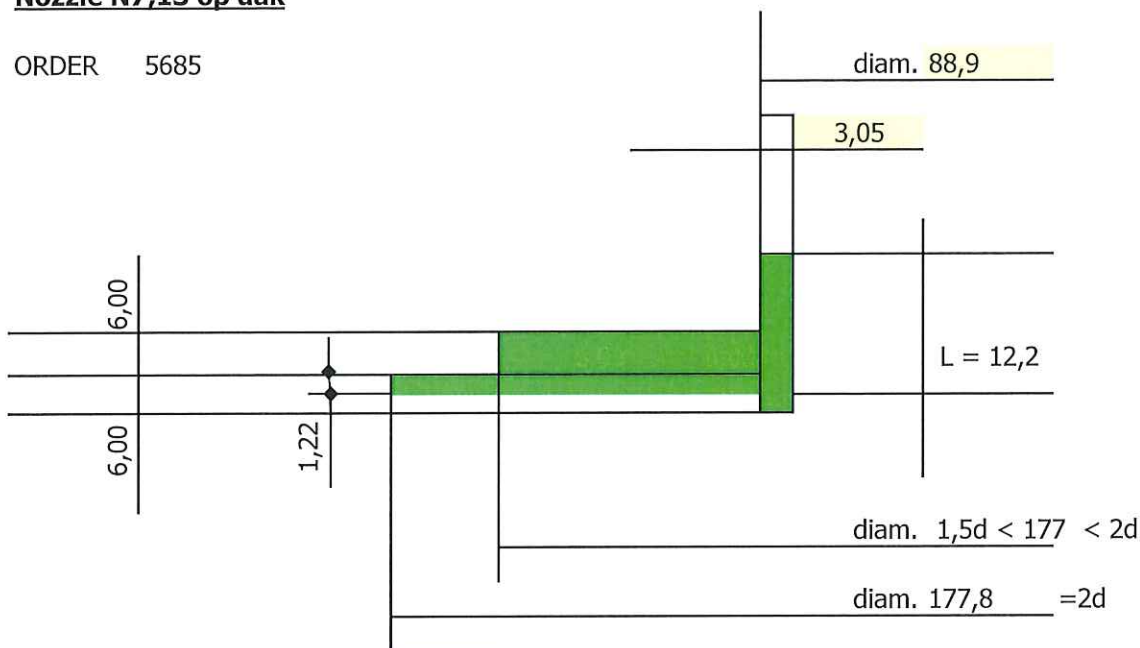
$$A_3 = (228 - 114,3) \times 6 = 682,20 \text{ mm}^2$$

$$A_{tot} = A_1 + A_2 + A_3 = \underline{\underline{896 \text{ mm}^2}} > 410 \text{ mm}^2$$



Nozzle N7,13 op dak

ORDER 5685



Berekende dakdikte : 4,78 mm
Toegepaste dakdikte : 6,00 mm
Toegepaste versterking : 6,00 mm
Buitendiameter versterking : 177 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 88,9 \times 4,78 = 319 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (177,8 - 88,9) \times (6 - 4,78) = 108,46 \text{ mm}^2 \\ A2 = L = 12,2 \times 2 \times 3,05 = 74,42 \text{ mm}^2$$

Toegepaste versterking :
diam. 177/88,9 x 6 mm

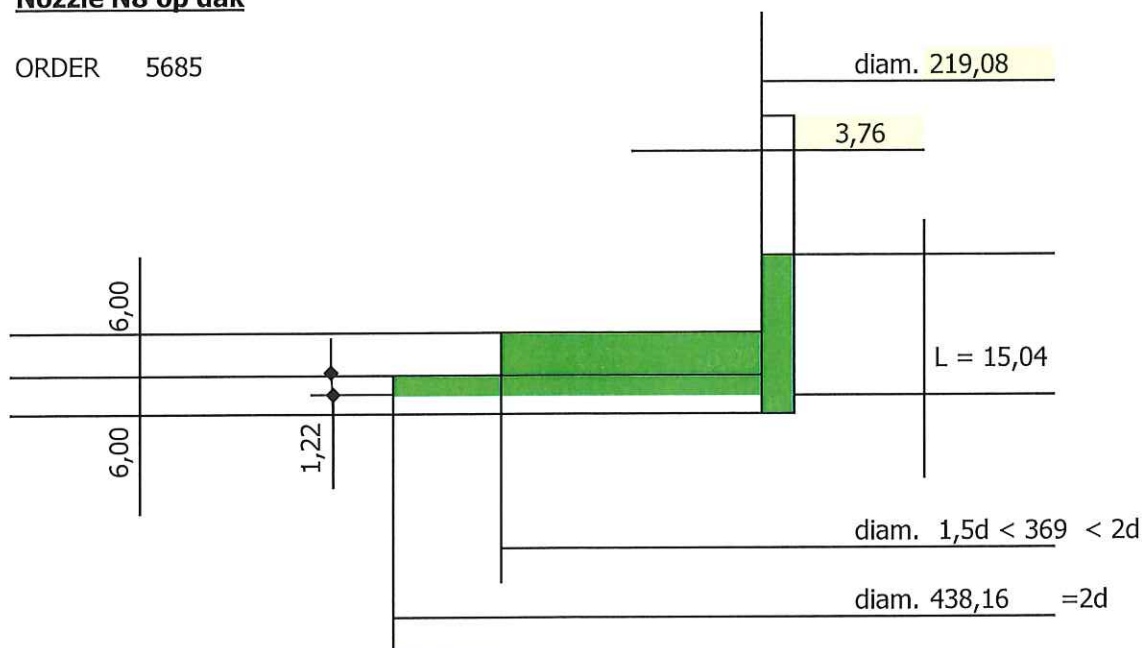
$$A3 = (177 - 88,9) \times 6 = 528,60 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 711 \text{ mm}^2 > 319 \text{ mm}^2$$

Handwritten signature

Nozzle N8 op dak

ORDER 5685



Berekende dakdikte : 4,78 mm
Toegepaste dakdikte : 6,00 mm
Toegepaste versterking : 6,00 mm
Buitendiameter versterking : 369 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 219,08 \times 4,78 = 785 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (438,16 - 219,08) \times (6 - 4,78) = 267,28 \text{ mm}^2 \\ A2 = L = 15,04 \times 2 \times 3,76 = 113,10 \text{ mm}^2$$

Toegepaste versterking :

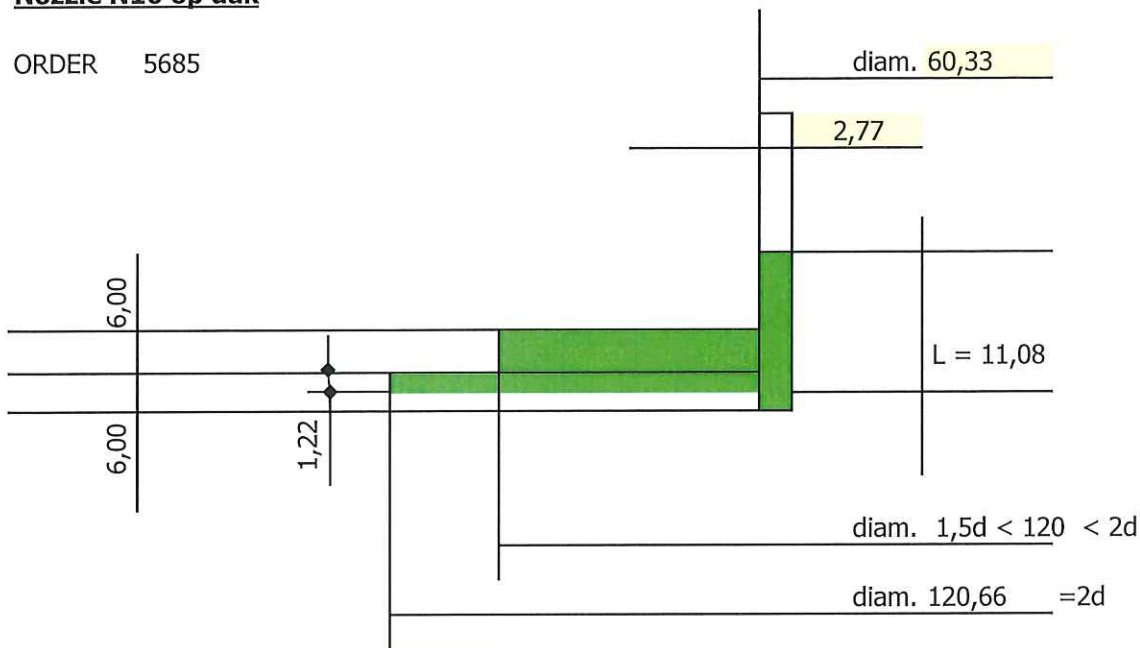
diam. 369/219,08 x 6 mm

$$A3 = (369 - 219,08) \times 6 = 899,52 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 1.280 \text{ mm}^2 > 785 \text{ mm}^2$$

Nozzle N10 op dak

ORDER 5685



Berekende dakdikte : 4,78 mm
Toegepaste dakdikte : 6,00 mm
Toegepaste versterking : 6,00 mm
Buitendiameter versterking : 120 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 60,33 \times 4,78 = 216 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (120,66 - 60,33) \times (6 - 4,78) = 73,60 \text{ mm}^2 \\ A2 = L = 11,08 \times 2 \times 2,77 = 61,38 \text{ mm}^2$$

Toegepaste versterking :

diam. 120/60,33 x 6 mm

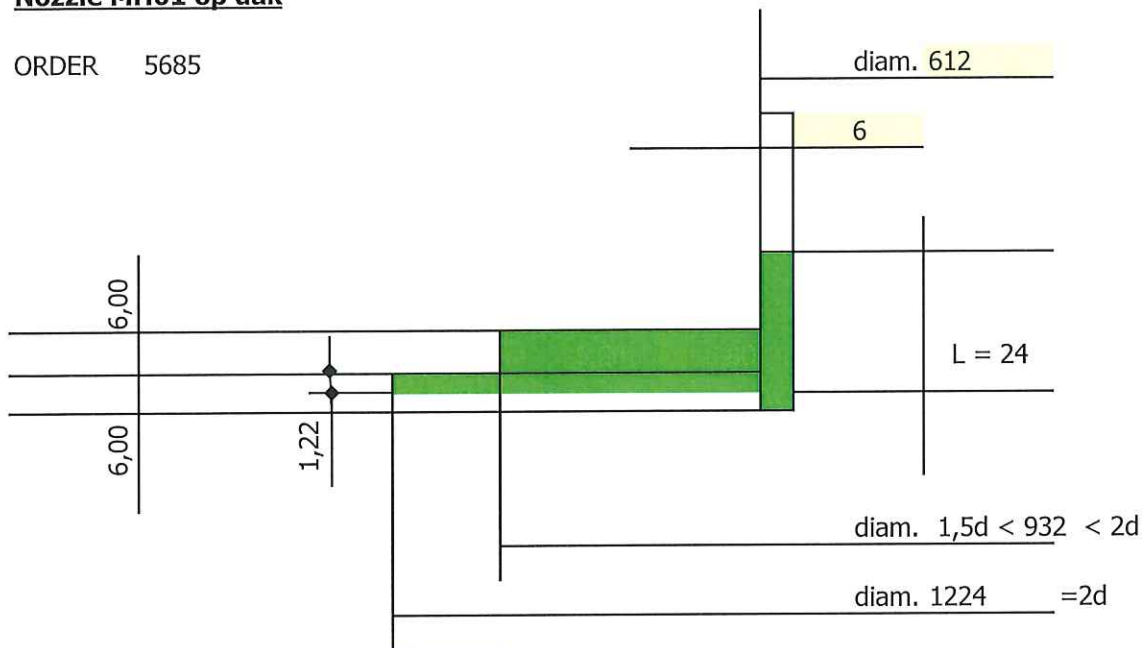
$$A3 = (120 - 60,33) \times 6 = 358,02 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 493 \text{ mm}^2 > 216 \text{ mm}^2$$

Handwritten signature or mark.

Nozzle MH01 op dak

ORDER 5685



Berekende dakdikte : 4,78 mm
Toegepaste dakdikte : 6,00 mm
Toegepaste versterking : 6,00 mm
Buitendiameter versterking : 932 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 612 \times 4,78 = 2.194 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (1224 - 612) \times (6 - 4,78) = 746,64 \text{ mm}^2 \\ A2 = L = 24 \times 2 \times 6 = 288,00 \text{ mm}^2$$

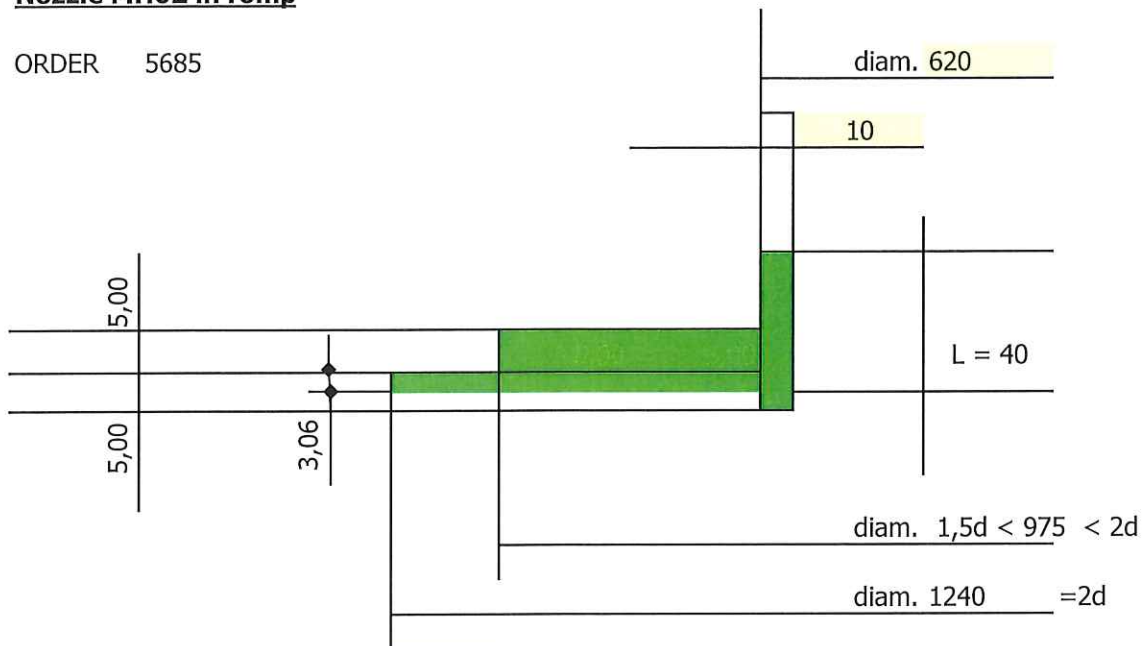
Toegepaste versterking :
diam. 932/612 x 6 mm

$$A3 = (932 - 612) \times 6 = 1.920,00 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 2.955 \text{ mm}^2 > 2.194 \text{ mm}^2$$

Nozzle MH02 in romp

ORDER 5685



Berekende rompdikte: 1,94 mm
Toegepaste rompdikte: 5,00 mm
Toegepaste versterking : 5,00 mm
Buitendiameter versterking : 975 mm

Benodigde gatversterking :

$$A = 0,75 \times d \times e \\ = 0,75 \times 620 \times 1,94 = 902 \text{ mm}^2$$

Beschikbare gatversterking :

$$A1 = (1240 - 620) \times (5 - 1,94) = 1.897,20 \text{ mm}^2 \\ A2 = L = 40 \times 2 \times 10 = 800,00 \text{ mm}^2$$

Toegepaste versterking :
diam. 975/620 x 5 mm

$$A3 = (975 - 620) \times 5 = 1.775,00 \text{ mm}^2$$

$$A_{\text{tot}} = A1 + A2 + A3 = 4.472 \text{ mm}^2 > 902 \text{ mm}^2$$

Berekeningen - Calculations

Lifting Lugs

12

Ordernr: 5685B
 Klant: Argen Energy
 Tek N°: B130700-A0072-5685B-0821

Dimensions and data

Tank Dimensions

L1 =	7795 [mm]	(distance from top lifting lug to tailing lug)
L3 =	4150 [mm]	(distance tailing lug to center of gravity)
L2 =	3645 [mm]	(distance top lug to center of gravity)
L4 =	4245 [mm]	(distance tailing lug to vertical axis of tank = $R_{\text{tank}} + \text{height lifting lug}$)
WL =	15750 [kg]	(weight of empty tank * overall load faktor = 1,5)
WL =	154508 [N]	

Lifting lug dimensions

# number of lugs	2	
Calculation for top- or tailing lug?	top	[Top / Tail]
t =	thickness shell	4 mm
t _L =	thickness lug	20 mm
A =	width lug	100 mm
L ₁ =	Lenght lug	360 mm
Dc =	distance pin-hole center to X-axis (left side lug) =	50 mm
L ₃ =	width lug-edge to center lug at center pin-hole =	50 mm
L ₄ =	width lug-edge to center lug underside eyepad =	50 mm
L ₅ =	width lug-edge to center lug at gusset plate =	mm
R ₃ =	distance pin-hole center to top lug =	50 mm
D ₁ =	diametre pin-hole	40 mm
D ₃ =	diametre eye-pad	mm
t _p =	thickness eye-pad	mm

Welding group

L _x	= length weld strip [mm]
Y _n	= distance center of gravity strip to X-axis [mm]
X _n	= distance center of gravity strip to Y-axis [mm]
I _{x-n}	= moment of inertia (pro mm weld thickness) strip around X _z -axis [mm ⁴ /mm]
I _{y-n}	= moment of inertia (pro mm weld thickness) strip around Y _z -axis [mm ⁴ /mm]
O	= orientation weld strip, X = parallel to Z _x -axis, Y = parallel to Z _y -axis
X _z	= largest distance of weld strip to gravity point along X-axis
Y _z	= largest distance of weld strip to gravity point along Y-axis
r _z	= $(X_z + Y_z)^{1/2}$

N° strip	L _x	Y _n	X _n	O	I _{x-n}	I _{y-n}	X _z	Y _z	r _z
1	210	100	0	x	19433	1114243	64,61538	10	65
2	210	100	100	x	19433	1518089	164,6154	10	165
3	100	50	0	y	246425	163100	40,38462	90	99
4									
5									
6									
7									
8									
9									
10									
520					max radius of weld=				165

B =	welding height lug	210 mm
G =	height from gusset to center pin hole	87 mm
w =	welding thickness	5 mm

Material specs

F _m =	Tensile strenght of lug material	530 N/mm ²
F _y =	minimum specified yield stress lug material =	240 N/mm ²
F _B =	maximum allowable bending stress = F_y/S_F =	180 N/mm ²
F _T =	maximum allowable Tension stress = F_y/S_F =	133 N/mm ²
F _s =	maximum allowable shear stress(pin-hole) = F_y/S_F =	133 N/mm ²
F _s =	maximum allowable shear stress = F_y/S_F =	133 N/mm ²
F _p =	maximum allowable bearing stress = F_y/S_F =	216 N/mm ²
F _w =	maximum allowable stress on weld = $F_m/(S_F \cdot 3^{1/2})$	175 N/mm ²

Safety faktor S _f
1,3
1,8
1,8
1,8
1,1
1,75

14

Ordernr: 5685B
 Klient: Argen Energy
 Tek N°: B130700-A0072-5685B-0821

Calculations

Loads during lifting at lifting angle Theta.

T_0 = total load on tailing lug P_0 = total load on top lug
 T_L = longitudinal load on tailing lug P_L = longitudinal load on top lug
 T_T = transverse load on tailing lug P_T = transverse load on top lug

θ = angle between vertical axis tank and floor

θ	0	10	20	30	40	50	60	70	80	90	MAX
T_0	72249	65919	60297	54967	49589	43814	37180	28943	17671	0	
T_T	0	11447	20623	27483	31875	33563	32198	27198	17403	0	33563
T_L	72249	64918	56661	47602	37987	28163	18590	9899	3069	0	72249
P_0	82259	88588	94210	99541	104919	110694	117328	125564	136836	154508	
P_T	82259	87243	88529	86205	80372	71153	58664	42945	23761	0	88529
P_L	0	15383	32222	49770	67440	84796	101609	117992	134757	154508	154508

Lifting lug calculation

section modulus = $Z = (A^2 \times t_L) / 6 = 33333,33 \text{ mm}^3$
 A_p = Net section at pin hole = $2 \times L_3 \times t_L + 2 \times t_p (D_3 - D_1) = 2000 \text{ mm}^2$
 A_{nx} = Net section at side pin-hole = $t_L \times (D_3 - D_1/2) + 2 \times t_p \times [(D_3 - D_1)/2] = 600 \text{ mm}^2$
 A_{ny} = Net section at top of lug = $t_L \times (R_3 - D_1/2) + 2 \times t_p \times [(D_3 - D_1)/2] = 600 \text{ mm}^2$
 Moment at lug $M_L = P_T \times E + P_L \times (L_3 - D_c)$ Nmm = worst case moment P_L an P_T same sign
 Bending stress in lug $\sigma_b = M_L / Z =$ N/mm²
 Tension at underside lug $\sigma_L = P_L / (2 \times L_4 \times t_L) =$ N/mm²
 τ_p = shear stress at pin-hole = $P_L / (A_p) =$ N/mm²
 τ_{Lx} = shear stress at side of lug = $P_L / (2 \times A_{nx}) =$ N/mm²
 τ_{Ly} = shear stress at top of lug = $P_T / (A_{ny}) =$ N/mm²
 σ_p = pin bearing stress = $P_T / (D_3 \times (t_L + 2 \times t_p))$ or $P_T / (D_1 \times t_L) =$ N/mm²

θ = angle between vertical axis tank and floor

θ	0	10	20	30	40	50	60	70	80	90	MAX
M_L	4112932	4362130	4426432	4310247	4018616	3557633	2933198	2147274	1188067	0	4,43E+06
σ_b	123	131	133	129	121	107	88	64	36	0	133
σ_L	0	4	8	12	17	21	25	29	34	39	39
τ_p	0	4	8	12	17	21	25	29	34	39	39
τ_{Lx}	0	6	13	21	28	35	42	49	56	64	64
τ_{Ly}	69	73	74	72	67	59	49	36	20	0	74
σ_p	51	55	55	54	50	44	37	27	15	0	55

Max loads from above table.

σ_b	133 N/mm ²	< allowable
σ_L	39 N/mm ²	< allowable
τ_p	39 N/mm ²	< allowable
τ_{Lx}	64 N/mm ²	< allowable
τ_{Ly}	74 N/mm ²	< allowable
σ_p	55 N/mm ²	< allowable

Ordernr: 5685B
 Klant: Argen Energy
 Tek N°: B130700-A0072-5685B-0821

Weld Calculation

Center of gravity welding group

distance of Z to X-axis = 90,4 mm
 distance of Z to Y-axis = 40,4 mm

Inertia moments of the joint

I_{xz} = moment of inertia weld group around X_z -axis [mm^4/mm] 2,85E+05 [mm^4/mm]
 I_{yz} = moment of inertia weld group Y_z -axis [mm^4/mm] 2,80E+06 [mm^4/mm]
 I_{pz} polair moment of inertia = $I_{pz} = I_{xz} + I_{yz} = [\text{mm}^4/\text{mm}]$ 3,08E+06 [mm^4/mm]

Applied forces and moments.

L_{TX} = distance center of gravity to center pin-hole X-direction= -10 mm
 L_{TY} = distance center of gravity to center pin-hole Y-direction= 220 mm
 Moment at center of gravity welding group $M_w = P_T \cdot L_{TY} + P_L \cdot L_{TX}$ Nmm = worst case moment P_L an P_T same sign
 f_{wx} = max. force on weld in X-direction = $P_T/L_w + (Y_z \cdot M_w)/I_{pz}$ N/mm
 f_{wy} = max. force on weld in Y-direction = $P_L/L_w + (X_z \cdot M_w)/I_{pz}$ N/mm
 f_w = max. combined force on weld = $(F_{wx}^2 + F_{wy}^2)^{1/2}$
 Y_z = distance to X-as from critical point in welding group 10 mm
 X_z = distance to Y-as from critical point in welding group 165 mm

θ = angle between vertikal axis tank and floor

θ	0	10	20	30	40	50	60	70	80	90	MAX
M_w	9032632	9505951	9566214	9226684	8501267	7405435	5953249	4148477	1961307	-742825	9,57E+06
f_{wx}	107	114	115	112	104	92	75	54	29	-2	115
f_{wy}	483	523	542	541	519	477	416	335	234	109	542
f_w	494	535	554	552	529	486	423	339	236	109	554

Max load from above table.

$f_w =$ 554 N/mm
 Minimum needed weld size = $f_w/F_w =$ 3,17 mm
 Used weld size = 5 mm < allowable

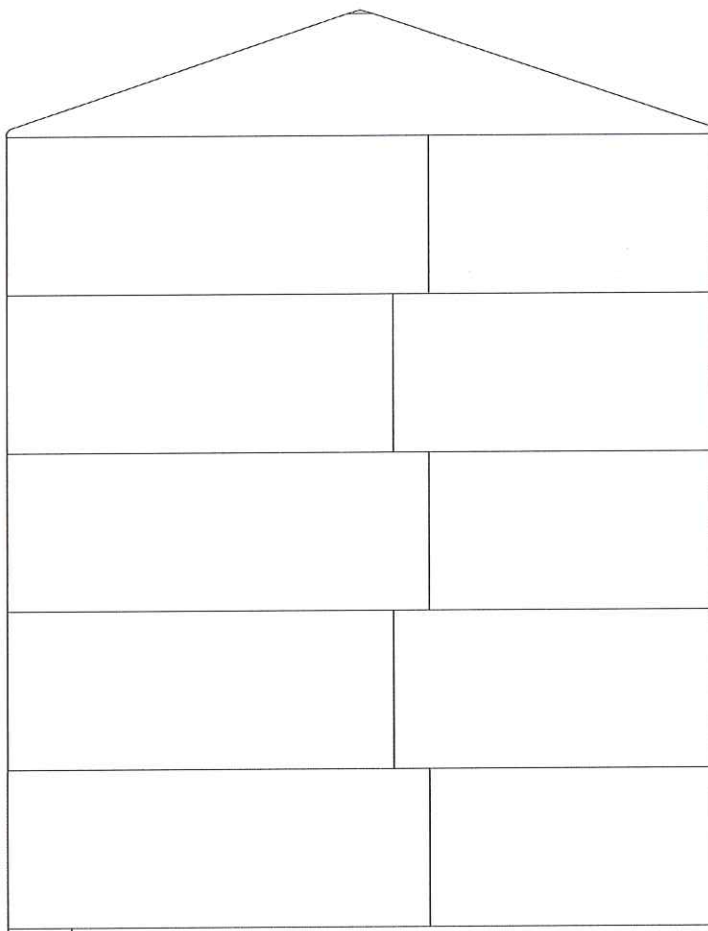
MATERIAL TRACEABILITY RECORDS

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

LAYOUT MATERIAL

Order Nr. **5685B** **B130700**

Heat 122034 - 128064 1.4404 Cert 04



Heat 124034 1.4404 Cert 03

Heat 124034 1.4404 Cert 03

Heat 124034 1.4404 Cert 03

Heat 133127 1.4404 Cert 03

Heat 126037 1.4404 Cert 02

Heat 127052 - 129041 1.4404 Cert 01

MATERIAL TRACEABILITY RECORDS

Manufacturer : Ziemann-Holvrieka nv Year built : 2022 Tank n° : B130700
 Shop order nr. : 5685B Drawing nr. : A0072-5685B-0821 Client : BIODIESEL ARGENT II BV
 Design approval : ATLC Design appr. Nr. : 19/220627/13

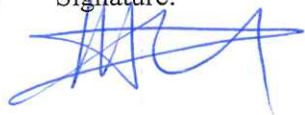
Herewith we declare: for the production of 1 x Vert. St. Steel Tank B130700
 the materials are used according to the following list being provided with the matching material test certificates.

Pos.	Part of vessel	Material type	Delivered by	Cert.	Heat Nr.	Cert. Nr.
1	Flat bottom	Øins.6200*5 R=65 H=80mm 1.4404	APERAM	3.1	127052 - 129041	Cert 01
2	Shell	Øins.6200*5 H=1500mm 1.4404	APERAM	3.1	126037	Cert 02
3	Shell	Øins.6200*4 H=1500mm 1.4404	APERAM	3.1	133127 - 124034	Cert 03
4	Top	Øins. 6200*6 H=1189 ∠=20° 1.4404	APERAM	3.1	122034 - 128064	Cert 04
5	Flange	DN80 PN16 EN1092-1 Type 11 1.4404	VIRAJ	3.1	117055	Cert 05
6	Pipe (Spare)	DN80 Ø88,9*3,05 1.4404	FROCH	3.1	APS070112	Cert 06
8	Flange	DN80 PN16 EN1092-1 Type 11 1.4404	VIRAJ	3.1	117055	Cert 05
9	Pipe (Spare)	DN80 Ø88,9*3,05 1.4404	FROCH	3.1	APS070112	Cert 06
11	Flange	DN200 PN10 EN1092-1 Type 11 1.4404	VIRAJ	3.1	116001	Cert 07
12	Pipe (Vent)	DN200 Ø219,08*3,76 1.4404	FROCH	3.1	APS070146	Cert 08
15	Flange	DN50 PN16 EN1092-1 Type 11 1.4404	CHANDAN	3.1	CH-14124	Cert 09
16	Pipe (High level)	DN50 Ø60,33*2,77 1.4404	FROCH	3.1	AQE070398	Cert 10
18	Flange	DN100 PN16 EN1092-1 Type 11 1.4404	VIRAJ	3.1	116412 - 116315	Cert 11
19	Pipe (Inlet product 1)	DN100 Ø114,3*3,05 1.4404	FROCH	3.1	APW070526	Cert 12
21	Flange	DN100 PN16 EN1092-1 Type 11 1.4404	VIRAJ	3.1	116412 - 116315	Cert 11
22	Pipe (Inlet product 2)	DN100 Ø114,3*3,05 1.4404	FROCH	3.1	APW070526	Cert 12
24	Flange	DN100 PN16 EN1092-1 Type 11 1.4404	VIRAJ	3.1	116412 - 116315	Cert 11
25	Pipe (Radar)	DN100 Ø114,3*3,05 1.4404	FROCH	3.1	APW070526	Cert 12

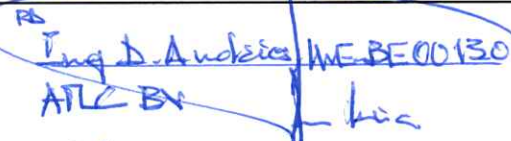
Inspection according to EN14015

Smaller, pressure containing parts like stanchions etc. are produced using tested materials according to the drawing. These materials are delivered according to the valid requirements and supplied with the matching test certificates. The material test certificates are available for inspection. The particular certificates are filed for at least 10 years. Copies are available upon request.

Signature:



Insp. Auth.:



Signature :

Date :

02/23

Date : 08/02/2023

MATERIAL TRACEABILITY RECORDS

Manufacturer : Ziemann-Holvrieka nv
Shop order nr. : 5685B
Design approval : ATLC

Year built : 2022
Drawing nr. : A0072-5685B-0821
Design appr. Nr. : 19/220627/13

Tank n° : B130700
Client : BIODIESEL ARGENT II BV

Herewith we declare: for the production of 1 x Vert. St. Steel Tank B130700
the materials are used according to the following list being provided with the matching material test certificates.

Pos.	Part of vessel	Material type	Delivered by	Cert.	Heat Nr.	Cert. Nr.
29	Flange	DN600 Ø785/620*22 1.4404	OUTOKUMPU	3.1	521285	Cert 13
30	Pipe	DN600 Ø620*10 1.4404	MARCEGAGLIA	3.1	Y220110A24-1	Cert 14
32	Blindflange	DN600 Ø785*16 1.4404	SIJ ACRONI	3.1	72951	Cert 15
38	Flange	DN25 PN40 EN1092-1 Type 11 1.4404	HERTECANT - BFN	3.1	283791 - 116725	Cert 16
39	Pipe (Sampling)	DN25 80Sch Ø33,4*4,55 1.4404	MAXIM	3.1	21L0027	Cert 17
40	Flange	DN50 PN16 EN1092-1 Type 11 1.4404	HERTECANT	3.1	E211176	Cert 18
41	Pipe (Temp.transmitter)	DN50 80Sch Ø60,33*5,54 1.4404	MAXIM	3.1	20L1830	Cert 19
42	Flange	DN50 PN16 EN1092-1 Type 11 1.4404	HERTECANT	3.1	E211176	Cert 18
43	Pipe (Spare)	DN50 80Sch Ø60,33*5,54 1.4404	MAXIM	3.1	20L1830	Cert 19
44	Flange	DN50 PN16 EN1092-1 Type 11 1.4404	HERTECANT	3.1	E211176	Cert 18
45	Pipe (Low level)	DN50 80Sch Ø60,33*5,54 1.4404	MAXIM	3.1	20L1830	Cert 19
46	Flange	DN150 PN16 EN1092-1 Type 11 1.4404	CHANDAN	3.1	CH-9334	Cert 20
47	Pipe (Outlet product)	DN150 80Sch Ø168,28*10,97 1.4404	TUBAVEX	3.1	WS-180049	Cert 21
48	Flange	DN80 PN16 EN1092-1 Type 11 1.4404	VIRAJ	3.1	117055	Cert 05
49	Pipe + Bend (Drainage)	DN80 80Sch Ø88,9*7,62 1.4404	MAC	3.1	53TG112	Cert 22
50	Pipe (Drainage)	DN80 Ø88,9*3,05 1.4404	FROCH	3.1	APS070112	Cert 06

Inspection according to EN14015

Smaller, pressure containing parts like stanchions etc. are produced using tested materials according to the drawing. These materials are delivered according to the valid requirements and supplied with the matching test certificates. The material test certificates are available for inspection. The particular certificates are filed for at least 10 years. Copies are available upon request.

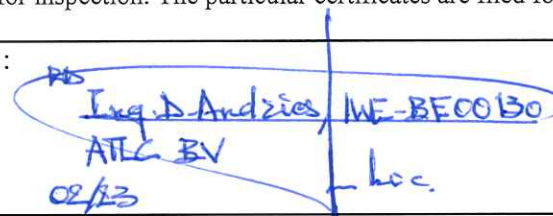
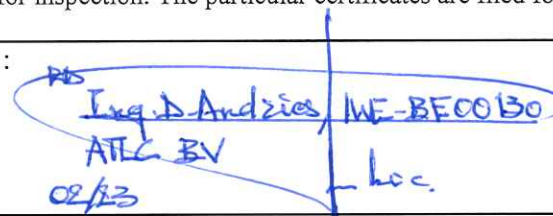
Signature:



Insp. Auth. :

Signature :

Date :

Insp. Auth. : 
Signature : 
Date : 02/03

Date : 08/02/2023

MATERIAL TRACEABILITY RECORDS

Manufacturer : *Ziemann-Holvrieka nv*

Year built : 2022

Tank n° **B130700**

Shop order nr. : 5685B

Drawing nr. : A0072-5685B-0821

Client : BIODIESEL ARGENT II BV

Design approval : ATLC

Design appr. Nr. : 19/220627/13

Herewith we declare: for the production of 1 x Vert. St. Steel Tank B130700

the materials are used according to the following list being provided with the matching material test certificates.

[illegible]Inspection according to *EN14015*

Smaller, pressure containing parts like stanchions etc. are produced using tested materials according to the drawing. These materials are delivered according to the valid requirements and supplied with the matching test certificates. The material test certificates are available for inspection. The particular certificates are filed for at least 10 years. Copies are available upon request.



Quality - Stefaan Holvoet

Signature: _____

Insp. Auth. :

Signature :

Date :

Date : 08/02/2023

Cert 01

 Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 21K0031284-01 V01					
		Certified acc.PED 2014/68/EU Annex I 4.3 by Certification Body 0036 of TUV SUD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed by TÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜVSÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 4.1.1										6203L 6204L 6205L 6206L					
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80698356/09-25118/003/09		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen 		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger ZIEMANN HOLVRIEKA N.V. WERVIKSTRAAT 350 8930 MENEN BELGIE						Purchaser's order number N° de commande client Kundenbestellnummer 20906							
Product - Produit - Erzeugnis COIL, COLD ROLLED, FINISH 2 B COIL, LAMINE A FROID, FINI 2 B COIL,KALTGEWALZT,GEGLUEHT+GEBEIZT,LEICHT NACHGEWALZT		Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2016 1.4404 / 1.4401 EN 10088-2-2014 1.4404 / 1.4401 ASTM A 240-2020 TYPE 316L / 316		Finish Présentation Ausfuehrung 2B 2B 2B		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage						Product delivery condition Etat de livraison du produit - Lieferzustand Solution Annealing Hypertrempe 1050 °C Lösungsglühen Forced air-water/air forcé-eau Geblaease Luft-Wasser					
6203L-6204L-6205L-6206L																	
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen Thickness Epaisseur - Staerke 5.00 mm						Width Largeur - Breite 1500.00 mm		Length Longueur - Laenge		Number of pieces Nb de pièces - Stueckzahl 4					
Coil n. N.Bobine - Band Nr. 12705235		Heat n. N.Coulée - Schmelz Nr. 127052										Net weight Poids net - netto Gewicht 21760 KG					
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																	
		C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P						
Required -Exigé %mini Anforderung. %maxi		0.030	0.75	2.00	10.00 13.00	16.50 18.00	2.00 2.50		0.100	0.015	0.045						
Cast Analysis Analyse coulee Analyse Schmelze		0.028 C71	0.58 C72	1.22 C73	10.07 C74	16.59 C75	2.03 C76		0.052 C78	0.004 C79	0.034 C80						
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungspruefung wurde durchgefuehrt : OK								D52									
Location (1)		MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370										C20					
		Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :		C03			
1	T	Direction (2) Required Exigé Anforderung mini maxi		Yield or proof strength Limite d'élasticité Dehngrenze MPa Rp0.2% 240 Rp1% 270		Tensile Strength Résistance à la traction Zugfestigkeit MPa Rm 530 680		Elongation after fracture Allongement après rupt. Bruchdehnung % A5 40 50mm 40		Hardness Dureté Haearte HRBW 95		Yield or proof strength Limite d'élasticité Dehngrenze MPa Rp0.2% Rp1%		Tensile str. Résist. MPa Zugfestigkeit Rm		Elongation % Allongement. Bruchdehnung A5	
		Obtained Obtenu Ergebnisse		330 360		630		51 51		86							
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest				Corrosion test Test de corrosion Korrosionstest				Roughness EN ISO 4288		E0.2(T)/R(T) %							
C40 (t(°c)) C44				EN ISO 3651/2 - A:OK				0.44 C50		52 C51		C52		C53		C54 C55	
C42				D51				Internal cleanliness:		A: B: C: D:		C57					
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition LieferscheinNummer 2021045112-25118		Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung Quality Department 19/8/2021 The inspector Le responsable Der Werkssachverstaendige		A05					
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs				Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung				D01									

Cert 01

 Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 21K0034072-01 V01																					
		Certified acc.PED 2014/68/EU Annex I 4.3 by Certification Body 0036 of TUV SUD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed by TÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜVSÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 4.1.1																															
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80698330/04-25118/002/04		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen 		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger ZIEMANN HOLVRIEKA N.V. WERVIKSTRAAT 350 8930 MENEN BELGIE						Purchaser's order number N° de commande client Kundenbestellnummer 20904																							
Product - Produit - Erzeugnis COIL., COLD ROLLED, FINISH 2 B COIL., LAMINE A FROID, FINI 2 B COIL.,KALTGEWALZT,GEGLUEHT+GEBEIZT,LEICHT NACHGEWALZT										Customer article number N.article client Artikelnummer des Kunden																							
Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2016 1.4404 / 1.4401 EN 10088-2-2014 1.4404 / 1.4401 ASTM A 240-2020 TYPE 316L / 316		Finish Présentation Ausfuehrung 2B 2B 2B		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage						Product delivery condition Etat de livraison du produit - Lieferzustand Solution Annealing Hypertrempe 1050 °C Lösungsglühen Forced air-water/air forcé-eau Geblaease Luft-Wasser																							
6213L																																	
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen Thickness Epaisseur - Staerke 5.00 mm						Width Largeur - Breite 1000.00 mm		Length Longueur - Laenge		Number of pieces Nb de pièces - Stueckzahl 1																					
Coil n. N.Bobine - Band Nr. 12904118		Heat n. N.Coulée - Schmelz Nr. 129041										Net weight Poids net - netto Gewicht 5440 KG																					
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																																	
		C		Si		Mn		Ni		Cr		Mo		Ti		N		S		P													
Required -Exigé %mini Anforderung. %maxi		0.030		0.75		2.00		10.00 13.00		16.50 18.00		2.00 2.50				0.100		0.015		0.045													
Cast Analysis Analyse coulee Analyse Schmelze		0.024		0.44		1.30		10.12		16.68		2.01				0.039		0.002		0.034													
		C71		C72		C73		C74		C75		C76		C77		C78		C79		C80		C81		C82		C83		C84		C85		C86	
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungspruefung wurde durchgefuehrt : OK																																	
Location (1)		MECHANICAL PROPERTIES - PROPRIETES MECANIKES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370																															
		Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :																					
1	T	Direction (2)		Yield or proof strength Limite d'élasticité Dehngrenze MPa				Tensile Strength Résistance à la traction Zugfestigkeit MPa				Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haearte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung													
		Required Exigé Anforderung																															
		mini maxi																															
		Obtained Obtenu Ergebnisse																															
				C11		C14		C12		C13		C15		C31		C16		C17		C18		C19											
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest				Corrosion test Test de corrosion Korrosionstest				Roughness EN ISO 4288		E0.2(T)/R(T) %																							
C40				t(°c)				C44																									
								EN ISO 3651/2 - A:OK				0.34		49		C52		C53		C54		C55		C05									
								D51				Internal cleanliness:		A:		B:		C:		D:		C57											
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition LieferscheinNummer 2021046977-25118				Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung Quality Department 8/9/2021 The inspector Le responsable Der Werkssachverstaendige  R. Vliegen																					
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs				Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung																													

Cert 02

 Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 21K0032375-01 V01																					
		Certified acc.PED 2014/68/EU Annex I 4.3 by Certification Body 0036 of TUV SUD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed by TÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜVSÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 4.1.1										6207L 6208L																					
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80698330/05-25118/002/05		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen 		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger ZIEMANN HOLVRIEKA N.V. WERVIKSTRAAT 350 8930 MENEN BELGIE						Purchaser's order number N° de commande client Kundenbestellnummer 20904																							
Product - Produit - Erzeugnis COIL, COLD ROLLED, FINISH 2 B COIL, LAMINE A FROID, FINI 2 B COIL,KALTGEWALZT,GEGLUEHT+GEBEIZT,LEICHT NACHGEWALZT		Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2016 1.4404 / 1.4401 EN 10088-2-2014 1.4404 / 1.4401 ASTM A 240-2020 TYPE 316L / 316		Finish Présentation Ausfuehrung 2B 2B 2B		Steelmaking process Mode d'elaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen BURGSPEC01-V06						Customer article number N.article client Artikelnummer des Kunden																					
6207L-6208L																																	
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM				Dimensions Dimensions - Abmessungen Thickness Epaisseur - Staerke 5.00 mm						Width Largeur - Breite 1500.00 mm		Length Longueur - Laenge		Number of pieces Nb de pièces - Stueckzahl 2																			
Coil n. N.Bobine - Band Nr. 12603736		Heat n. N.Coulée - Schmelz Nr. 126037		Net weight Poids net - netto Gewicht 11180 KG																													
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																																	
		C		Si		Mn		Ni		Cr		Mo		Ti		N		S		P													
Required -Exigé %mini Anforderung. %maxi		0.030		0.75		2.00		10.00 13.00		16.50 18.00		2.00 2.50				0.100		0.015		0.045													
Cast Analysis Analyse coulee Analyse Schmelze		0.026		0.47		1.32		10.03		16.60		2.01				0.034		0.003		0.033													
		C71		C72		C73		C74		C75		C76		C77		C78		C79		C80		C81		C82		C83		C84		C85		C86	
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungspruefung wurde durchgefuehrt : OK																																	
Location (1)										MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370																							
Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :																							
Direction (2) Required Exigé Anforderung mini maxi		Yield or proof strength Limite d'élasticité Dehngrenze MPa				Tensile Strength Résistance à la traction Zugfestigkeit MPa				Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haearte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung															
		Rp0.2%		Rp1%		Rm		A5		50mm		HRBW		Rp0.2%		Rp1%		Rm		A5													
		240		270		530 680		40		40		95																					
		272		298		583		54		54		81																					
Obtained Obtenu Ergebnisse		C11		C14		C12		C13		C15		C31		C16		C17		C18		C19													
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest				Corrosion test Test de corrosion Korrosionstest				Roughness EN ISO 4288		E0.2(T)/R(T) %																							
C40 (t(°c)) C44				EN ISO 3651/2 - A:OK				0.06 C50		46 C51		C52		C53		C54		C55		C05													
C42				D51				Internal cleanliness:		A:		B:		C:		D:		C57															
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition LieferscheinNummer 2021045651-25118				Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung Quality Department 27/8/2021 The inspector Le responsable Der Werkssachverstaendige  R. Vliegen																					
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs				Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung				D01				Z02																					



Aperam Stainless Services & Solutions Benelux S.A.

Genk-Zuid, Zone 5 Bosdel 87
B - 3600 GENK

Tel: +32 89 36 56 00
Fax: +32 89 36 56 31

TEST REPORT RELEVÉ DE CONTRÔLE WERKSZEUGNIS

According to / Selon / Gemäß
EN 10204

BL: 0178330 - 1

Date: 22/10/2021

Cert 03

6227L - 6228L

Manufact. / Product. / Herstell.

APERAM STAINLESS EUROPE

Supplier Lot / Lot Fourn. / Band Nr

078595

Item / Article / Produkt

COIL 1.4404 2B 4,0 X 1500,0

Heat N° / N° de coulée / Schmelz Nr

124034

Customer / Client / Kunde

ZIEMANN HOLVRIEKA NV

Steel Designation / Désignation Acier / Stahlbezeichnung

EN 10028-7 WNR 1.4404/1.4401
EN 10088-2 WNR 1.4404/1.4401
ASTM A 240(M) TYPE 316L/316
ASME SA 240 TYPE 316L/316

Order / Commande / Order

110133804 - 08

Reference / Référence / Referenz

AD 2000 W2 -- AD 2000 W10 -- PED 2014/68/EU

Mill Certificate / N° de Certificats / Prüfzeugnis Nr

2110694569

Chemical Analysis / Analyse Chimique / Chemische Zusammensetzung

	C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Cu	Al				
Cast Analysis Analyse Coulée Analyse	0,025	0,5	1,31	10,06	16,6	2,03		0,036	0,002	0,036	0,38					

Mechanical Properties / Propriétés Mécaniques / Mechanische Werte EN ISO 6892-1 B

	Yield strength Limite D'élasticité Dehngrenze MPA		Tensile strength Résistance à la traction Zugfestigkeit MPA		Elongation after fracture (A) Allongement après rupture Bruchdehnung %		Hardness Dureté Haerte		
	Rp 0.2 %	Rp 1%	Rm		A5	50 mm	HRB	DDQ	
	324		638			52	83		

Material Identification / Identification Matériel / Materialidentifikation

Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht
	Kg			Kg			Kg			Kg
0631973	5250									
0631976	5410									
6227L - 6228L										

Number of lots / Nombre de lots / Bundanzahl : 2

Total weight / Poids Total / Gesamt Gewicht [Kg] : 10660

The Inspector
Le Responsable
Der Werksachverstaendige

Alf Schreurs

aperam Aperam - Stainless France Aperam Isbergues 62330 Isbergues FRANCE A04		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1 A02										N-Nr-N 21I0694569-01 V01 A03																					
A01		Ausgestellt im Einvernehmen mit dem TÜV SÜD - Auf Gegenzeichnung wird verzichtet Issued in accordance with TÜV SÜD - Verification is not required Etabli en accord avec le TÜV SÜD - Dispense de contresignature AD 2000 Merkblatt W0 - PED 2014/68 EU Annex I.Point 4.3 Z05										6227L 6228L Cert 03																					
Manufacturer's works order number N° de la commande usine productrice Werkauftragsnummer 80723078 /01-26933/1 A08		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen A08		UI2 Z03		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger A06						Purchaser's order number N° de commande client Kundenbestellnummer 108332308 A07																					
Product - Produit - Erzeugnis COLD-ROLLED COIL BOBINE LAMINEE A FROID KALTGEWALZTES BAND B01		Steel designatation Désignation de l'acier Stahlbezeichnung EN 10028-7 / 16 - W2-W10 -1.4404 EN 10088-2 / 14 - 1.4404 ASTM A 240 / 20 - TYPE 316L ASME SA 240 / 19 - TYPE 316L EN 10088-4 / 09 - 1.4404 B02		Finish Présentation Ausführung 2B 2B 2B 2B 2B B01		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage C70						Product delivery condition Etat de livraison du produit - Lieferzustand Solution annealing Hypertrempe : 1040 C MINI Lösungsglühen A09																					
Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen B03		Product delivery condition Etat de livraison du produit - Lieferzustand Solution annealing Hypertrempe : 1040 C MINI Lösungsglühen A09						Forced Air Air forcé Geblaese Luft B04																									
CORR. TEST:ASTM A 262-E: OK / CORROSION INTERGRANULAIRE SELON ISO 3651/2 : OK / ASTM A480 / A480M -- ASME SA 480/SA 480M / NACE MR 0175 / ISO 15156-1 / ISO 15156-3 -- NACE MR 0103 / ISO 17945 / ASME-CODE SECT.2 PART A / 6227L - 6228L Z06																																	
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN FRANCE B07				Dimensions Dimensions - Abmessungen Thickness Epaisseur - Staerke 4,000 mm B09						Width Largeur - Breite 1500,00 mm B10		Length Longueur - Laenge B11		Number of pieces Nb de pièces - Stueckzahl 1 B08																			
Coil n. N.Bobine - Band Nr. 78595		Heat n. N.Coulée - Schmelz Nr. 124034		Net weight Poids net - netto Gewicht 21670 KGS B13																													
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																																	
		C		Si		Mn		Ni		Cr		Mo		Ti		N		S		P		Cu		Co									
Required -Exigé %mini Anforderung. %maxi		0,030		0,75		2,00		10,00 13,00		16,50 18,00		2,000 2,500				0,100		0,0150		0,045													
Cast Analysis Analyse coulée Analyse Schmelze		0,025		0,50		1,31		10,06		16,60		2,030				0,036		0,0022		0,036		0,380		0,257									
		C71		C72		C73		C74		C75		C76		C77		C78		C79		C80		C81		C82		C83		C84		C85		C86	
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungpruefung wurde durchgeführt : OK C04																						D52											
Location (1)		MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE ISO 6892-1 B / A-SA 370 C20																															
		Room temperature - Température ambiante - Raumtemperatur Test temperature (°C) : C03																															
Direction (2)		Yield or proof strength Limite d'élasticité Dehngrenze MPa				Tensile Strength Résistance à la traction Zugfestigkeit MPa				Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haearte		Yield or proof strength Limite d'élasticité Dehngrenze MPa				Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung													
		Required Exigé Anforderung		Rp0.2%		Rp1%		Rm		50mm		5,65		HRBW		Rp0.2%		Rp1%		Rm													
		mini maxi		240		270		530 680		40		40		95																			
1 T		Obtained Obtenu Ergebnisse		324		366		638		52		53		83																			
2 T														82																			
				C11		C14		C12		C13		C15		C31		C16		C17		C18		C19											
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest				Corrosion test Test de corrosion Korrosionstest																													
C40 t(°c) C44				EN ISO 3651-2 :OK D51				C50		C51		C52		C53		C54		C55		C05													
C42																																	
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte C01				The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen Z01				Packing list Avis d'expédition LieferscheinNummer 210818I00246-100414 A10				Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung A05																					
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs C02				Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung D01				Quality Control 18/08/2021 Laurent DUBOIS				The inspector Le responsable Der Werkssachverstaendige Z02																					



Aperam Stainless Services & Solutions Benelux S.A.

Genk-Zuid, Zone 5 Bosdel 87
B - 3600 GENK

Tel: +32 89 36 56 00
Fax: +32 89 36 56 31

TEST REPORT RELEVÉ DE CONTRÔLE WERKSZEUGNIS

According to / Selon / Gemäß
EN 10204

BL: 0179211 - 1

Date: 24/11/2021

Cert 03

6230L

Manufact. / Product. / Herstell.

APERAM STAINLESS EUROPE

Supplier Lot / Lot Fourn. / Band Nr

081033

Item / Article / Produkt

COIL 1.4404 2B 4,0 X 1500,0

Heat N° / N° de coulée / Schmelz Nr

133127

Customer / Client / Kunde

ZIEMANN HOLVRIEKA NV

Steel Designation / Désignation Acier / Stahlbezeichnung

EN 10028-7 WNR 1.4404/1.4401
EN 10088-2 WNR 1.4404/1.4401
ASTM A 240(M) TYPE 316L/316
ASME SA 240 TYPE 316L/316

Order / Commande / Order

110133804 - 09

Reference / Référence / Referenz

AD 2000 W2 -- AD 2000 W10 -- PED 2014/68/EU

Mill Certificate / N° de Certificats / Prüfzeugnis Nr

2110704976

Chemical Analysis / Analyse Chimique / Chemische Zusammensetzung

	C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Cu	Al				
Cast Analysis Analyse Coulée Analyse	0,027	0,53	1,24	10,08	16,52	2,04		0,042	0,001	0,032	0,39					

Mechanical Properties / Propriétés Mécaniques / Mechanische Werte EN ISO 6892-1 B

	Yield strength Limite D'élasticité Dehngrenze MPA		Tensile strength Résistance à la traction Zugfestigkeit MPA		Elongation after fracture (A) Allongement après rupture Bruchdehnung %		Hardness Dureté Haerte	
	Rp 0.2 %	Rp 1%	Rm		A5	50 mm	HRB	DDQ
	303		617			53	82	

Material Identification / Identification Matériel / Materialidentifikation

Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht
	Kg			Kg			Kg			Kg
0635100 6230L	5620									

Number of lots / Nombre de lots / Bundanzahl : 1

Total weight / Poids Total / Gesamt Gewicht [Kg] : 5620

The Inspector
Le Responsable
Der Werksachverständige

Alf Schreurs

A04 aperam Aperam - Stainless France Aperam Isbergues 62330 Isbergues FRANCE A01		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1 A02 Ausgestellt im Einvernehmen mit dem TÜV SÜD - Auf Gegenzeichnung wird verzichtet Issued in accordance with TÜV SÜD - Verification is not required Etabli en accord avec le TÜV SÜD - Dispense de contresignature AD 2000 Merkblatt W0 - PED 2014/68 EU Annex I.Point 4.3 Z05										N-Nr-N 21I0704976-01 V01 A03 6230L Cert 03																			
Manufacturer's works order number N° de la commande usine productrice Werkauftragsnummer 80738829 /01-30982/1 A08		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen A08 UI2 Z03		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger A06 APERAM SS&S BENELUX BOSDEL 87 87 3600 GENK BELGIQUE						Purchaser's order number N° de commande client Kundenbestellnummer 110332810 A07						Customer article number N.article client Artikelnummer des Kunden ART043059 A09															
Product - Produit - Erzeugnis COLD-ROLLED COIL BOBINE LAMINEE A FROID KALTGEWALZTES BAND B01		Steel designatation Désignation de l'acier Stahlbezeichnung EN 10028-7 / 16 - W2-W10 -1.4404 EN 10088-2 / 14 - 1.4404 ASTM A 240 / 20 - TYPE 316L ASME SA 240 / 21 - TYPE 316L EN 10088-4 / 09 - 1.4404 B02		Finish Présentation Ausführung 2B 2B 2B 2B 2B B02		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungsverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage C70						Product delivery condition Etat de livraison du produit - Lieferzustand B04 Solution annealing Hypertrempe : 1040 C MINI Lösungsglühen Forced Air Air forcé Geblaese Luft																			
CORROSION INTERGRANULAIRE SELON ISO 3651/2 : OK / CORR. TEST:ASTM A 262-E: OK / ASTM A480 / A480M -- ASME SA 480/SA 480M / NACE MR 0175 / ISO 15156-1 / ISO 15156-3 -- NACE MR 0103 / ISO 17945 / ASME-CODE SECT.2 PART A / 6230L Z06																															
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN FRANCE B07		Dimensions Dimensions - Abmessungen B09 Thickness Epaisseur - Staerke 4,000 mm B10 Width Largeur - Breite 1500,00 mm B11 Length Longueur - Laenge						Number of pieces Nb de pièces - Stueckzahl 1 B08		Net weight Poids net - netto Gewicht 16380 KGS B13																					
Coil n. N.Bobine - Band Nr. 81033 B07		Heat n. N.Coulée - Schmelz Nr. 133127 B07		CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG C Si Mn Ni Cr Mo Ti N S P Cu Co																											
Required -Exigé %mini Anforderung. %maxi C71		0,030 C72		0,75 C73		2,00 C74		10,00 C75		16,50 C76		2,000 C77		2,500 C78		0,100 C79		0,0150 C80		0,045 C81		C82		C83		C84		C85		C86	
Cast Analysis Analyse coulée Analyse Schmelze C71		0,027 C72		0,53 C73		1,24 C74		10,08 C75		16,52 C76		2,040 C77		0,042 C78		0,0010 C79		0,032 C80		0,390 C81		0,200 C82		C83		C84		C85		C86	
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungpruefung wurde durchgefuehrt : OK C04										C93				D52																	
Location (1) C00		MECHANICAL PROPERTIES - PROPRIETES MECANIQUES - MECHANISCHE WERTE C20										ISO 6892-1 B / A-SA 370 C03																			
Direction (2) C00		Room temperature - Température ambiante - Raumtemperatur C03										Test temperature (°C) : C03																			
Yield or proof strength Limite d'élasticité Dehngrenze MPa C11		Tensile Strength Résistance à la traction Zugfestigkeit MPa C14		Elongation after fracture Allongement après rupt. Bruchdehnung % C13		Hardness Dureté Haearte C31		Yield or proof strength Limite d'élasticité Dehngrenze MPa C16		Tensile str. Résist. MPa Zugfestigkeit C17		Elongation % Allongement. Bruchdehnung C19																			
Required Exigé Anforderung mini maxi C11		Rp0.2% 240 C14		Rp1% 270 C14		Rm 530 680 C12		50mm 40 C13		5,65 40 C15		HRBW 95 C31		Rp0.2% 303 C16		Rp1% 337 C17		Rm 617 C18		C19											
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest C40		Corrosion test Test de corrosion Korrosionstest C44		EN ISO 3651-2 :OK D51		Internal cleanliness: A: B: C: D: C57		Yield or proof strength Limite d'élasticité Dehngrenze MPa C16		Tensile str. Résist. MPa Zugfestigkeit C17		Elongation % Allongement. Bruchdehnung C19																			
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte C01		The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen Z01						Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung A05																							
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs C02		Packing list Avis d'expédition LieferscheinNummer 211029102536-100414 A10						Quality Control 29/10/2021 Laurent DUBOIS Z02																							
Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung D01		The inspector Le responsable Der Werkssachverstaendige Z02						Z02																							

aperam Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 21K0032377-01 V01																															
		Certified acc.PED 2014/68/EU Annex I 4.3 by Certification Body 0036 of TÜV SÜD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed byTÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜVSÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 4.1.1																																									
A01		Tech.Req.:AD 2000 W2 -- AD 2000 W10 -- EN 13445-2										Z05																															
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80698356/11-25118/003/11		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen		GNKI		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger ZIEMANN HOLVRIEKA N.V. WERVIKSTRAAT 350 8930 MENEN BELGIE										Purchaser's order number N° de commande client Kundenbestellnummer 20906																											
A08		Z03		A06										A07																													
Product - Produit - Erzeugnis COIL, COLD ROLLED, FINISH 2 B COIL, LAMINE A FROID, FINI 2 B COIL,KALTGEWALZT,GEGLUEHT+GEBEIZT,LEICHT NACHGEWALZT				B01		A06										A09																											
Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2016 1.4404 / 1.4401 EN 10088-2-2014 1.4404 / 1.4401 ASTM A 240-2020 TYPE 316L / 316		Finish Présentation Ausführung 2B 2B 2B		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungsverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage										Product delivery condition Etat de livraison du produit - Lieferzustand Solution Annealing Hypertrempe 1050 °C Lösungsglühen Forced air-water/air forcé-eau Gebläse Luft-Wasser																													
B02				C70										B04																													
B03		Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen BURGSPEC01-V06																																									
6210L-6211L																																											
Z06																																											
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen Thickness Epaisseur - Staerke 6.00 mm										Width Largeur - Breite 1500.00 mm										Length Longueur - Laenge										Number of pieces Nb de pièces - Stueckzahl 2											
Coil n. N.Bobine - Band Nr. 12203445		Heat n. N.Coulée - Schmelz Nr. 122034		B09										B10										B11										B13									
																																		10040 KG									

 Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 21K0035065-01 V01			
		Certified acc.PED 2014/68/EU Annex I 4.3 by Certification Body 0036 of TUV SUD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed by TÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜVSÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 4.1.1													
Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80698356/10-25118/003/10		Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen 		Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger ZIEMANN HOLVRIEKA N.V. WERVIKSTRAAT 350 8930 MENEN BELGIE						Purchaser's order number N° de commande client Kundenbestellnummer 20906					
Product - Produit - Erzeugnis COIL, COLD ROLLED, FINISH 2 B COIL, LAMINE A FROID, FINI 2 B COIL,KALTGEWALZT,GEGLUEHT+GEBEIZT,LEICHT NACHGEWALZT										Customer article number N.article client Artikelnummer des Kunden					
Steel designation Désignation de l'acier Stahlbezeichnung EN 10028-7-2016 1.4404 / 1.4401 EN 10088-2-2014 1.4404 / 1.4401 ASTM A 240-2020 TYPE 316L / 316		Finish Présentation Ausfuehrung 2B 2B 2B		Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage Any supplementary requirements Prescriptions supplémentaires - Zusätzliche Anforderungen BURGSPEC01-V06						Product delivery condition Etat de livraison du produit - Lieferzustand Solution Annealing Hypertrempe 1050 °C Lösungsglühen Forced air-water/air forcé-eau Geblase Luft-Wasser					
6216L-6217L															
Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen Thickness Epaisseur - Staerke 6.00 mm						Width Largeur - Breite 1000.00 mm		Length Longueur - Laenge		Number of pieces Nb de pièces - Stueckzahl 2			
Coil n. N.Bobine - Band Nr. 12806447		Heat n. N.Coulée - Schmelz Nr. 128064								Net weight Poids net - netto Gewicht 11320 KG					
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG															
		C		Si	Mn	Ni	Cr	Mo	Ti	N	S	P			
Required -Exigé %mini Anforderung. %maxi		0.030		0.75	2.00	10.00 13.00	16.50 18.00	2.00 2.50		0.100	0.015	0.045			
Cast Analysis Analyse coulée Analyse Schmelze		0.026		0.45	1.33	10.02	16.52	2.02		0.037	0.002	0.035			
		C71		C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungspruefung wurde durchgefuehrt : OK															
MECHANICAL PROPERTIES - PROPRIETES MECANIKES - MECHANISCHE WERTE EN ISO 6892-1 B / A-SA 370															
Room temperature - Température ambiante - Raumtemperatur															
Test temperature (°C) :															
Direction (2) Required Exigé Anforderung mini maxi Obtained Obtenu Ergebnisse		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile Strength Résistance à la traction Zugfestigkeit MPa		Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung	
		Rp0.2%		Rp1%		Rm		50mm		A5		HRBW		Rp0.2%	
		240		270		530 680		40		40		95			
		289		322		586		55		56		83			
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest		Corrosion test Test de corrosion Korrosionstest				Roughness EN ISO 4288		E0.2(T)/R(T) %							
C40 (°C)		EN ISO 3651/2 - A:OK				0.32		49		C52		C53		C54	
C42		D51				Internal cleanliness:		A:		B:		C:		D:	
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte		The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen				Packing list Avis d'expédition LieferscheinNummer 2021047730-25118		Organisation inspection Organisme et/ou service contrôle Ueberwachungsabteilung Quality Department 16/9/2021 The inspector Le responsable Der Werkssachverstaendige							
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs		Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung													



Cert 05

VIRAJ PROFILES LIMITED (Forgings Div)
Survey No-140/1 & G-75 MIDC, Tarapur Ind.Area, Boisar, Dist.Palghar,Maharashtra-401506,INDIA
Email-vflqc@viraj.com,web.www.viraj.com(A01)

(A02) INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

(A06)CUSTOMER : VAN LEEUWEN STAINLESS B.V. PO BOX 19,4153 ZG BEESD, INDUSTRIEWEG 26, 4156 BW BEESD NETHERLANDS	Manufacturer's Symbol (A04) 	(A03)MTR NO.	12/210007599/25 / Rev - 00
		INVOICE NUMBER	75030651
		(Z02) DATE	14.05.2021
		MATERIAL SPEC.	ASTM A182/A182M-20 / ASME SA182/SA182M-20
			EN 10222 - 5 - 2017
		(B02) GRADE	F316/316L/1.4401/1.4404
		DIMENSIONAL SPEC.	EN1092-1:2018

(B01) : STAINLESS STEEL FORGED FLANGES

(B04) DELIVERY CONDITION :

ISO 9001:2015-TUV NORD REG.No-04100011170 EXPIRY DATE: 21.01.2022 & APPROVED ACCORDING TO AD 2000 MERKBLATT W0 & CERTIFIED ACCORDING TO PED (2014/68/EU) BY CERTIFICATION BODY FOR PRESSURE EQUIPMENT OF TUV NORD SYSTEMS (NOTIFIED BODY REGISTRATION NO. -0045)

(A07)ORDER NO: 3534429

(A08)Sales Order No. 30116125/000090

(A09)Article No:161983

(B09-B11)ITEM DESCRIPTION	(B08)QUANTITY(PCS)	(B07)HEAT NUMBER
80/88.9 TYPE 11 B1 PN10/16 S=3.05	52	117055

(C71-C92) CHEMICAL ANALYSIS

ELEMENT	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Ti	%N						
MIN						16.50	10.00	2.00								
MAX	0.030	2.00	1.00	0.030	0.045	18.50	12.00	2.50		0.110						
HEAT	0.019	1.55	0.39	0.026	0.040	16.90	10.08	2.04	0.002	0.078						

MECHANICAL PROPERTIES

Test specification ASTM-A370											
(C01) Sample location : Mid thick-forging		(C03) Test Temp : RT	(C02) Test Direction : Tr	(C10) Sample Shape Round		ASTM E10					
Test Values	(C12) Tensile Strength	(C11) Proof Strength		(C13) Elongation%	Reduction of Area	(C32) Hardness	(C40) Charpy V-Notch 10x10x55mm (Values in Joules)				
		Rp=0.2%	Rp = 1%				(C42) Single values			(C43) AVG	
		N/mm2	N/mm2	N/mm2	Lo=5D	%	BHN	1	2	3	
Req.	515/690	205 MIN	225 MIN	35 MIN	50 MIN						
T	620.97	314.73	362.51	58.80	71.72	153	161	167	158	162	

Other applicable Specifications :: NACE MR 0175 / ISO 15156-2015 & NACE MR 0103-2015 & MATERIAL CONFORMS TO W2/W9/W10

Melting Process : Electrical induction furnace & Argon Oxygen decarburization(IRS) Concast

Heat Treatment	: Solution Annealed at 1080°C and water Quenched
Dimension	: Conform with the specification (100% inspected)
Surfacequality	: Satisfactory
PMI Test	: No objection (100% tested with mobile spectro)
Corrosion Test	: Passed IGC test in accordance with DIN EN ISO 3651-2 & ASTM A262 Practice E
Micro Observation	: No carbide precipitation observed on grain boundaries
Radioactivity Test	: We hereby certify that all the material is free from radioactive contamination
Mercury Contamination	: Free from mercury contamination

we certify that the above material has been inspected and tested and complies with the order/contract and is of Indian origin



(Z03)Inspector's Stamp

VIJAY KUMAR PILLAI (GM, QAD)



Certificate No.	F210506005
Date:	APR 28,2021

Cert 06
檢 驗 證 明 書
MILL'S TEST CERTIFICATE
 EN 10204/3.1



NO.122 INDUSTRIAL ROAD, TOU-LIU CITY
 YUN-LIN 640, TAIWAN
 TEL:+886-5-5571669 FAX:+886-5-5571339
 Website: www.froch.com

ORIGINAL

Customer : VAN LEEUWEN STAINLESS B.V.											Page: 38 of 46									
Invoice No.			Contract No.			L / C No.			規 範											
FEX20210256			3532760			T/T			Specification											
產品名稱 Description			項 目 Item No.	產 品 尺 寸 Size			鋼 種 Type	爐 號 Heat No.	數 量 QTY(M)	重 量 Weight(Kg)	熱處理 (°C) Heat Treatment Water Quenched	表面處理 Finish	水壓試驗 Hydrostatic Test (Mpa)	備註 Remark						
STAINLESS STEEL WELDED PIPE CUT IN THE LENGTH OF 6.0M/11.8M.			38	3" X SCH 10S			TP 316/TP 316L	APS070112	1,938.00	---	1065	PICKLED	9.00							

化 學 成 份 Chemical Composition (%)											機 械 試 驗 Mechanical Test									
項 目 Item No.	碳 C	矽 Si	錳 Mn	磷 P	硫 S	鉻 Cr	鎳 Ni	鉬 Mo	氮 N	其他	抗拉強度 Tensil (N/mm ²)	降伏強度 0.2% Yield (N/mm ²)	伸長率 % Elongation	Direction	Width of specimen	Gauge Length	硬度試驗 Hardness HRB	壓扁試驗 Flattening Test	彎曲試驗 Bend Test	擴口試驗 Flaring Test
Min.						16.00	10.00	2.00			515.00	205.00	35.00	L.T	mm	mm				
Max.	0.035	1.000	2.00	0.045	0.030	18.00	14.00	3.00									99.50	No Crack	No Crack	No Crack
38	0.018	0.500	1.12	0.027	0.001	16.90	10.10	2.02	---	---	669.00	335.00	52.00	Longitudinal	25	50.00	88.00	GOOD	---	GOOD

NOTES: 1.The material described herein is certified for no radiation contamination by original Material Manufacturer. 2.The tolerance of chemical composition is according to ASTM A480 3.Heat treatment:Solution annealed and quenched in water. 4.1Ksi = 1000Psi, 1Mpa = 1 N/mm ² = 0.145038 Ksi. 5.Visual Inspection(Surface) and Dimension Check: Acceptable 6.We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.	1. DIMENSIONAL AND VISUAL EXAMINATION NO OBJECTION. 2. INTERGRANULAR CORROSION TEST ACCORDING TO A262 PRACTICE E SATISFIED. 3. POSITIVE MATERIAL IDENTIFICATION RESULT IS SATISFIED. 4. HARDNESS TO NACE MR0175-2015/ISO15156-3 AND MR0103-2015 "LA SOCIETE FROCH GARANTIT QUE LES PRODUITS OBJECT DU PRESENT CERTIFICAT, RESPECTENT EN LEUR TOTALITE LES PRESCRIPTIONS DE L'ARTICLE 15 DE L'ARRETE MINISTERIEL DU 24 MARS 1978 MODIFIE. C≤0.25%,P≤0.05%,S≤0.05%,R≤800 N/MM2, E≤0.9XR% A%(LO=5.65VSO) MIN.16% EN LONG. R(A-2)≥10500" EDDY CURRENT TEST - GOOD	APPROVED CERTIFICATES: 1.QMS according ISO 9001(TUV Cert No:01 100 126922) 2.EMS according ISO 14001(LR Cert No:0069466) 3.PED (TUV Cert No: 01 202 TWN/Q-06 0145) Lai Yu Lin QA Manager / Work Inspector.
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VIRAJ PROFILES LIMITED (Forgings Div)
 Survey No-140/1 & G-75 MIDC, Tarapur Ind.Area, Boisar, Dist.Palghar,Maharashtra-401506,INDIA
 Email-vflqc@viraj.com,web.www.viraj.com(A01)

(A02) INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

(A06)CUSTOMER : VAN LEEUWEN STAINLESS B.V. PO BOX 19,4153 ZG BEESD, INDUSTRIEWEG 26, 4156 BW BEESD NETHERLANDS	Manufacturer's Symbol (A04) 	(A03)MTR NO.	12/75028476/26
		(Z02) DATE	06.01.2021
		MATERIAL SPEC.	ASTM A182/A182M-20 / ASME SA182/SA182M-19
			EN 10222 - 5 - 2017
		(B02) GRADE	F316/316L/1.4401/1.4404
		DIMENSIONAL	EN1092-1:2018

(B01) : STAINLESS STEEL FORGED FLANGES (B04) DELIVERY CONDITION :

ISO 9001:2015-TUV NORD REG.No-04100011170 EXPIRY DATE: 21.01.2022 & APPROVED ACCORDING TO AD 2000 MERKBLATT W0 & CERTIFIED ACCORDING TO PED (2014/68/EU) BY CERTIFICATION BODY FOR PRESSURE EQUIPMENT OF TUV NORD SYSTEMS (NOTIFIED BODY REGISTRATION NO. -0045)

(A07)ORDER NO: 3529830	(A08)Sales Order No. 30113480/000300	Article No:188911
(B09-B11)ITEM DESCRIPTION		QUANTITY(PIECES)
200/219.1 TYPE 11 B1 PN10 S=3.76		52
		HEAT NUMBER
		116001

(C71-C92) CHEMICAL ANALYSIS

ELEMENT	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Ti	%N							
MIN						16.50	10.00	2.00									
MAX	0.030	2.00	1.00	0.030	0.045	18.50	12.00	2.50		0.1100							
HEAT	0.021	1.70	0.51	0.026	0.037	16.57	10.08	2.05	0.001	0.0600							

MECHANICAL PROPERTIES

Test specification ASTM-A370

Sample location : Mid thick-forging		Test Temp : RT	Test Direction : Tr	Sample Shape Round		ASTM E10				
Test Values	(C12) Tensile Strength	(C11) Proof Strength		(C13) Elongation%	Reduction of Area	(C32) Hardness	Charpy V-Notch 10x10x55mm (Values in Joules) & (Shear%)			
		Rp=0.2%	Rp = 1%				(C42) Single values		(C43)	
	N/mm2	N/mm2	N/mm2	Lo=5D	%	BHN	1	2	3	AVG
Req.	515/690	205 MIN	225 MIN	35 MIN	50 MIN					
T	568.54	252.84	296.93	56.00	69.13	153	217	203	212	211

Other applicable Specifications :: NACE MR 0175 / ISO 15156-2015 & NACE MR 0103-2015 & MATERIAL CONFORMS TO W2/W9/W10

Melting Process : Electrical induction furnace & Argon Oxygen decarburization(IRS) Concast

Heat Treatment	: Solution Annealed at 1080°C and water Quenched
Dimension	: Conform with the specification (100% inspected)
Surfacequality	: Satisfactory
PMI Test	: No objection (100% tested with mobile spectro)
Corrosion Test	: Passed IGC test in accordance with DIN EN ISO 3651-2 & ASTM A262 Practice E
Micro Observation	: No carbide precipitation observed on grain boundaries
Radioactivity Test	: We here by certify that all the material is free from radioactive contamination
Mercury Contamination	: Free from mercury contamination

We certify that the above material has been inspected and tested and complies with the order/contract and is of Indian origin



(Z03)Inspector's Stamp

Signature



VIJAY KUMAR PILLAI (GM, QAD)

Cert 08
檢 驗 證 明 書
MILL'S TEST CERTIFICATE
EN 10204/3.1



NO.122 INDUSTRIAL ROAD, TOU-LIU CITY
YUN-LIN 640, TAIWAN
TEL:+886-5-5571669 FAX:+886-5-5571339
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ORIGINAL

Certificate No.	F210601031
Date:	MAY 17,2021

Customer :VAN LEEUWEN STAINLESS B.V.											Page: 35 of 37														
Invoice No.			Contract No.			L / C No.			規 範 ASTM A312-2018, ASME SA312-17																
FEX20210500.2			3533967			T/T			Specification																
產品名稱 Description			項 目 Item No.	產 品 尺 寸 Size			鋼 種 Type	爐 號 Heat No.	數 量 QTY(M)	重 量 Weight(Kg)	熱處理 (°C) Heat Treatment Water Quenched	表面處理 Finish	水壓試驗 Hydrostatic Test (Mpa)	備註 Remark											
STAINLESS STEEL WELDED PIPE CUT IN THE LENGTH OF 6.0M.			35	8" X SCH 10S			TP 316/TP 316L	APS070146	60.00	---	1065	PICKLED	4.50												
化 學 成 份 Chemical Composition (%)											機 械 試 驗 Mechanical Test														
項 目 Item No.	碳 C	矽 Si	錳 Mn	磷 P	硫 S	鉻 Cr	鎳 Ni	鉬 Mo	氮 N	其他	抗拉強度 Tensile (N/mm ²)	降伏強度 0.2% Yield (N/mm ²)	伸長率 % Elongation	Direction	Width of specimen	Gauge Length	硬度試驗 Hardness HRB	壓扁試驗 Flattening Test	彎曲試驗 Bend Test	擴口試驗 Flaring Test					
Min.						16.00	10.00	2.00			515.00	205.00	35.00	L.T	mm	mm									
Max.	0.035	1.000	2.00	0.045	0.030	18.00	14.00	3.00									99.50	No Crack	No Crack	No Crack					
35	0.016	0.500	1.13	0.030	0.001	16.60	10.00	2.04	---	---	654.00	302.00	54.00	Longitudinal	38	50.00	89.00	GOOD	---	---					
NOTES: 1.The material described herein is certified for no radiation contamination by original Material Manufacturer. 2.The tolerance of chemical composition is according to ASTM A480 3.Heat treatment:Solution annealed and quenched in water. 4.1Ksi = 1000Psi, 1Mpa = 1 N/mm ² = 0.145038 Ksi. 5.Visual Inspection(Surface) and Dimension Check: Acceptable 6.We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.											1. DIMENSIONAL AND VISUAL EXAMINATION NO OBJECTION. 2. INTERGRANULAR CORROSION TEST ACCORDING TO A262 PRACTICE E SATISFIED. 3. POSITIVE MATERIAL IDENTIFICATION RESULT IS SATISFIED. 4. HARDNESS TO NACE MR0175-2015/ISO15156-3 AND MR0103-2015 "LA SOCIETE FROCH GARANTIT QUE LES PRODUITS OBJET DU PRESENT CERTIFICAT, RESPECTENT EN LEUR TOTALITE LES PRESCRIPTIONS DE L'ARTICLE 15 DE L'ARRETE MINISTERIEL DU 24 MARS 1978 MODIFIE. C≤0.25%,P≤0.05%,S≤0.05%,R≤800 N/MM2, E≤0.9XR% A%(LO=5.65VSO) MIN.16% EN LONG. R(A-2)≥10500" EDDY CURRENT TEST - GOOD											APPROVED CERTIFICATES: 1.QMS according ISO 9001(TUV Cert No:01 100 126922) 2.EMS according ISO 14001(LR Cert No:0069466) 3.PED (TUV Cert No: 01 202 TWN/Q-06 0145) Lai Yu Lin QA Manager / Work Inspector.			



CHANDAN STEEL LIMITED
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)
ISO 9001 : 2015 CERTIFICATE No. 04 100 011022

ADM. OFFICE: 504, SUKH SAGAR, N. S. PATKAR MARG,
MUMBAI 400 007, INDIA
Tel.: 91-22-66290600. Fax.: 91-22-66290633/34
Website : www.chandansteel.net
Email : csj@chandansteel.net
L/c. No. :
L/c. Date:

WORKS: Plot No. 35, G. I. D. C., Umbergaon
Dist Valsad, Gujarat - 396 171, INDIA
Tel.: 91-260-256 2066 / 4367 / 1166. Fax.: 91-260-256 2287
E-mail : exports@chandansteel.net

INSPECTION CERTIFICATE 3.1
ACCORDING TO EN 10204

VAN LEEUWEN STAINLESS Industrieweg 26, PO Box 19, NL - 4153 ZG BEESD NETHERLAND								Test Certificate No. : EXP/21-22/00238 -33 Date of Issue : 27.05.2021 P.O. No. : 3532451 Invoice No. & Date : EXP/21-22/00238 Dtd.27.05.2021					
ITEM DESCRIPTION STAINLESS STEEL FORGED & FULLY MACHINED FLANGES													
SR NO.	Article No.	Heat No.	Pcs	Box No.	Wt.Kgs	Grade	Size Description	Process Route					
23	161975	CH-14124	625	41 & 42	1585	1.4401/1.4404/F316/316L	DN50/60.3 TYPE 11B PN16 S=2.77MM	Electric Induction Melting, A.O.D. Refining Continuous Casting & Hot Forging.					
-	-	-	-	-	-	-	-						
-	-	-	-	-	-	-	-						
-	-	-	-	-	-	-	-						
-	-	-	-	-	-	-	-						
CHEMICAL COMPOSITION (Weight %)													
SR NO.	Article No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	OTHERS
23	161975	0.023	0.47	1.78	0.045	0.004	16.90	2.04	10.09	-	-	0.081	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
MECHANICAL PROPERTIES													
SR NO.	Article No.	HEAT TREATMENT BATCH NO.	Yield Strength (N/mm ²)		Tensile Strength N/mm ² (R _m)	% EL	% RA.	Hardness (H.B.W.)	Charpy (V) Impact Test (2mm) at 20°C (Joules) Sample Size - 10 x 10 x 55 mm				
			0.2% (R _{0.2})	1% (R _{p1.0})					I	II	III	Avg.	
23	161975	F2/021/0024	285	345	598	53	73	148-152	164	165	168	166	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	

Remarks:

- Each heat treatment batch is having about 6000 Kgs of Weight.
- The material is solution annealed at minimum 1050 °C and water quenched.
- Material is free from mercury and radio-active contamination and is found within the limits of the background radiation.
- PMI test 100% found satisfactory.
- Inter-Granular Corrosion Test (ASTM A262 - 17 (Pr.E)):- Satisfactory.
- The material conforms to EN 10222 - 5 - 2017, ASTM A 182 - 19, ASME Section II, Part A-SA 182 - 19 & Dimension conforms to EN 1092-1-18 Specification.
- The material conforms to NACB MR0175/ISO 15156-3:2015 & NACB MR0103-2015.
- Approved according To AD 2000-Merkblatt W0 and certified according to PED 2014/68/EU by Certification Body for Pressure Equipment of TÜV NORD Systems (notified body, reg. no.:0045).
- Material Conforms to PED 2014/68/EU Clause 4.3 of Annex 1.
- Materials complies as per AD 2000 - Merkblatt W 2, W 9, W 10.
- Dimension checked & found satisfactory.
- Location of sample - Direction of test piece - Tangential, Test Temp - Room Temp., Shape of Test Piece (Size) - Round (200mm Length).

We hereby certify that, the material described herein,
and supplied are in compliance with the requirements of the order.



V. Y. Narayanan
V. Y. NARAYANAN
WORKS INSPECTOR



Cert 10


彰源企業股份有限公司
FROCH ENTERPRISE CO., LTD.

檢驗證明書

MILL'S TEST CERTIFICATE

EN 10204/3.1

 NO.122 INDUSTRIAL ROAD, TOU-LIU CITY
 YUN-LIN 640, TAIWAN
 TEL:+886-5-5571669 FAX:+886-5-5571339
 Website: www.froch.com

ORIGINAL

Certificate No.	F210601031
Date:	MAY 17,2021

Customer : VAN LEEUWEN STAINLESS B.V.											Page: 30 of 37									
Invoice No.			Contract No.			L / C No.			規 範											
FEX20210500.2			3533967			T/T			ASTM A312-2018, ASME SA312-17											
產品名稱			項 目	產品尺寸			鋼 種	爐 號	數 量	重 量	熱處理 (°C)	表面處理	水壓試驗	備註						
Description			Item No.	Size			Type	Heat No.	QTY(M)	Weight(Kg)	Heat Treatment Water Quenched	Finish	Hydrostatic Test (Mpa)	Remark						
STAINLESS STEEL WELDED PIPE CUT IN THE LENGTH OF 6.0M.			30	2" X SCH 10S			TP 316/TP 316L	AQE070398	798.00	---	1060	PICKLED	12.00							
化 學 成 份 Chemical Composition (%)											機 械 試 驗 Mechanical Test									
項 目	碳	矽	錳	磷	硫	鉻	鎳	鉬	氮	其他	抗拉強度	降伏強度	伸長率 %	Direction	Width of specimen	Gauge Length	硬度試驗	壓扁試驗	彎曲試驗	擴口試驗
Item No.	C	Si	Mn	P	S	Cr	Ni	Mo	N		Tensil (N/mm ²)	0.2% Yield (N/mm ²)	Elongation				Hardness HRB	Flattening Test	Bend Test	Flaring Test
Min.						16.00	10.00	2.00			515.00	205.00	35.00	L.T	mm	mm				
Max.	0.035	1.000	2.00	0.045	0.030	18.00	14.00	3.00									99.50	No Crack	No Crack	No Crack
30	0.021	0.490	1.16	0.032	0.001	17.00	10.10	2.08	---	---	662.00	334.00	52.00	Longitudinal	25	50.00	89.00	GOOD	---	GOOD
NOTES:															APPROVED CERTIFICATES:					
1.The material described herein is certified for no radiation contamination by original Material Manufacturer.											1. DIMENSIONAL AND VISUAL EXAMINATION NO OBJECTION.				1.QMS according ISO 9001(TUV Cert No:01 100 126922)					
2.The tolerance of chemical composition is according to ASTM A480											2. INTERGRANULAR CORROSION TEST ACCORDING TO A262 PRACTICE E SATISFIED.				2.EMS according ISO 14001(LR Cert No:0069466)					
3.Heat treatment:Solution annealed and quenched in water.											3. POSITIVE MATERIAL IDENTIFICATION RESULT IS SATISFIED.				3.PED (TUV Cert No: 01 202 TWN/Q-06 0145)					
4.1Ksi = 1000Psi, 1Mpa = 1 N/mm ² = 0.145038 Ksi.											4. HARDNESS TO NACE MR0175-2015/ISO15156-3 AND MR0103-2015									
5.Visual Inspection(Surface) and Dimension Check: Acceptable											"LA SOCIETE FROCH GARANTIT QUE LES PRODUITS OBJET DU PRESENT CERTIFICAT, RESPECTENT EN LEUR TOTALITE LES PRESCRIPTIONS DE L'ARTICLE 15 DE L'ARRETE MINISTERIEL DU 24 MARS 1978 MODIFIE. C≤0.25%,P≤0.05%,S≤0.05%,R≤800 N/MM2, E≤0.9XR% A%(LO=5.65VSO) MIN.16% EN LONG. R(A-2)≥10500"									
6.We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.											EDDY CURRENT TEST - GOOD									
															 Lai Yu Lin QA Manager / Work Inspector.					



Cert 11



VIRAJ PROFILES LIMITED (Forgings Div)

Survey No-140/1 & G-75 MIDC, Tarapur Ind.Area, Boisar, Dist.Palghar,Maharashtra-401506,INDIA

Email-vflqc@viraj.com,web.www.viraj.com(A01)

(A02) INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

(A06)CUSTOMER : VAN LEEUWEN STAINLESS B.V. PO BOX 19,4153 ZG BEESD, INDUSTRIEWEG 26, 4156 BW BEESD NETHERLANDS	Manufacturer's Symbol (A04) 	(A03)MTR NO.	12/210000605
		INVOICE NUMBER	75029600
		(Z02) DATE	13.03.2021
		MATERIAL SPEC.	ASTM A182/A182M-20/ASME SA182/SA182M-19
			EN 10222 - 5 - 2017
		(B02) GRADE	F316/316L/1.4401/1.4404
		DIMENSIONAL SPEC.	EN1092-1:2018

(B01) : STAINLESS STEEL FORGED FLANGES

(B04) DELIVERY CONDITION :

ISO 9001:2015-TUV NORD REG.No-04100011170 EXPIRY DATE: 21.01.2022 & APPROVED ACCORDING TO AD 2000 MERKBLATT W0 & CERTIFIED ACCORDING TO PED (2014/68/EU) BY CERTIFICATION BODY FOR PRESSURE EQUIPMENT OF TUV NORD SYSTEMS (NOTIFIED BODY REGISTRATION NO. -0045)

(A07)ORDER NO: 3532293

(A08)Sales Order No. 30114686/000210

Article No:161987

(B09-B11)ITEM DESCRIPTION	QUANTITY(PIECES)	HEAT NUMBER
100/114.3 TYPE 11 B1 PN10/16 S=3.05	449	116412

(C71-C92) CHEMICAL ANALYSIS

ELEMENT	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Ti	%N							
MIN						16.50	10.00	2.00									
MAX	0.030	2.00	1.00	0.030	0.045	18.50	12.00	2.50		0.1100							
HEAT	0.023	1.78	0.38	0.020	0.039	16.88	10.05	2.03	0.002	0.0630							

MECHANICAL PROPERTIES

Test specification ASTM-A370

Sample location : Mid thick-forging		Test Temp : RT	Test Direction : Tr	Sample Shape Round		ASTM E10				
Test Values	(C12) Tensile Strength	(C11) Proof Strength		(C13) Elongation%	Reduction of Area	(C32) Hardness	Charpy V-Notch 10x10x55mm (Values in Joules) & (Shear%)			
		Rp=0.2%	Rp = 1%				(C42) Single values		(C43)	
	N/mm2	N/mm2	N/mm2	Lo=5D	%	BHN	1	2	3	AVG
Req.	515/690	205 MIN	225 MIN	35 MIN	50 MIN					
T	580.63	295.31	351.80	59.80	70.97	153	166	187	190	181

Other applicable Specifications :: NACE MR 0175 / ISO 15156-2015 & NACE MR 0103-2015 & MATERIAL CONFORMS TO W2/W9/W10

Melting Process : Electrical induction furnace & Argon Oxygen decarburization(IRS) Concast

Heat Treatment	: Solution Annealed at 1080°C and water Quenched
Dimension	: Conform with the specification (100% inspected)
Surfacequality	: Satisfactory
PMI Test	: No objection (100% tested with mobile spectro)
Corrosion Test	: Passed IGC test in accordance with DIN EN ISO 3651-2 & ASTM A262 Practice E
Micro Observation	: No carbide precipitation observed on grain boundaries
Radioactivity Test	: We here by certify that all the material is free from radioactive contamination
Mercury Contamination	: Free from mercury contamination

We certify that the above material has been inspected and tested and complies with the order/contract and is of Indian origin



VIJAY KUMAR PILLAI (GM, QAD)

(Z03)Inspector's Stamp



VIRAJ PROFILES LIMITED (Forgings Div)
Survey No-140/1 & G-75 MIDC, Tarapur Ind.Area, Boisar, Dist.Palghar,Maharashtra-401506,INDIA
Email-vflqc@viraj.com,web.www.viraj.com(A01)

(A02) INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

(A06)CUSTOMER : VAN LEEUWEN STAINLESS B.V. PO BOX 19,4153 ZG BEESD, INDUSTRIEWEG 26, 4156 BW BEESD NETHERLANDS	Manufacturer's Symbol (A04) 	(A03)MTR NO.	12/210000597
		INVOICE NUMBER	75029600
		(Z02) DATE	13.03.2021
		MATERIAL SPEC.	ASTM A182/A182M-20/ASME SA182/SA182M-19
			EN 10222 - 5 - 2017
		(B02) GRADE	F316/316L/1.4401/1.4404
		DIMENSIONAL SPEC.	EN1092-1:2018

(B01) : STAINLESS STEEL FORGED FLANGES

(B04) DELIVERY CONDITION :

ISO 9001:2015-TUV NORD REG.No-04100011170 EXPIRY DATE: 21.01.2022 & APPROVED ACCORDING TO AD 2000 MERKBLATT W0 & CERTIFIED ACCORDING TO PED (2014/68/EU) BY CERTIFICATION BODY FOR PRESSURE EQUIPMENT OF TUV NORD SYSTEMS (NOTIFIED BODY REGISTRATION NO. -0045)

(A07)ORDER NO: 3532293

(A08)Sales Order No. 30114686/000210

Article No:161987

(B09-B11)ITEM DESCRIPTION	QUANTITY(PIECES)	HEAT NUMBER
100/114.3 TYPE 11 B1 PN10/16 S=3.05	128	116315

(C71-C92) CHEMICAL ANALYSIS

ELEMENT	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	%Ti	%N							
MIN						16.50	10.00	2.00									
MAX	0.030	2.00	1.00	0.030	0.045	18.50	12.00	2.50		0.1100							
HEAT	0.028	1.51	0.39	0.024	0.037	16.52	10.03	2.01	0.003	0.0700							

MECHANICAL PROPERTIES

Test specification ASTM-A370

Sample location : Mid thick-forging		Test Temp : RT	Test Direction : Tr	Sample Shape Round		ASTM E10				
Test Values	(C12) Tensile Strength	(C11) Proof Strength		(C13) Elongation%	Reduction of Area	(C32) Hardness	Charpy V-Notch 10x10x55mm (Values in Joules) & (Shear%)			
		Rp=0.2%	Rp = 1%				(C42) Single values		(C43)	
	N/mm2	N/mm2	N/mm2	Lo=5D	%	BHN	1	2	3	AVG
Req.	515/690	205 MIN	225 MIN	35 MIN	50 MIN					
T	545.09	269.45	308.54	61.20	70.40	155	191	206	200	199

Other applicable Specifications :: NACE MR 0175 / ISO 15156-2015 & NACE MR 0103-2015 & MATERIAL CONFORMS TO W2/W9/W10

Melting Process : Electrical induction furnace & Argon Oxygen decarburization(IRS) Concast

Heat Treatment	: Solution Annealed at 1080°C and water Quenched
Dimension	: Conform with the specification (100% inspected)
Surfacequality	: Satisfactory
PMI Test	: No objection (100% tested with mobile spectro)
Corrosion Test	: Passed IGC test in accordance with DIN EN ISO 3651-2 & ASTM A262 Practice E
Micro Observation	: No carbide precipitation observed on grain boundaries
Radioactivity Test	: We here by certify that all the material is free from radioactive contamination
Mercury Contamination	: Free from mercury contamination

We certify that the above material has been inspected and tested and complies with the order/contract and is of Indian origin




(Z03)Inspector's Stamp

VIJAY KUMAR PILLAI (GM, QAD)

Certificate No.	F210707003
Date:	JUN 29,2021

Cert 12

檢 驗 證 明 書

MILL'S TEST CERTIFICATE

EN 10204/3.1



彰源企業股份有限公司
FROCH ENTERPRISE CO., LTD.

NO.122 INDUSTRIAL ROAD, TOU-LIU CITY
YUN-LIN 640, TAIWAN
TEL:+886-5-5571669 FAX:+886-5-5571339
Website: www.froch.com

ORIGINAL

Customer :VAN LEEUWEN STAINLESS B.V.										Page: 23 of 27									
Invoice No.			Contract No.			L / C No.			規 範			ASTM A312-2018, ASME SA312-17							
FEX20210720.1			3535325			T/T			Specification										
產品名稱 Description			項 目 Item No.	產品尺寸 Size			銅 種 Type	爐 號 Heat No.		數 量 QTY(M)	重 量 Weight(Kg)	熱處理 (°C) Heat Treatment Water Quenched	表面處理 Finish	水壓試驗 Hydrostatic Test (Mpa)	備註 Remark				
STAINLESS STEEL WELDED PIPE CUT IN THE LENGTH OF 6.0M.			23	4" X SCH 10S			TP 316/TP 316L	APW070526		444.00	---	1065	PICKLED	7.00					

化 學 成 份 Chemical Composition (%)											機 械 試 驗 Mechanical Test									
項 目 Item No.	碳 C	矽 Si	錳 Mn	磷 P	硫 S	鉻 Cr	鎳 Ni	鉬 Mo	氮 N	其他	抗拉強度 Tensil (N/mm ²)	降伏強度 0.2% Yield (N/mm ²)	伸長率 % Elongation	Direction	Width of specimen	Gauge Length	硬度試驗 Hardness HRB	壓扁試驗 Flattening Test	彎曲試驗 Bend Test	擴口試驗 Flaring Test
Min.						16.00	10.00	2.00			515.00	205.00	35.00	L.T	mm	mm				
Max.	0.035	1.000	2.00	0.045	0.030	18.00	14.00	3.00									99.50	No Crack	No Crack	No Crack
23	0.016	0.480	1.18	0.029	0.001	16.90	10.10	2.07	---	---	633.00	328.00	53.00	Longitudinal	25	50.00	88.00	GOOD	---	GOOD

NOTES:

- The material described herein is certified for no radiation contamination by original Material Manufacturer.
- The tolerance of chemical composition is according to ASTM A480
- Heat treatment: Solution annealed and quenched in water.
- 1Ksi = 1000Psi, 1Mpa = 1 N/mm² = 0.145038 Ksi.
- Visual Inspection(Surface) and Dimension Check: Acceptable
- We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.

- DIMENSIONAL AND VISUAL EXAMINATION NO OBJECTION.
- INTERGRANULAR CORROSION TEST ACCORDING TO A262 PRACTICE E SATISFIED.
- POSITIVE MATERIAL IDENTIFICATION RESULT IS SATISFIED.
- HARDNESS TO NACE MR0175-2015/ISO15156-3 AND MR0103-2015

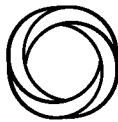
"LA SOCIETE FROCH GARANTIT QUE LES PRODUITS OBJECT DU PRESENT CERTIFICAT, RESPECTENT EN LEUR TOTALITE LES PRESCRIPTIONS DE L'ARTICLE 15 DE L'ARRETE MINISTERIEL DU 24 MARS 1978 MODIFIE. C≤0.25%, P≤0.05%, S≤0.05%, R≤800 N/MM2, E≤0.9XR% A%(LO=5.65VSO) MIN.16% EN LONG. R(A-2)≥10500"

EDDY CURRENT TEST - GOOD

APPROVED CERTIFICATES:

- QMS according ISO 9001(TUV Cert No:01 100 126922)
- EMS according ISO 14001(LR Cert No:0069466)
- PED (TUV Cert No: 01 202 TWN/Q-06 0145)

Lai Yu Lin
QA Manager / Work Inspector.



Business Unit / QCM

BA Quarto Plate, Quarto Plate Europe

Date Datum Date

05-May-2022

Load, Ladung, Charge No

231766

Acknowledged ID, Bestätigung, Commande ID

300632223

Your ref, Ihre Ref., Votre ref
4500716857.

Buyer, Besteller, Acheteur
MCB NEDERLAND B.V.
J.F. KENNEDYLAAN 59
5555 XC, VALKENSWAARD, Noord-Brabant
HOLLAND

Consignee, Empfänger, Lieu de livraison
MCB NEDERLAND BV

Mark of Manufacturer
Zeichen des Lieferwerkes
Signe de producteur



Process
Erschmelzungsart
Mode de fusion

E+AOD

Inspector's stamp
Zeichen des Sachverständigen
Poinçon de l'expert



Requirements, Anforderungen, Exigences

AD 2000 W2, W10 & EN10028-7, PED 2014/68/EU
EN 10088-2:14
EN 10088-4:2009
ASME SA-240M Code Sect. II, Part A:2021
ASTM A240M / NACE MR0175/ ISO 15156-3:20/2015

Grade, Werkstoff, Nuance

1.4401
1.4404

316
316L

Product, Erzeugnisform, Produit

Stainless steel hot rolled, Plate, 1D/No.1, Cut edge

Line Reihe Ligne	Item Position Poste	Heat-Lot No Schmelze-Lot Nr Coulée n° - Lot No	Size Abmessungen Dimensions	Pieces Stückzahl Nombre	Quantity/unit, Menge/Einheit, Quantité/Unité
1	2	521285-430329:0	25,0 X 1500,0 X 6000,0 mm	1	

Plate No, Blech Nr, Tôle No
1 2688 1901

Chemical composition – Chemische Zusammensetzung – Composition chimique %
Heat – Schmelze – coulée No

	C	Si	Mn	P	S	Cr	Ni	Mo	N					
Min						16.5	10.0	2.00						
Max	0.030	0.75	2.00	0.045	0.015	18.0	13.0	2.50	0.10					
521285	0.016	0.31	0.97	0.032	0.001	16.9	10.0	2.02	0.06					

Distribution	Direct. T = Transverse L = Longitudinal	Top/Bot F = Front B = Back	Form P = Flat C = Round	Location 1 = Center 2 = Close to Surface 3 = Standard 4 = At 1/4 of thickness
Certificate via e-Services.				

Test results - Prüfergebnisse - Résultats des essais (1N/mm² = 1MPa)

Mechanical properties

Tensile testing/Hardness Rockwell B

Plate-no	Direct.	Top/Bot	Location	Form	Temp. °C	Rp 0,2 MPa	Rp 1,0 MPa	Rm MPa	A5 %	A50 %	HRB
Min						220	260	520	45	40	HRB
Max								670			95
1901	T	F	2	C	20	257	294	590	55	57	77

Charpy impact test (V-notch) EN ISO 148-1

Plate-no	Direct.	Top/Bot	Location	Form	Temp. °C	Value1 J	Value2 J	Value3 J	Average J
Min									60
1901	T	F	2	P	20	408	395	399	401

Corrosion

EN ISO 3651-2 Method A

Plate-no	Result
1901F	OK

Other Information

Country of melt: Sweden
Manufactured in Sweden.
Solution annealed at 1050°C and Quenched in water.
Dimensional control, visual inspection and grade check (PMI): Approved

The results comply with the Requirements of the order - Die gestellten Anforderungen sind erfüllt - Les résultats sont conformes aux exigences de la commande

Outokumpu Stainless AB
BA Quarto Plate, Quarto Plate Europe
SE- 693 81 DEGERFORS
SWEDEN
Regoffice: SWEDEN

V.A.T no: SE556001874801

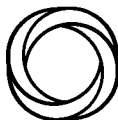
Regno: 556001-8748

Computer generated original
Quality Inspector

Herbert Wasserfaller

Herbert Wasserfaller





EN 10204 - 3.1

22050462-EN-0

Business Unit / QCM

BA Quarto Plate, Quarto Plate Europe

Date Datum Date

05-May-2022

Load, Ladung, Charge No

231766

Acknowledged ID, Bestätigung, Commande ID

300632223

Approved acc. to AD2000-Merkblatt W0 and certified acc. to
Pressure Equipment Directive (2014/68/EU) by
TUEV NORD, notified body, reg.no. 0045.
Construction Products Regulation (305/2011/EU)
The Declaration of Performance (DoP), see www.outokumpu.com.
Material conforms to NACE MR0175/ISO 15156 in supplied condition.

Tolerance	Standard	Class
Flatness tolerance	EN 18286/A480/M/EN 10029	ISO 18286 N/A480/M/EN 10029 N
Length	EN 18286/A480/M/EN 10029	ISO 18286 A/A480/M/EN 10029
Thickness	EN 18286/A480/M/EN 10029	ISO 18286/A480/M/EN 10029 B
Width	EN 18286/A480/M/EN 10029	ISO 18286 A/A480/M/EN 10029

The results comply with the requirements of the order - Die gestellten Anforderungen sind erfüllt - Les résultats sont conformes aux exigences de la commande

Outokumpu Stainless AB
BA Quarto Plate, Quarto Plate Europe
SE- 693 81 DEGERFORS
SWEDEN
Regoffice: SWEDEN

V.A.T no: SE556001874801

, Regno: 556001-8748

Computer generated original
Quality Inspector

Herbert Wasserfaller

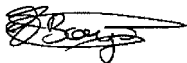
Herbert Wasserfaller



MARCEGAGLIA SPECIALTIES				Type/Typ Abnahmeprüfzeugnis 3.1 AD-2000 EN10204				Number/Nummer 10722553810				Ausgegeben am 10/09/2022									
				- QMS approved acc AD-2000 W0 with Cert 01 202 I/Q-08 5131 by TÜV Rheinland (0035), cert. PED 2014/68/UE Annex I §4.3 by TÜV Rheinland (0035) 4-10-1494 tm 1495 - Material acc. AD2000 W2 - W10 in ref to EN10028-7 - Material conforming to NACE MR0175/MR0103 - ISO15156-1/ISO15156-3																	
Customer/Kunde HW-INOX GMBH KAISERSWERTHER STR. 113 40880 RATINGEN DE				Cert 14				Consignee/Anlieferadresse HW-INOX GmbH Breitscheider Weg 148 40885 RATINGEN DE				Delivery/Lieferung nr 8361837626		Quality Control/Qualitätsicherung Q.M.D./Bearb. A.Venturini		Pages/Seite 5/5					
Material 51801149				Norm/Norma EN10028-7,EN10088-2,EN10088-4, ASTM A240, ASME SA240, ASTM A480, ASME SA480								Order Nr./Auftrag Nr 1191530808/90		Client Order/Kundenauftrag 7708							
Description/Beschreibung LXC 10,00 X 1500 X 6000 316L/4404				Quality/Qualità X2CrNiMo17-12-2, WNR1.4404, 316L / AISI316, X5CrNiMo17-12-2, WNR1.4401, 316										Client Date/Kundendatum 1/09/2022							
Item	Batch/Bund Nr	Heat/Schmelze	Quantity/Anzahl	Dimensional tolerances/Maßtoleranzen				Steel Processing/Steel Processing				Mark Tester/Mark Tester									
1	22TV020366	Y220110A24-1	2154 KG	EN9444-2				Elektro-Ofen-VOD/AOD, Stranggussanlage , Lieferzustand loesungsgegl + abgeschreckt 1050 °C Geblaese Luft				- Ueberwachungsabteilung: CQ3									
2	22TV020367	Y220110A24-1	2160 KG																		
3	22TV020368	Y220110A24-1	2156 KG									- ASME norms acc. Sec. II Part A Ed. 2021				Terms of Delivery/Lieferbedingungen					
Batch/Bund Nr Chemische Werte Stem C (%) Si (%) Mn (%) P (%) S (%) Cr (%) Ni (%) Mo (%) N (%)																					
22TV020366		22A9002533		.021		.464		1.219		.0112		.0078		16.922		10.378		2.037		.0371	
22TV020367		22A9002533		.021		.464		1.219		.0112		.0078		16.922		10.378		2.037		.0371	
22TV020368		22A9002533		.021		.464		1.219		.0112		.0078		16.922		10.378		2.037		.0371	
Batch/Bund Nr Lage der Testversion Richtung des Tests Stem Rm [N/mm²] Rp 0.2 [N/mm²] RP 1 [N/mm²] A5D (%) A50 (%) HRB B HRB T																					
22TV020366		B		T		22A9002533		588		309		358		52.5		55.9		82		82	
22TV020367		B		T		22A9002533		588		309		358		52.5		55.9		82		82	
22TV020368		B		T		22A9002533		588		309		358		52.5		55.9		82		82	
Test Position/Posizione Prova		Test Direction/Direzione Prova		Remarks about tensile test:								Other controls:									
B=Coil End C=Coil middle T=Coil head		T=Transverse Direction L=Longitudinal Direction		- Confirmation of adequate degree of reliability for the uniformity over the strip length with certificate issued by TÜV Rheinland Group dt. June 19, 2019								- Verwechslungsprüfung, oberflächen und masskontrolle: ohne beanstandung - Corrosion Test EN ISO3651-2 Method A und ASTM A262 pract.E - OK									
Remarks/Bemerkungen:												0474 13 MARCEGAGLIA SPECIALTIES v. Brescelan, 16 46040 - Gazzole D. L. Mantova - Italy EN 10088-4:2009									
- Wir bestaetigen, dass die Lieferung den Vereinbarungen der Bestellannahme entspricht.																					
- Document validated acc. EN10204 par. 5																					
- Norms are intended in the valid edition at the time of the order																					
- Durability: NPD																					
- Regulated Substances: NPD																					
- Intended Uses: Building Constructions or Civil Engineering.																					
- DoP available at http://www.marcegaglia.com/brochure/e/quality/dop.html																					
- Ausfuehrung 1D																					

CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004		Numéro de document Rev 00 Document number Bescheinigungsnummer 2021-103526		Page 001 Sheet / Seite 013	4-20-727
Client - Purchaser - Besteller		HW-INOX GMBH			
Référence client - Purchase order - Kaufauftrag		6777 Premium +/5-32039			
Projet - Project - Projekt					
Industeel Belgium		ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018			
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018			
Produit - Product - Erzeugnis		Standardized product			
Commande / Poste - Internal order - Werksbestellung		200008407 / 000050			
Bordereau de livraison - Delivery note - Lieferungsdocument		80379797 80379744			

#010 - PRODUITS LIVRES - DELIVERED PRODUCTS - DELIEFERTEN GEGENSTÄNDE							
Nuance - Grade - Werkstoff X5CrNiMo17-12-2 (1.4401) X2CrNiMo17-12-2 (1.4404) UNS S31600 (316) UNS S31603 (316L) UNS S31600 (316) UNS S31603 (316L) X5CrNiMo17-12-2 (1.4401) X2CrNiMo17-12-2 (1.4404) X5CrNiMo17-12-2 (1.4401) X2CrNiMo17-12-2 (1.4404)				Selon norme - According to - Entsprechend EN 10088-2:2014 EN 10088-2:2014 ASTM A 240/M ED.2020a ASTM A 240/M ED.2020a ASME IIA ED.2019 SA 240/M ASME IIA ED.2019 SA 240/M EN 10028-7:2016+AD2000W2+ADW10 EN 10028-7:2016+AD2000W2+ADW10 EN 10088-4:2009 EN 10088-4:2009			
Epaisseur - Thickness - Dicke		20.00 mm		Largeur - Width - Breite		2,000 mm	
Longueur - Length - Länge		6,000 mm					
Spécification - Specification - Spezifikation							
 https://eservices.industeel.be							
Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand Hypertrempe à l'air (1050 °C - 1 min/mm) - Solution annealed and air quenched - Luft vergütet							
Procédé d'élaboration - Melting process - Erschmelzungsart Electric-arc furnace - VOD - Finish n°1 - 1D - HRAP							
Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.	Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.
01	363419001	72951	363419.4001 / 363419.5001	01	363419002	72951	363419.4001 / 363419.5001
01	363419004	72951	363419.4001 / 363419.5001	01	363423002	72951	363419.4001 / 363419.5001
01	363423004	72951	363419.4001 / 363419.5001				
Total - Total - Gesamtzahl 005							
This supply complies with the main requirements of PED 2014/68/EU relating to the basis materials regardless of the specific terms of service. Cette fourniture est conforme aux exigences de la PED 2014/68/UE relatives aux matériaux de base indépendamment des conditions de services spécifiques. Radioactivity in conformity with 2013/59/EUROATOM Hot rolled, annealed and pickled According to ASTM A480/A480M and ASME SA480/SA480M Norsok M-650/M-630 MDS S01 Food contract:(CE) N°1935/2004 - FR Arrêté du 13/01/1976 - IT Decreto 11/11/2013 N°1148 06 20060925 EN 10088-4:2009 Produit laminé à chaud en acier de construction Usages prévus: Construction de bâtiments et Génie civil X5CrNiMo17-12-2 (1.4401) X2CrNiMo17-12-2 (1.4404)							

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande. We hereby certify that the above mentioned products are complying with the order requirements. Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.		ALEXANDRA BAYET 11/02/2021 Gestionnaire Commande Mill inspector Werksbeauftragte 
--	--	---

Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039

Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Standardized product

Commande / Poste - Internal order - Werksbestellung

200008407 / 000050

Bordereau de livraison - Delivery note - Lieferungsdocument

80379797 80379744

#020 - ANALYSE CHIMIQUE DE COULEE - HEAT CHEMICAL COMPOSITION - SCHMELZE CHEMISCHE ZUSAMMENSETZUNG

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo
	%	%	%	%	%	%	%	%	%
Min.							10.000	16.500	2.000
72951	0.024	1.816	0.0375	0.0008	0.301	0.370	10.000	16.693	2.001
Max.	0.030	2.000	0.0450	0.0150	0.750	0.750	13.000	18.000	2.500
	Nb	Ti	N	Co	Al	B			
	%	%	%	%	%	%			
Min.									
72951	0.003	0.001	0.0360	0.124	0.007	0.0016			
Max.	0.100	0.100	0.1000						

#041 - PMI - POSITIVE MATERIAL IDENTIFICATION - VERWECHSLUNGSPRÜFUNG

Non confusion de matière - Positive material identification -

PMI Conform

Résultat du contrôle - Examination result - Prüfergebnis

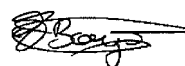
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschritten

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH
Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039
Projet - Project - Projekt

Industeel Belgium
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018
ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis Standardized product
Commande / Poste - Internal order - Werksbestellung 200008407 / 000050
Bordereau de livraison - Delivery note - Lieferungsdocument 80379797 80379744

#072 ESSAIS MECANQUES - MECHANICAL TESTS - MECHANISCHE PRÜFUNGEN

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

Brinell HB							Brinell HB - Brinell HB											
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	Brinell	Brinell	Brinell	Brinell							
							Min											
							Max	217	217	217	217							
								171	171	177	173							
363419.5001	000	T3/4	PSS	20	°C													

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0103 / ISO 17945							NACE MR0103 / ISO 17945 - NACE MR0103 / ISO 17945											
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac												
363419.5001	000	T3/4	PSS	20	°C													

Test result HRC < 22

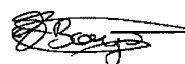
DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0175 / ISO 15156-3							NACE MR0175 / ISO 15156-3 - NACE MR0175 / ISO 15156-3											
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac												
363419.5001	000	T3/4	PSS	20	°C													

Test result HRC < 22

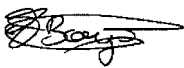
Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004				Numéro de document Rev 00 Document number Bescheinigungsnummer 2021-103526		Page 004 Sheet / Seite 013		Cert 15 ArcelorMittal			
Client - Purchaser - Besteller				HW-INOX GMBH							
Référence client - Purchase order - Kaufauftrag				6777 Premium +/5-32039							
Projet - Project - Projekt											
Industeel Belgium				ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018							
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont				ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018							
Produit - Product - Erzeugnis				Standardized product							
Commande / Poste - Internal order - Werksbestellung				200008407 / 000050							
Bordereau de livraison - Delivery note - Lieferungsdokument				80379797 80379744							

TRACTION A L' AMBIANTE - ROOM TEMPERATURE TENSILE TEST - ZUGVERSUCH BEI RT																	
Traction Tensile test - Zugversuch								Rp 0,2%	Rp1%	Rm	A Lo=50mm	A Lo=5,65V So					
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	MPa	MPa	MPa	%	%					
							Min	220	260	520	40	45					
							Max			670							
363419.5001	000	T3/4	PST	20	°C			302	332	594	58	53					
RESILIENCE - TOUGHNESS - KERBSCHLAGZÄHIGKEIT																	
KCV EN 10X10mm KCV EN 10X10mm - KCV EN 10X10mm								Energy Ind	Energy Ind	Energy Ind	Energy Ave						
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	J	J	J	J						
							Min	42	42	42	60						
							Max										
363419.5001	000	T3/4	PST	20	°C			256	245	237	246						
Loc		3/4	Trois-Quart - 3/4 Width - 3/4 Breite														
Loc		T	Tête - Top - Kopf														
Epr. Epaisseur		P	Peau - Rolled Surface - Walzfläche														
Epr. Face		S	Supérieure - Upper face - obere														
Epr. Sens		S	Standard - Standard - Standard														
Epr. Sens		T	Travers - Transverse - Quer														
Etat		000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand														
Epr.Ep./Face/Sens		PSS	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Standard - Standard - Standard														
Epr.Ep./Face/Sens		PST	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Travers - Transverse - Quer														

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande. We hereby certify that the above mentioned products are complying with the order requirements. Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.		ALEXANDRA BAYET 11/02/2021 Gestionnaire Commande Mill inspector Werksbeauftragte 
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Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039

Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Standardized product

Commande / Poste - Internal order - Werksbestellung

200008407 / 000050

Bordereau de livraison - Delivery note - Lieferungsdocument

80379797 80379744

#082 ESSAIS TECHNOLOGIQUES - TECHNOLOGICAL TESTS - TECHNOLOGISCHE PRÜFUNGEN

FERRITE SUR COUPON - FERRITE ON SAMPLE - FERRIT AUF COUPON

Ferrite De Long							% Ferrite												
Ferrite De Long - Ferrite De Long																			
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	%											
							Min												
							Max												
363419.4001	000	T3/4	SSS	20	°C			2.100											

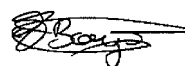
Test result Satisfactory as per specification

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH
Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039
Projet - Project - Projekt

Industeel Belgium
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont
ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018
ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis Standardized product
Commande / Poste - Internal order - Werksbestellung 200008407 / 000050
Bordereau de livraison - Delivery note - Lieferungsdocument 80379797 80379744

FERRITE SUR COUPON - FERRITE ON SAMPLE - FERRIT AUF COUPON

ASTM E562

ASTM E562 - ASTM E562

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
363419.4001	000	T3/4	SSS	20	°C														

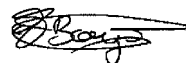
Standard ASTM E562/E1245
Number of Fields 5
Etchant N°96 (ASTM E407)
Magnification 500X
Test result Satisfactory as per specification

N°	Location - Localisation - Lage	Picture - Image - Bild
01	Top Surface	AN_0200008407_000050_363419004_001(1)
02	1/4 thickness	AN_0200008407_000050_363419004_001(2)
03	1/2 thickness	AN_0200008407_000050_363419004_001(3)
04	3/4 thickness	AN_0200008407_000050_363419004_001(4)
05	Bottom Surface	AN_0200008407_000050_363419004_001(5)

Results - Résultats - Ergebnisse				
		Ferrite (%)		
N°	Location Localisation - Stelle	Measurements Mesures - Messungen	Requirement Requis - Bedarf	
			Min	Max
01	Up	1.050	0.000	0.000
02	1/4 thickness up	1.290	0.000	0.000
03	1/2 thickness	1.090	0.000	0.000
04	1/4 thickness bottom	1.310	0.000	0.000
05	Bottom	1.080	0.000	0.000
Average- Moyenne - Mittel		1.164	0.000	0.000
Std Deviation		0.125		
95% CI		0.155		
% RA		13.316		

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039

Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Standardized product

Commande / Poste - Internal order - Werksbestellung

200008407 / 000050

Bordereau de livraison - Delivery note - Lieferungsdokument

80379797 80379744

CORROSION - CORROSION - KORROSION

Sensibilisé - Sensitized - Sensibilisiert

EN ISO 3651-2 A

Test description - Prüfbeschreibung

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
363419.5001	001	T3/4	SSS	20	°C														

Test result Satisfactory as per specification

CORROSION - CORROSION - KORROSION

Sensibilisé - Sensitized - Sensibilisiert

ASTM A262 E

ASTM A262 E - ASTM A262 E

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac													
363419.5001	002	T3/4	SSS	20	°C														

Test result Satisfactory as per specification

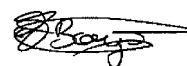
Loc	3/4	Trois-Quart - 3/4 Width - 3/4 Breite
Loc	T	Tête - Top - Kopf
Epr. Epaisseur	S	Standard - Standard - Standard
Epr. Face	S	Supérieure - Upper face - obere
Epr. Sens	S	Standard - Standard - Standard
Etat	000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand
Etat	001	SENSI - Sensitization (From 350 °C at 220 °C/h to 700 °C (-10/+10) (min: 30 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Etat	002	SENSI - Sensitization (From 350 °C at 220 °C/h to 675 °C (-25/+0) (min: 60 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Epr.Ep./Face/Sens	SSS	Standard - Standard - Standard / Supérieure - Upper face - obere / Standard - Standard - Standard

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039

Projet - Project - Projekt

Industeel Belgium

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Standardized product

Commande / Poste - Internal order - Werksbestellung

200008407 / 000050

Bordereau de livraison - Delivery note - Lieferungsdocument

80379797 80379744

#101 - DIMENSIONNEL - DIMENSIONAL CHECK - MASSKONTROLLE

Cahier des charges Longueur - Specification Length -

ISO 18286 CLASSE A

Cahier des charges Largeur - Specification Width -

ISO 18286 CLASSE A

Cahier des charges Epaisseur - Specification Thickness -

ISO 18286

Résultat du contrôle - Examination result - Prüfergebnis

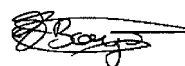
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH
Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039
Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis Standardized product
Commande / Poste - Internal order - Werksbestellung 200008407 / 000050
Bordereau de livraison - Delivery note - Lieferungsdocument 80379797 80379744

#111 - VISUEL-ETAT DE SURFACE - VISUAL EXAMINATION-SURFACE CONDITION - SICHTPRÜFUNG-OBERFLÄCHENZUSTAND

Norme applicable 1 - Applicable standard 1 - EN 10163 CL.B S-CL.3

Résultat du contrôle - Examination result - Prüfergebnis

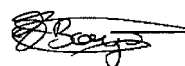
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

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ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH
Référence client - Purchase order - Kaufauftrag 6777 Premium +/5-32039
Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis Standardized product
Commande / Poste - Internal order - Werksbestellung 200008407 / 000050
Bordereau de livraison - Delivery note - Lieferungsdocument 80379797 80379744

#171 - PLANEITE - FLATNESS - EBENHEIT

Cahier des Charges Planéité - Flatness standard - Ebenheit norm ISO 18286 CLASSE N - TYPE A

Résultat du contrôle - Examination result - Prüfergebnis

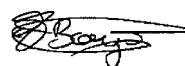
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

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Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungsvorschriften entsprechen.

ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Inspection Number :

Client - Purchaser - Besteller

HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag

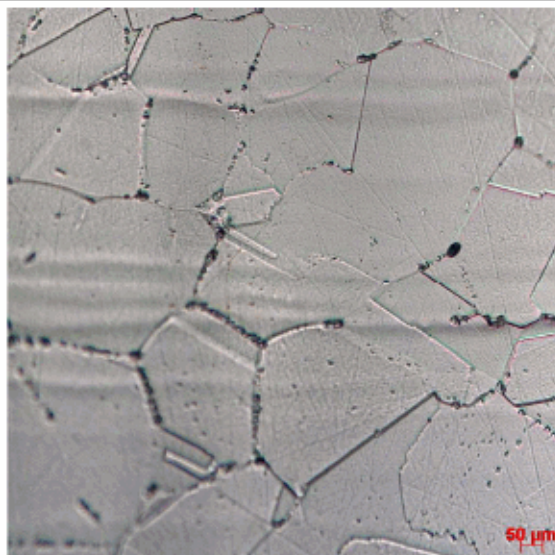
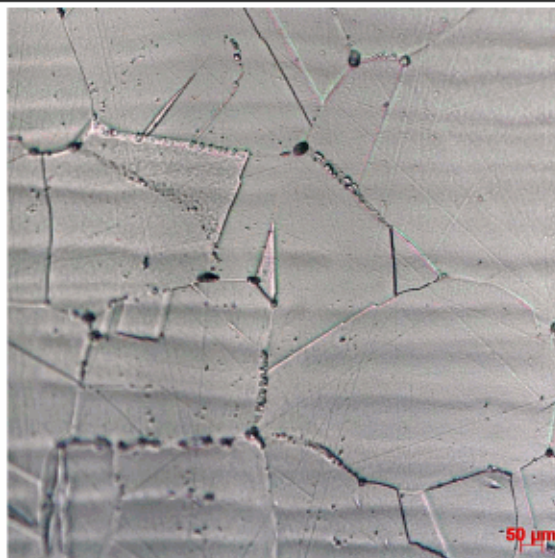
6777 Premium +/-32039

Projet - Project - Projekt

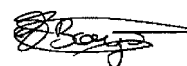
ANNEXES - APPENDIX - ANLAGEN

363419001

AN_0200008407_000050_363419004_001



ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Inspection Number :

Client - Purchaser - Besteller

HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag

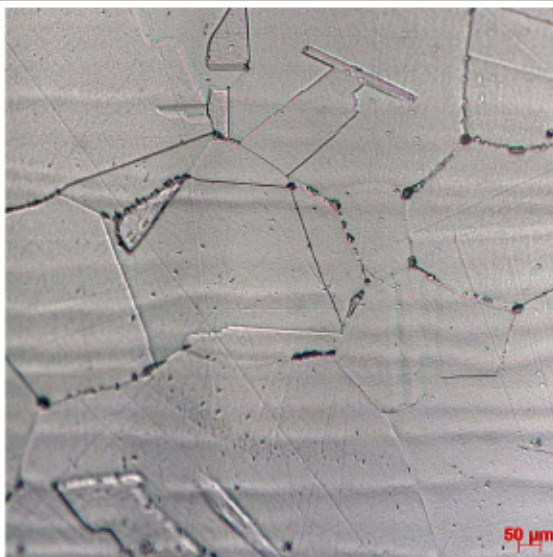
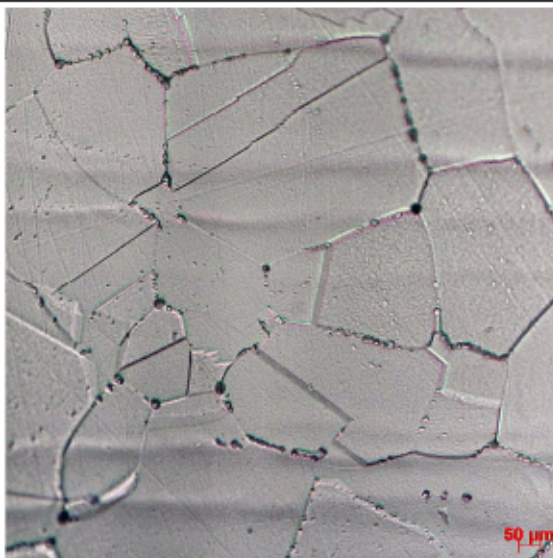
6777 Premium +/5-32039

Projet - Project - Projekt

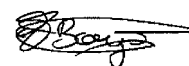
ANNEXES - APPENDIX - ANLAGEN

363419001

AN_0200008407_000050_363419004_001



ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Inspection Number :

Client - Purchaser - Besteller

HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag

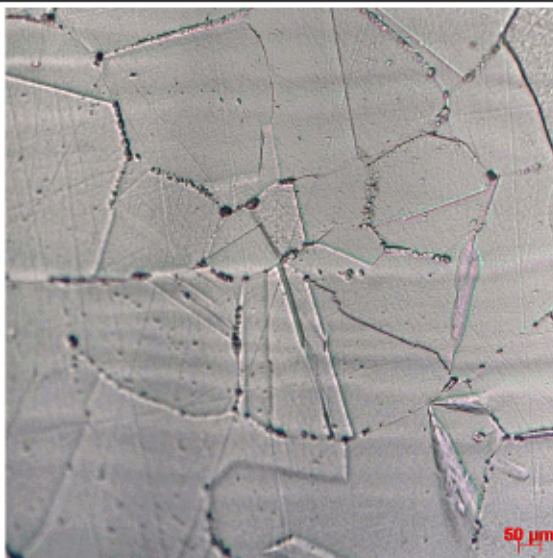
6777 Premium +/5-32039

Projet - Project - Projekt

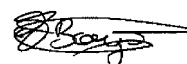
ANNEXES - APPENDIX - ANLAGEN

363419001

AN_0200008407_000050_363419004_001



ALEXANDRA BAYET
11/02/2021
Gestionnaire Commande
Mill inspector
Werksbeauftragte





HERTECANT

FLANGES

Cert 16

Tel.: +32 (0) 15 22 49 10

www.hertecantflanges.com

CERTIFICATE
EN 10204 - 3.1

No
21704858-2

Date
3/11/2021

Your order
4600031148

Our order
54308

Buyer: VAN LEEUWEN STAINLESS BV INDUSTRIEWEG 26 BOX 19 4153 ZG BEESD Nederland	Requirements: AD 2000 W2 W9 W10/ EN 1092-1 Rockwell HRC acc to NACE MR-01-75/01-03 ISO 15156 ASME SA 182 SECT II PART A ED 2019, YEAR ASTM 2019	CARACTERISTIQUES GARANTIES AM du 23/07/43 et AM du 24/03/78 C ≤ 0,25 % - S ≤ 0,05 % - P ≤ 0,05 % Rm ≤ 800 N/mm ² - A% sur 5,65√So ≥ 16 % Rm x A ≥ 10500
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Grade: 1.4404/1.4401 EN 10222-5 F316L/F316 ASTM A 182 / ASME SA 182	Heat treatment: solution annealed at 1050 °C quenched in water	Brand mark 	Inspectors stamp
---	---	-----------------------	-----------------------------

Marking: Heat + Prod.number / Description / Mark + Inspector stamp
 428593 P71075 TYPE 11B1 DN 25/33.7 PN 10/16/40 1.4404 EN 1092-1 SCHED 80S

Mechanical properties:											
	Rp 0,2 %	Rp 1,0	Rm	Elongation		Reduction of area [%]	Impact test 20° [J]				Lateral expansion
	[N/mm ²]	[N/mm ²]	[N/mm ²]	(4D) %	(5D) %		Avg				
TANG	333	380	581	50.4	49.5	62	86	101	130	106	1.57-1.64-2.06
	HARDNESS HB BRINELL 2.5/187.5 KG RESULTS:						170-176-170				

Chemical analysis (%) :											
C	Si	Mn	P	S	Cr	Mo	Ni	Ti	N	Cu	Al
0.021	0.52	1.55	0.032	0.027	16.84	2.07	10.13		0.057		
B	Co	Nb	W	V	Ta	Fe					
	0.090										

Melting process / Producer		E + AOD / VALBRUNA	
Inspection and gauge measurement: No remarks		100% PMI test: Result :No remarks	
		IGC test : EN ISO 3651-2: No remarks ASTM A262 Pract. E: No remarks	
Approved acc. AD 2000-Merkblatt W0/TRD100 by TÜV SÜD Industrie Service GMBH Certified acc. PED 2014/68/EU Annex 1, § 4.3 by certification Body -0036- of TÜV SÜD Industrie Service GMBH - Certificate Nr. 286/2006/MUC Renounced of counter signature agreed by TÜV SÜD (20/08/2012) The product mentioned herein complies with the specification and customers requirements. Materials are free from mercury. Country of origin of the flanges is Belgium. Materials are free of radio-active contamination.		Works inspector: QUALITY CONTROL DEPARTMENT	

TERMS AND CONDITIONS OF SALES ON OUR WEBSITE

HERTECANT FLANGES N.V.
 Lossing 22
 2260 Heultje - Westerlo (Belgium)
 BTW/VAT/TVA N° BE 0466 169 726

Tel.: +32 (0) 15 22 49 10
 www.hertecantflanges.com

Bank Belgium:
 ING Lummen
 IBAN BE89 3630 8481 1685
 SWIFT-code: BBRUBEBB

KBC Westerlo
 IBAN BE34 7330 4069 7590
 SWIFT-code: KREDBEBB

Vets



CERTIFICATE
EN 10204 - 3.1

No
21704858-3

Date
3/11/2021

Your order
4600031148

Our order
54308

Buyer: VAN LEEUWEN STAINLESS BV INDUSTRIEWEG 26 BOX 19 4153 ZG BEESD Nederland	Requirements: AD 2000 W2 W9 W10/ EN 1092-1 Rockwell HRC acc to NACE MR-01-75/01-03 ISO 15156 ASME SA 182 SECT II PART A ED 2019, YEAR ASTM 2019	CARACTERISTIQUES GARANTIES AM du 23/07/43 et AM du 24/03/78 C ≤ 0,25 % - S ≤ 0,05 % - P ≤ 0,05 % Rm ≤ 800 N/mm ² - A% sur 5,65√So ≥ 16 % Rm x A ≥ 10500 
---	---	--

Grade: 1.4404/1.4401 EN 10222-5 F316L/F316 ASTM A 182 / ASME SA 182	Heat treatment: solution annealed at 1050 °C quenched in water	Brand mark 	Inspectors stamp 
---	---	--	--

Marking: Heat + Prod.number / Description / Mark + Inspector stamp
283791 P69140 TYPE 11B1 DN 25/33.7 PN 10/16/40 1.4404 EN 1092-1 SCHED 80S

Mechanical properties:											
	Rp 0,2 %	Rp 1,0	Rm	Elongation		Reduction	Impact test 20° [J]				Lateral expansion
	[N/mm ²]	[N/mm ²]	[N/mm ²]	(50mm) %	(5D) %	of area [%]	Avg				
TANG	316	365	586	55.1	55.1	72	192	174	195	187	2.46-2.35-2.49
	HARDNESS HB BRINELL 2.5/187.5 KG RESULTS:						174-178				

Chemical analysis (%) :											
C	Si	Mn	P	S	Cr	Mo	Ni	Ti	N	Cu	Al
0.012	0.60	1.67	0.031	0.017	16.67	2.06	10.11		0.081		
B	Co	Nb	W	V	Ta	Fe					

Melting process / Producer		E+AOD/VALBRUNA	
Inspection and gauge measurement: No remarks		100% PMI test: Result :No remarks	
		IGC test : EN ISO 3651-2: No remarks ASTM A262 Pract. E: No remarks	
Approved acc. AD 2000-Merkblatt W0/TRD100 by TÜV SÜD Industrie Service GMBH Certified acc. PED 2014/68/EU Annex 1, § 4.3 by certification Body -0036- of TÜV SÜD Industrie Service GMBH - Certificate Nr. 286/2006/MUC Renounced of counter signature agreed by TÜV SÜD (20/08/2012) The product mentioned herein complies with the specification and customers requirements. Materials are free from mercury. Country of origin of the flanges is Belgium. Materials are free of radio-active contamination.		Works inspector: QUALITY CONTROL DEPARTMENT  Vets	



BFN Forgings Private Limited

(Formerly known as Bebitz Flanges Works Private Limited)

Survey No.140/2,Saravali Boisar-Taluka Palghar-Thane 401501-Maharashtra,INDIA
Tel.+91-0-9049991039/42/43-Fax+91-0-2525 274266/67-Email:quality@bfnforgings.com

Abnahmeprüfzeugnis 3.1/ Inspection Certificate 3.1 / Certificate de reception 3.1
nach(A02)/acc.DIN EN 10204 :2005 Nr.(A03)/No.10000005021 Datum(Z02)/Date 04-05-2021

Zeichen des Herstellers(A04)
Manufacturer's brand



Stempel des Abnehmers(Z03)
Stamp of the testing engineer



Überprüft als Hersteller nach AD-Merkblatt W0. Approved as manufacturer acc. AD-Merkblatt W0.
Zertifiziert nach DGR 2014/68/EU durch TÜV CERT Zertifizierungsst. für Druckgeräte der TÜV NORD GmbH Co KG, Benannte Stelle
Nr. 0045. / Certified acc. to PED 2014/68/EU, certifying body for pressure equipment TÜV NORD GmbH Co KG, registration no. 0045.

Besteller (A06) Customer	VAN LEEUWEN INDUSTRIEWEG 26 BEESD - 4153 ZG Gelderland Netherlands	Bestell-Nr (A07) / Order-No	PO-3532287
		Auftrag (A08) / Order	940000464
		Lieferschein / Delivery No.	800001663
		Position (B07.1) / Item	000050

Stck (B08) Quantity	Bezeichnung (B01; B09 - B11) Product	Schmelze/Prüflos (B07) Heat no./Test no.
641	EN-1092-1 TYPE-11 PN-40 25 X33.7 Form-B	116725

Material(B02; B05) F 316/F 316L ASTM A 182M-17 / ASME SA-182M / 1.4401(X5CRNIMO17-12-2)/1.4404(X2CRNIMO17-12-2)DINEN-10222-5
SOLUTION ANNEALED AT 1080 °C AND QUENCHED IN WATER

Anford.(B03) Requirements EN-1092-1 : 2013
AD-2000-MERKBL. W2, W9, W10 - (PED 2014/68/EU)
GESCHMIEDET / FORGED
PMI-TESTED 100%, IGC-TEST ACC. TO DIN EN ISO 3651-2 TEST A

Schmelzenanalyse (C71 - C92) / Ladle analysis **Erschmelzung (C70) / Melting process E**

C	Si	Mn	P	S	Cr	Ni	Ti	Mo	Nb	V	N	Cu	Al	PREN
0.018	0.39	1.56	0.036	0.025	16.8	10.08	0	2.05	0	0	0.072	0.52	0	24.69

Mechanische Prüfungen / Mechanical tests $CEV = C + \frac{Mn}{6} + \frac{V + Mo + Cr}{5} + \frac{Ni + Cu}{15}$ $PREN = Cr + 3,3 * Mo + 16 * N$

Probenlage (C02): q/t / Position of Specimen: q/t Tensile Test - DIN EN ISO 6892-1						Io = 5Do			KBV / Charpy Impact Test EN ISO 148-1 (V-notch, Position of specimen: q/t)			Harte (C32) Hardness ISO 6506-1	
Temp (C03) °C	Streckgr. (C11) / 0,2% N/mm²	Yield strength 1,0% N/mm²	Zugfestigk. (C12) Tensile strength N/mm²	Dehng. (C13) Elongation %	Einschnürr. Red. of area %	Temp (C03) °C	Einzelwerte (C42) Single values J	MW (C43) Average J	HBW>2pcs HBW(10/3000)				
20	MIN210 MAX	245	510, 710	35		20	60	60					
20	311	339	587	56.6	66.766	20	204,212,196	204	154				

Customer material 162043

Besichtigung und Ausmessung ohne Beanstandungen. (D01) / Results of inspection and dimension without objections.
Die gestellten Anforderungen sind erfüllt. (Z01) / The product sampled, Inspected ,tested and meets the requirement.

Bhaskar Rathod,
Inspection Representative of the Manufacturer (Z02)
BFN Forgings Private Limited, Saravali, Boisar, INDIA

F - QAC-09-04

**TUBES COMPANY PVT. LTD.**

A NORSOK APPROVED & DNV APPROVAL OF MANUFACTURER, AN ISO 9001:2015, ISO 14001:2015,
BS OHSAS 18001:2007, PED & ADW / AD 2000 W0 CERTIFIED COMPANY
MFG. & EXPORTER OF STAINLESS STEEL SEAMLESS & WELDED PIPES I TUBES I U TUBES
GOVT. RECOGNISED EXPORT HOUSE I CIN:U27106GJ2006PTC049217

F/QAC/12_REV.01												
<u>INSPECTION CERTIFICATE AS PER EN 10204 - 3.1</u>												
CUSTOMER NAME :- M/s VAN LEEUWEN STAINLESS BV												
P.O. NO. :- 3527978												
O.A.NO. :- 2020/10/13085_AP/EXP												
PRODUCT :- AUSTENITIC S.S. SEAMLESS PIPES (COLD FINISHED, SOLUTION ANNEALED & PICKLED)-MELTING PROCESS:- E.F.+A.O.D.												
MAT.SPEC. :- ASTM A 312-19, TP 316/316L, SA 312, TP 316L OF ASME SEC-II, PART -A, EDITION 2019, ASTM/ASME A/SA 999/999M,												
EN 10216-5, TC-1, GRADE 1.4401/1.4404, NACE MR 0175/ISO 15156-3 : 2015, NACE MR 0103/ISO 17495-1 : 2016,												
VAN LEEUWEN SPECIFICATION No :- 022.005 DATE:- 14.05.2014 & PED 2014/68/EU.												
W.O. SR. NO.	HEAT NO.	DIMENSIONS								NO. OF PCS	TOTAL METER	
24	21L0027	1" NB X SCH 80s X 5 TO 6 MTR RL								51	281.750	
CHEMICAL TEST %												
SR. NO.	HEAT NO.	S	C	Si	Mn	P	S	Ni	Cr	Mo	N	Ti
			0.030	1.000	2.000	0.040	0.015	10.000	16.500	2.000	0.100	--
			MAX	MAX	MAX	MAX	MAX	13.000	18.000	2.500	MAX	--
24	21L0027	H	0.026	0.330	1.640	0.038	0.010	10.090	16.850	2.040	0.077	--
		P1	0.025	0.356	1.678	0.035	0.009	10.098	16.879	2.056	0.075	--
		P2	0.025	0.378	1.659	0.036	0.010	10.057	16.899	2.065	0.077	--
MECHANICAL TESTS												
SR. NO.	TENSILE STRENGTH Rm N/mm ²	YIELD STRENGTH Rp 0.2% N/mm ²	YIELD STRENGTH Rp 1.0% N/mm ²	ELON. A%, G.L=5.65/A, G.W= FULL SPECIMEN	ELON. A%, G.L= 50MM, G.W= FULL SPECIMEN	HARDNESS TEST MAX	FLARING TEST	FLANGE TEST	RING EXPANSION TEST	FLATTENING TEST	RING TENSILE TEST	OTHER TEST
REQ.	515 - 690	205 MIN	240 MIN	L=40% (MIN)	L=35% (MIN)	90 HRB	--	--	--	--	--	--
24	608.00	315.00	345.00	52.00	54.00	76-78	N.A	N.A	OK	OK	N.A	N.A
	--	--	--	--	--							
REMARKS:-												
MARKING ON PRODUCT :- MAXIM S.S. SEAMLESS CFD PIPE, SIZE, SPECN, GRADE, HEAT NO, (O.A.No/Sr. No.) "PAP"												
HEAT TREATMENT :- SOLUTION ANNEALED AT TEMP. BETWEEN 1050°C TO 1070 °C AND FOLLOWED BY RAPID COOLING IN WATER.												
HYDRO TEST PRESSURE :- 2500psi(g), (WATER USED HAVING CHLORIDE CONTENT LESS THAN 10 ppm & HOLDING TIME 10 SEC. MIN)												
EDDY CURRENT TEST :- N.A												
[1] I.G.C TEST ACCORDANCE TO ASTM A 262, PRACTICE "E" CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[2] MECHANICAL TEST CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[3] PRODUCT ANALYSIS CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[4] 100% HYDRO TEST CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[5] 100% PMI TEST CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[6] 100% DIMENSION AND VISUAL CHECKED BY MTCPL - FOUND SATISFACTORY.												
[7] MATERIAL IS FREE FROM MERCURY AND RADIOACTIVE CONTAMINATION.												
[8] APPROVED ACC. TO AD2000-MERKBLATT W0 AND CERTIFIED ACCORDING TO PED 2014/68/EU ANNEX-I SEC 4.3 BY CERTIFICATION BODY-												
FOR PRESSURE EQUIPMENT OF TUV NORD SYSTEMS (REG. NO. 0045), MTCPL CERTIFICATE NO. 07/203/1409/WP/1680/21 & 07/202/1409/WZ/1680/21.												
NOTE:- S= SPECIFICATION,P= PRODUCT ANALYSIS,H= HEAT ANALYSIS,G.L= GAUGE LENGTH,G.W= GAUGE WIDTH,L= LONGITUDINAL,T = TRANSVERSE, N.A = NOT APPLICABLE.												
INSPECTOR'S/SURVEYOR'S SIGN				P.O. ITEM :- COMPLETE				 MANAGER (Q.A.)		 WORKS INSPECTOR (Q.A.)		
WE HEREBY CERTIFY THAT THE MATERIAL IS AS PER SIZE & SPECIFICATION MENTIONED IN ORDER, ALL TEST RESULT ARE ACCEPTABLE.												

REGISTERED OFFICE & WORKS: SURVEY NO. 105/106, NR. 66 KV SUBSTATION, CHHATRAL - PANSAR ROAD,
AHMEDABAD - MEHSANA HIGHWAY, CHHATRAL - 382729, TA. KALOL, DISTRICT GANDHINAGAR, GUJARAT, INDIA.
EXPORT PHONE: +91 99091 98877, FAX: +91 2764 234477, EXPORT@MAXIMTUBES.COM | WWW.MAXIMTUBES.COM

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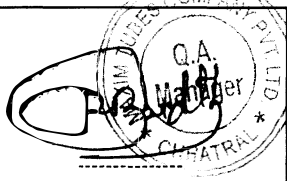
**CERTIFICATE**
EN 10204 - 3.1**No**
21704858-4**Date**
3/11/2021**Your order**
4600031148**Our order**
54308

Buyer: VAN LEEUWEN STAINLESS BV INDUSTRIEWEG 26 BOX 19 4153 ZG BEESD Nederland		Requirements: AD 2000 W2 W9 W10/ EN 1092-1 Rockwell HRC acc to NACE MR-01-75/01-03 ISO 15156 ASME SA 182 SECT II PART A ED 2019, YEAR ASTM 2019		CARACTERISTIQUES GARANTIES AM du 23/07/43 et AM du 24/03/78 C ≤ 0,25 % - S ≤ 0,05 % - P ≤ 0,05 % Rm ≤ 800 N/mm ² - A % sur 5,65√So ≥ 16 % Rm x A ≥ 10500 							
Grade: 1.4404/1.4401 EN 10222-5 F316L/F316 ASTM A 182 / ASME SA 182		Heat treatment: solution annealed at 1050 °C quenched in water		Brand mark 		Inspectors stamp 					
Marking: Heat + Prod.number / Description / Mark + Inspector stamp E211176 P73498 TYPE 11B1 DN 50/60.3 PN 10/16 1.4404 EN 1092-1 SCHED 80S		Quantity: 32									
Mechanical properties:											
		Rp 0,2 % [N/mm ²]	Rp 1,0 [N/mm ²]	Rm [N/mm ²]	Elongation (50mm) % (5D) %	Reduction of area [%]	Impact test 20° [J] Avg		Lateral expansion		
TANG		295	339	572	57.6 57.6	72	163	105	169	146	2.30-1.86-2.27
		HARDNESS HB BRINELL 2.5/187.5 KG RESULTS:					162-165				

Chemical analysis (%) :											
C	Si	Mn	P	S	Cr	Mo	Ni	Ti	N	Cu	Al
0.021	0.46	1.61	0.03	0.026	17.06	2.07	10.09		0.082		
B	Co	Nb	W	V	Ta	Fe					
0.0005	0.36										
Melting process / Producer			EAF+AOD+CC/OUTOKUMPU								
Inspection and gauge measurement: No remarks			100% PMI test: Result :No remarks				IGC test : EN ISO 3651-2: No remarks ASTM A262 Pract. E: No remarks				
Approved acc. AD 2000-Merkblatt W0/TRD100 by TÜV SÜD Industrie Service GMBH Certified acc. PED 2014/68/EU Annex 1, § 4.3 by certification Body -0036- of TÜV SÜD Industrie Service GMBH - Certificate Nr. 286/2006/MUC Renounced of counter signature agreed by TÜV SÜD (20/08/2012) The product mentioned herein complies with the specification and customers requirements. Materials are free from mercury. Country of origin of the flanges is Belgium. Materials are free of radio-active contamination.							Works inspector: QUALITY CONTROL DEPARTMENT Vets				

**COLD FINISHED****TUBES COMPANY PVT. LTD.**

A NORSOK APPROVED & DNV APPROVAL OF MANUFACTURER, AN ISO 9001:2015, ISO 14001:2015,
BS OHSAS 18001:2007, PED & ADW / AD 2000 W0 CERTIFIED COMPANY
MFG. & EXPORTER OF STAINLESS STEEL SEAMLESS & WELDED PIPES I TUBES I U TUBES
GOVT. RECOGNISED EXPORT HOUSE I CIN:U27106GJ2006PTC049217

F/QAC/12_REV.01												
INSPECTION CERTIFICATE AS PER EN 10204 - 3.1										T.C.NO :-MTCPL/2020-21/0221A6		
										DATE :-30.01.2021		
CUSTOMER NAME :- M/s VAN LEEUWEN STAINLESS BV												
P.O. NO. :- 3529954										DATE :-25.11.2020		
O.A.NO. :- 2020/11/13106_AP/EXP										DATE :-26.11.2020		
PRODUCT :- AUSTENITIC S.S. SEAMLESS PIPES (COLD FINISHED, SOLUTION ANNEALED & PICKLED)-MELTING PROCESS:- E.F.+A.O.D.												
MAT.SPEC. :- ASTM A 312-19, TP 316/316L, SA 312, TP 316L OF ASME SEC-II, PART-A, EDITION 2019, ASTM/ASME A/SA 999/999M,												
EN 10216-5, TC-1, GRADE 1.4401/1.4404, NACE MR 0175/ISO 15156-3 : 2015, NACE MR 0103/ISO 17495-1 : 2016,												
VAN LEEUWEN SPECIFICATION No :- 022.005 DATE:- 14.05.2014 & PED 2014/68/EU.												
W.O. SR. NO.	HEAT NO.	DIMENSIONS								NO. OF PCS	TOTAL METER	
22	20L1830	2" NB X SCH 80s X 5 TO 6 MTR RL								33	193.440	
CHEMICAL TEST %												
SR. NO.	HEAT NO.	S	C	Si	Mn	P	S	Ni	Cr	Mo	N	Ti
			0.030	1.000	2.000	0.040	0.015	10.000	16.500	2.000	0.100	--
			MAX	MAX	MAX	MAX	MAX	13.000	18.000	2.500	MAX	--
22	20L1830	H	0.020	0.410	1.750	0.036	0.011	10.080	16.870	2.040	0.071	--
		P1	0.018	0.423	1.745	0.035	0.010	10.056	16.879	2.045	0.063	--
		P2	0.019	0.452	1.765	0.036	0.010	10.059	16.845	2.056	0.069	--
MECHANICAL TESTS												
SR. NO.	TENSILE STRENGTH Rm N/mm ²	YIELD STRENGTH Rp 0.2% N/mm ²	YIELD STRENGTH Rp 1.0% N/mm ²	ELON. A%, G.L=5.65√A, G.W= 12.70 MM	ELON. A%, G.L=50MM, G.W= 12.70 MM	HARDNESS TEST MAX	FLARING TEST	FLANGE TEST	RING EXPANSION TEST	FLATTENING TEST	RING TENSILE TEST	OTHER TEST
REQ.	515 - 690	205 MIN	240 MIN	L=40% (MIN)	L=35%(MIN)	90 HRB	--	--	--	--	--	--
22	614.00	319.00	347.00	55.00	53.00	76-78	N.A	N.A	OK	OK	N.A	N.A
	--	--	--	--	--							
REMARKS:-												
MARKING ON PRODUCT :- MAXIM S.S. SEAMLESS CFD PIPE, SIZE, SPECN, GRADE, HEAT NO, (O.A.No/Sr. No.) "PAP"												
HEAT TREATMENT :- SOLUTION ANNEALED AT TEMP. BETWEEN 1050°C TO 1070 °C AND FOLLOWED BY RAPID COOLING IN WATER.												
HYDRO TEST PRESSURE :- 2500psi(g), (WATER USED HAVING CHLORIDE CONTENT LESS THAN 10 ppm & HOLDING TIME 10 SEC. MIN)												
EDDY CURRENT TEST :- N.A												
[1] I.G.C TEST ACCORDANCE TO ASTM A 262, PRACTICE "E" CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[2] MECHANICAL TEST CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[3] PRODUCT ANALYSIS CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[4] 100% HYDRO TEST CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[5] 100% PMI TEST CARRIED OUT BY MTCPL - FOUND SATISFACTORY.												
[6] 100% DIMENSION AND VISUAL CHECKED BY MTCPL - FOUND SATISFACTORY.												
[7] MATERIAL IS FREE FROM MERCURY AND RADIOACTIVE CONTAMINATION.												
[8] APPROVED ACC. TO AD2000-MERKBLATT W0 AND CERTIFIED ACCORDING TO PED 2014/68/EU ANNEX-I SEC 4.3 BY CERTIFICATION BODY-												
FOR PRESSURE EQUIPMENT OF TUV NORD SYSTEMS (REG. NO. 0045), MTCPL CERTIFICATE NO. 07/203/1409/WP/1680/21 & 07/202/1409/WZ/1680/21.												
NOTE:- S= SPECIFICATION,P= PRODUCT ANALYSIS,H= HEAT ANALYSIS,G.L= GAUGE LENGTH,G.W= GAUGE WIDTH,L= LONGITUDINAL,T = TRANSVERSE, N.A = NOT APPLICABLE.												
INSPECTOR'S/SURVEYOR'S SIGN			P.O. ITEM :- COMPLETE									
WE HEREBY CERTIFY THAT THE MATERIAL IS AS PER SIZE & SPECIFICATION MENTIONED IN ORDER, ALL TEST RESULT ARE ACCEPTABLE.												

REGISTERED OFFICE & WORKS: SURVEY NO. 105/106, NR. 66 KV SUBSTATION, CHHATRAL - PANSAR ROAD,
AHMEDABAD - MEHSANA HIGHWAY, CHHATRAL - 382729, TA. KALOL, DISTRICT GANDHINAGAR, GUJARAT, INDIA.
EXPORT PHONE: +91 99091 98877, FAX: +91 2764 234477, EXPORT@MAXIMTUBES.COM | WWW.MAXIMTUBES.COM

Ensuring Stainless Performance™



CHANDAN STEEL LIMITED
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)
ISO 9001 : 2015 CERTIFICATE No. 04 100 011022

ADM. OFFICE: 504, SUKH SAGAR, N. S. PATKAR MARG,
MUMBAI 400 007, INDIA
Tel.: 91-22- 66290600. Fax.: 91-22-66290633/34
Website : www.chandansteel.net
Email : csl@chandansteel.net
L/c. No. :
L/c.Date:

WORKS: Plot No. 35, G. I. D. C., Umbergaon
Dist Valsad, Gujarat - 396 171.
Tel.: 91-260-256 2066 / 4367 / 1166. Fax.: 91-260-256 2287
E-mail : exports@chandansteel.net

INSPECTION CERTIFICATE 3.1
ACCORDING TO EN 10204

VAN LEEUWEN STAINLESS Industrieweg 26, PO Box 19, NL - 4153 ZG BEESD NETHERLAND							Test Certificate No. : EXP/ 01118-20/2018-19 Date of Issue : 22.12.2018 P.O.No. : 3477443 Invoice No. & Date : EXP/ 01118/2018-19 Dtd.22.12.2018						
ITEM DESCRIPTION													
STAINLESS STEEL FORGED & FULLY MACHINED FLANGES													
SR NO.	Article No.	Heat No.	Pcs	Box No.	Wt.Kgs	Grade	Size Description	Process Route					
108	194521	CH-9257	22	46	262.46	1.4401/1.4404/F316/316L	DN150/168,3x10,97 TYPE 11 PN 40	Electric Induction Melting, A.O.D. Refining Continuous Casting & Hot Forging.					
91	164920	CH-9334	34	46	270.98	1.4401/1.4404/F316/316L	DN150/168,3x10,97 TYPE 11 PN 16						
82	161942	CH-8183	1	46	31.21	1.4401/1.4404/F316/316L	DN400/406,4 TYPE 11 PN 10						
-	-	-	-	-	-	-	-						
-	-	-	-	-	-	-	-						
CHEMICAL COMPOSITION (Weight %)													
SR NO.	Article No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	OTHERS
108	194521	0.026	0.42	1.75	0.044	0.018	16.80	2.00	10.02	-	-	0.076	-
91	164920	0.026	0.46	1.75	0.045	0.004	16.74	2.07	10.05	-	-	0.079	-
82	161942	0.024	0.45	1.80	0.040	0.008	16.75	2.03	10.05	-	-	0.077	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
MECHANICAL PROPERTIES													
SR NO.	Article No.	HEAT TREATMENT BATCH NO.	Yield Strength (N/mm ²)		Tensile Strength N/mm ² (R _m)	% EL	% R.A.	Hardness (B.H.N.)	Charpy (V) Impact Test (2mm) at 20°C (Joules) Sample Size - 10 x 10 x 55mm				
			0.2% (R _{e0.2})	1% (R _{p1.0})					I	II	III	Avg.	
108	194521	F2/018/2968	284	319	585	53	73	165-168	158	162	167	162	
91	164920	F2/018/3118	283	335	590	51	75	165-168	153	152	163	156	
82	161942	F1/018/1222	287	322	587	52	71	170-174	160	169	163	164	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	
Remarks: 1. Each heat treatment batch is having about 6000 Kgs of Weight. 2. The material is solution annealed at minimum 1050 °C and water quenched. 3. Material is free from mercury and radio-active contamination and is found within the limits of the background radiation. 4. PMI test 100% found satisfactory. 5. Micro Structure Reveals Austenitic grains with annealing twins and is free from carbide precipitation (At 500 X). 6. Inter-Granular Corrosion Test (ASTM A262 - 15 (Pr.E)):- Satisfactory. 7. The material conforms to EN 10222 - 5 - 2017, ASTM A 182 - 17, ASME Section II, Part A-SA 182 - 17 & Dimension conforms to EN 1092-1-2013 Specification. 8. The material hardness conforms to NACE MR0175/ISO 15156-3:2015 & NACE MR0103-2015. 9. Approved acc. To AD 2000-Merkblatt W0 and certified acc to PED 2014/68/EU by Certification Body for Pressure Equipment of TÜV NORD Systems (notified body, reg. no.:0045). 10. Material Conforms to PED 2014/68/EU Clause 4.3 of Annex 1. 11. Materials complies as per AD 2000 - Merkblatt W 2, W 9, W 10. 12. Dimension checked & found satisfactory. 13. Location of sample -Direction of test piece - Tangential, Test Temp - Room Temp., Shape of Test Piece (Size) - Round (200mm Length).													

We hereby certify that, the material described herein,
and supplied are in compliance with the requirements of the order.



V. Y. NARAYANAN
 WORKS INSPECTOR





INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: TPIPL/MTC-2018/2224

Rev: 01

Page: 1 of 4

Created on:

Date: 31.03.2019

Modified on:

18.10.2019

TUBACEX PRAKASH INDIA PVT LTD.

Plot No. 131/1, Umbergaon – Sanjan Road, Umbergaon – 396171

Dist. Valsad, Gujarat, INDIA

TL: +91 260 6616200, +91 260 6616240

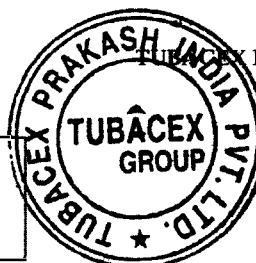
E-MAIL: quality@tubacexindia.com**CUSTOMER DESCRIPTION****CLIENT SOLD TO**

M/S. TUBACEX SERVICE SOLUTIONS, S.A.U

CLIENT SHIP TO**CLIENT ORDER:** 507189 **DATE:** 18.02.2019**SALES ORDER:** 1201347**MATERIAL:** SEAML. STAINL. STEEL PIPES.**COLD FINISHED & HEAT-TREATED. PICKLED & PASSIVATED ACC. TO ASTM A380.****GRADE:** TP 316/316L / 1.4401/ 1.4404.**STANDARD:****ASME SEC.II PART-A SA 312-2017 ED.****ASME SEC.II PART-A SA 376/SA376M-2017 ED.****ASTM A 312/A 312M-16a(ED.2017)****ASTM A 376/A 376M-14(ED.2017)****EN 10216-5:2014-03 TC1****EN 10297-2:2006****NACE MR0103:2015****NACE MR0175/EN ISO 15156: 2015****PED 2014/68/EU****CHECK ANALYSIS****CORR. TESTED ACC. TO ASTM A262 PRACTICE 'E'****CORR. TESTED ACC. TO DIN EN ISO 3651-2 MET-A****CORR. TESTED ACC. TO MIL-P-24691/3****HYDROTEST****TOLERANCES / ASME SECT.II PART.A SA999/SA999M.****ASTM A999/A999M****EN ISO 1127:1997 D3/T3****LENGTHS/ 6.00M/PLAIN ENDS****DIMENSIONS : SR NO.1 - 114.30 X 8.56 MM - 4" X SCH 80S****DIMENSIONS : SR NO.2 - 141.30 X 6.55 MM - 5" X SCH 40S****DIMENSIONS : SR NO.3 - 168.28 X 10.97 MM - 6" X SCH 80S****DIMENSIONS : SR NO.4 - 219.08 X 12.70 MM - 8" X SCH 80S****DIMENSIONS : SR NO.5 - 219.08 X 12.70 MM - 8" X SCH 80S****Declaration :**

We hereby certify that the material herein describe has been manufactured, sampled, tested and inspected in accordance with above standard and specification and satisfies orders requirements.

Any forgery or falsification of this certificate shall legally prosecuted.



TUBACEX PRAKASH INDIA PVT LTD.

QA MANAGER (QA)


INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: TPIPL/MTC-2018/2224

Rev: 01

Page: 2 of 4

Created on:
Date: 31.03.2019Modified on:
18.10.2019

Sr No.	Sales Item	Client Item	Delivery No	Lot No.	Heat No	Pieces	Weight	Tot Lgth	Un Lgth
1	1	---	---	---	WS-180046	9	1257	54.000 M	6000 MM
2	2	---	---	---	WS-180043	4	538	24.000 M	6000 MM
3	4	---	---	---	WS-180049	17	4390	102.000 M	6000 MM
4	5	---	---	---	WS-180030	1	396	6.070 M	5500-6200 MM
5	5	---	---	---	WS-180050	12	4596	72.205 M	5500-6200 MM

RAW MATERIAL

Sr. No.	Heat Nr:	Method
1	WS-180046	Electric furnace + AOD
2	WS-180043	Electric furnace + AOD
3	WS-180049	Electric furnace + AOD
4	WS-180030	Electric furnace + AOD
5	WS-180050	Electric furnace + AOD

CHEMICAL COMPOSITION (%)

*L: Ladle C: Products

Sr. No.	*	Heat	C	Mn	Si	P	S	Ni	Cr	Mo	N
Req. Max.			0.030	2.00	1.00	0.040	0.015	13.00	18.00	2.50	0.10
Req. Min.			-	-	-	-	-	10.00	16.50	2.00	-
1	L	WS-180046	0.018	1.06	0.37	0.036	0.002	10.08	16.58	2.04	0.029
1	C	WS-180046	0.016	1.02	0.38	0.034	0.003	10.04	16.61	2.05	0.031
2	L	WS-180043	0.019	1.18	0.37	0.035	0.001	10.08	16.68	2.04	0.028
2	C	WS-180043	0.018	1.14	0.40	0.033	0.002	10.06	16.64	2.06	0.030
3	L	WS-180049	0.022	1.11	0.34	0.035	0.001	10.08	16.65	2.05	0.029
3	C	WS-180049	0.021	1.07	0.35	0.032	0.002	10.07	16.62	2.07	0.031
4	L	WS-180030	0.019	0.98	0.32	0.031	0.006	10.08	16.62	2.05	0.051
4	C	WS-180030	0.018	1.02	0.34	0.030	0.005	10.05	16.58	2.04	0.054
5	L	WS-180050	0.021	1.02	0.36	0.034	0.002	10.07	16.61	2.03	0.031
5	C	WS-180050	0.020	1.05	0.33	0.032	0.001	10.06	16.59	2.07	0.034

HEAT TREATMENT

SOLUTION ANNEALED AT 1040° C MIN, FOLLOWED BY WATER QUENCHING.

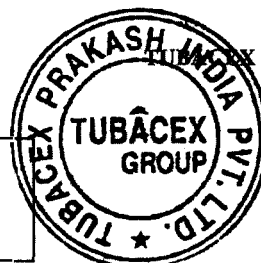
TENSILE TEST: ACCORDING TO ASTM A 370/ EN ISO 6892-1

Sr. No.	Lot No.	Sample	Temp	YS	Rp0.2	Rm	A2"	A5	Type	Spc. Type	Spc. Dim
			°C	MPa	MPa	MPa	%	%			mm
Req. max.			---	---	---	690	---	---		---	---
Req. Min.			---	205	205	515	35	40		---	---
1	---	1	RT	299.06	288.51	606.37	59.60	62.54	L	R	25.62
2	---	1	RT	303.84	294.15	596.78	60.40	57.80	L	R	25.38
3	---	1	RT	307.41	298.06	602.35	57.80	55.83	L	R	38.12

Declaration :

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TUBACEX PRAKASH INDIA PVT LTD.

DY. (MANAGER (QA))



INSPECTION CERTIFICATE
EN 10204:2004 / 3.1

Number: TPIPL/MTC-2018/2224

Rev: 01

Page: 3 of 4

Created on:
Date: 31.03.2019Modified on:
18.10.2019

4	---	1	RT	301.15	292.05	595.27	59.60	61.95	L	R	38.16
5	---	1	RT	295.36	288.83	583.88	61.40	56.21	L	R	25.48

HARDNESS TEST ACCORDING TO ASTM A 370 / NACE MR 0175 & NACE MR 0103 - ISO 15156

Sr. No.	Lot No.	Sample	HRB1 22HRC (99 HRB)	HRB2 22HRC (99 HRB)
	Req. Max			
	Req. Min		—	—
1	---	1	76	79
2	---	1	74	77
3	---	1	73	75
4	---	1	76	78
5	---	1	73	75

METALLURGICAL TESTS

MICRO STRUCTURE ACC. ASTM E 112 GRAIN SIZE 5-6 MATERIALS FREE FROM CARBIDE PRECIPITATION.

UNIFORM AUSTENITIC STRUCTURE ACROSS FULL WALL THICKNESS.

INTERGRANULAR CORROSION TEST CARRIED OUT ACC. DIN EN ISO 3651-2 MET. A: SATISFACTORY

INTERGRANULAR CORROSION TEST CARRIED OUT ACC. ASTM A 262 PRACT. E/MIL-P-24691-3: SATISFACTORY

NON-DESTRUCTIVE TESTS

POSITIVE MATERIAL IDENTIFICATION TEST CARRIED OUT ON EACH PIPE BY "X-RAY-FLUORESCENCE-ANALYZER"

(TARGET ELEMENTS CR, NI & Mo): SATISFACTORY.

HYDROSTATIC PRESSURE TEST CARRIED OUT ON EACH PIPE FOR DURATION OF 5 SEC AT PRESSURE AS GIVEN BELOW:

Sr. No.	Sales Item	Hydro Pressure (Psig)	Remarks
1	1	2300	SATISFACTORY
2	2	1400	SATISFACTORY
3	4	2000	SATISFACTORY
4	5	1800	SATISFACTORY
5	5	1800	SATISFACTORY

100% EDDY CURRENT TEST ON EACH PIPE FOR ≤4"NPS AS PER ASTM E426: SATISFACTORY

DIMENSIONAL CHECKING ON EACH PIPE: SATISFACTORY

VISUAL INSPECTION ON EACH PIPE: SATISFACTORY

TECHNOLOGICAL TESTS

FLATTENING TEST: SATISFACTORY

DRIFT EXPANDING TEST: SATISFACTORY

RING TENSILE TEST : SATISFACTORY (FOR SR NO.3,4,5)

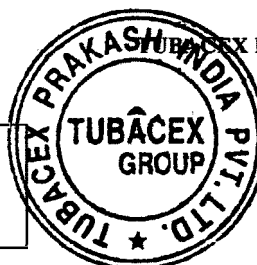
MARKING

TUBACEX INDIA.TUBACEX GROUP/ CFS PIPE ---MM OD X ---MM THK ---" SCH--- X-----MTR LONG HEAT NO. ----
ASTM /ASME A/SA 312/EN 10216-5 TC-1 TP316/316L 1.4401/ 1.4404 /---/ NACE MR0175 / MR0103 MADE IN
INDIA. PMI-AV(TPIPL-1)

Declaration :

We hereby certify that the material herein describe has been manufactured, sampled, tested and inspected in accordance with above standard and specification and satisfies orders requirements.

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TUBACEX PRAKASH INDIA PVT LTD.

DY. MANAGER (QA)



**INSPECTION CERTIFICATE
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Number: TPIPL/MTC-2018/2224

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Page: 4 of 4

Created on:

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REMARKS

NO MERCURY, MERCURY COMPOUNDS OR MERCURY BEARING INSTRUMENTS AND/OR EQUIPMENT HAVE BEEN USED ALONG MANUFACTURING AND INSPECTION PROCESS.

NO WELDING OR WELD REPAIRS WERE MADE.

WE HEREBY CONFORM THAT WE ARE CERTIFIED BY TUV RHEINLAND INDUSTRIE SERVICE GmbH AS NOTIFIED BODY(0035) TO ISSUE CERTIFICATES OF SPECIFIC PRODUCT CONTROL IN ACCORDANCE TO PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU ANNEX I POINT 4.3 & AD 2000-WO. PED 2014/68/EU CERTIFICATE NO.: 01 202 IND/Q-15- 0036 VALID UNTILL DECEMBER 31, 2021.

MATERIAL CHARACTERISTIC COMPLY WITH POINT 7.5 OF ANNEX I TO PED BY HAVING AN ELONGATION AFTER RUPTURE AT TENSILE TEST NO LESS THAN 14% AND A BENDING RUPTURE ENERGY AT IMPACT TEST NO LESS THAN 27J AT 20°C

MATERIAL IS FREE OF RADIATION CONTAMINATION.

MATERIAL CERTIFIED AS GRADE TP 316/316L/1.4401/1.4404 REALLY MEANS TP 316L/1.4401/1.4404 AND MECHANICAL PROPERTIES OF TP 316/316L

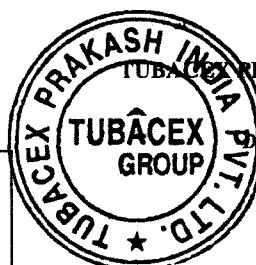
ABBREVIATIONS

YS-YIELD STRESS, UTS-ULTIMATE TENSILE STRESS, A2"-GAUGE LENGTH (2 INCH), A5-GAUGE LENGTH 5.65√S°, RT-ROOM TEMPERATURE, T-TRANSVERSE, L-LONGITUDINAL, R-REDUCED SECTION, F-FULL SECTION, R/L-RANDOM LENGTH, SPC-SPECIMEN, M-METER, OD- OUTSIDE DIAMETER, WT- WALL THICKNESS, TPIPL - TUBACEX PRAKASH INDIA PVT LTD.

Declaration :

We hereby certify that the material herein describe has been manufactured, sampled, tested and inspected in accordance with above standard and specification and satisfies orders requirements.

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TUBACEX PRAKASH INDIA PVT LTD.

MANAGER (QA)



MAC Piping Materials Sdn. Bhd.

Company No : 1250791-W

Lot 8095, Jalan Sungai Rasau 32,
Kawasan 16, Sungai Rasau, 41300 Klang,
Selangor Darul Ehsan, Malaysia

Tel : +603-3344 9733 Fax : +603-3344 9722

Website : www.macpiping.com

Email : enquiry@macpiping.com

07/202/9030/WZ/2302/18



MS ISO 9001 : 2015

QMS 03265

Cert 22

MILL TEST REPORT

IN ACCORDANCE TO EN 10204 3.1

CERTIFICATE NO : MAC9200695 (6) DATE : 31/10/2019

INVOICE NO. : INVE00182

CONTRACT NO. : SO-000174/175

SHIPPER : MAC PIPING MATERIALS SDN BHD

PURCHASE ORDER N : 3503406/3503407

CUSTOMER : VAN LEEUWEN STAINLESS B.V.

PRODUCT : STAINLESS STEEL BUTT WELD FITTINGS (SEAMLESS)

SPECIFICATION : ASTM A403/ASME SA403M-18a

MATERIAL GRADE : WP316/316L-S (SEAMLESS)

NO.	DESCRIPTION OF GOODS (PRODUCT, SIZE, SCHEDULE, GRADE)	PO No.	QUANTITY (PCS)	WEIGHT (KGS)	HEAT NUMBER	TENSILE TEST			HARD- NESS TEST (HRB)	NON- DESTRUCTIVE TEST (NDT)					CHEMICAL COMPOSITION (wt%)							
						Y.S.	T.S.	EL %		RT	UT	MT	PT	ET	C	Si	Mn	P	S	Ni	Cr	Mo
						N	N	(L)														
						mm²	mm²	(L)														
						205	515	28							-	-	-	-	-	1000	1600	200
															3.0	100	200	45	30	1400	1800	300
1	ELBOW 90 3" SCH 10S 316/L (S)	3503407	360	457.20	53DC811	260	578	56	72	N/A	N/A	N/A	N/A	N/A	1.9	33	80	31	2	1008	1620	206
2	ELBOW 90 3" SCH 10S 316/L (S)	3503407	630	800.10	53DE226	263	578	58	74	N/A	N/A	N/A	N/A	N/A	1.9	33	80	31	2	1008	1620	206
3	ELBOW 90 3" SCH 40S 316/L (S)	3503407	4	8.68	53DD129	265	575	56	72	N/A	N/A	N/A	N/A	N/A	1.7	39	86	34	2	1007	1632	205
4	ELBOW 90 3" SCH 40S 316/L (S)	3503407	1	2.17	53DB921	253	548	52	75	N/A	N/A	N/A	N/A	N/A	1.5	35	92	34	1	1004	1644	202
5	ELBOW 90 3" SCH 40S 316/L (S)	3503407	5	10.85	53DC817	263	578	55	76	N/A	N/A	N/A	N/A	N/A	2.4	34	81	36	2	1007	1642	206
6	ELBOW 90 3" SCH 40S 316/L (S)	3503407	160	347.20	53DE233	270	575	56	72	N/A	N/A	N/A	N/A	N/A	2.4	34	81	36	2	1007	1642	206
7	ELBOW 90 3" SCH 40S 316/L (S)	3503407	80	173.60	53DE430	280	582	60	70	N/A	N/A	N/A	N/A	N/A	1.4	36	95	40	1	1005	1647	204
8	ELBOW 90 3" SCH 80S 316/L (S)	3503407	100	301.00	53TG112	230	538	45	70	N/A	N/A	N/A	N/A	N/A	2.5	56	95	34	3	1020	1670	211
9	ELBOW 90 3/4" SCH 80S 316/L (S)	3503407	50	5.50	53TG1U0	240	540	46	72	N/A	N/A	N/A	N/A	N/A	2.7	46	105	35	3	1004	1688	212
10	ELBOW 90 6" SCH 80S 316/L (S)	3503407	25	408.25	53TG118	240	535	46	71	N/A	N/A	N/A	N/A	N/A	2.7	49	104	33	5	1005	1660	210
11	ELBOW 90 8" SCH 40S 316/L (S)	3503407	10	207.80	53DE434	263	581	58	74	N/A	N/A	N/A	N/A	N/A	1.4	37	93	40	2	1006	1639	205

NOTE :

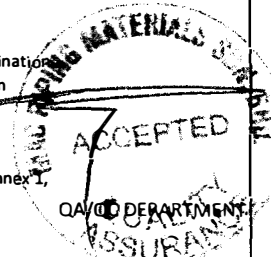
Note

Y.S = Yield Strength
T.S = Tensile Strength
E.L = Elongation In 50mm
(or 4D), min, %
1Ksi = 1,000 Psi
1Mpa = 1N/mm2 = 0.145038 Ksi

SCH = Schedule
R.T = Radiography Test
U.T = Ultrasonic Test
M.T = Magnetic Practice Test
E.T = Electromagnetic Test
P.T = Dye Penetrant Test

- * HEAT TREATMENT : 1050 DEGREE CELSIUS QUENCHED IN WATER
- * Products conform to ASME B16.9 and ASME Sec II Part A-2017 SA-403/SA-403M, Cold formed, annealed and quenched, bevelled ends to ASME B16.25,
- * Materials are in accordance to NACE MR 0175 (ISO 15156-1 & 15156-3 -2015) & NACE MR 0103 -2015.(Latest Edition)
- * Intergranular Corrosion Test are in Accordance to ASTM A262 Practice E: Passed
- * Surface and dimension check has been carried out 100% to all products

- * Products are mercury free and free from mercury contamination
- * Raw material manufacturer has detected it to be free from radioactive contamination.
- * All fittings are confirmed 100% P.M.I tested
- * Stainless steelmaking : Electric arc furnace
- * Certified according to AD2000 W0 and PED2014/68/EU Annex 1, Paragraph 4.3
- * Country of Origin Malaysia





Zhejiang Kanglong Steel Co.,Ltd

ADD:NO.356 LVGU AVENUE,SHUIGE INDUSTRIAL ZONE,LISHUI,CHINA

MILL TEST/INSPECTION REPORT 1 to EN 10204 3.1. B

Customer : MAC PIPING MATERIALS SDN BHD

Contract No. : MAC180301-01

Cert No. : KL20180418-12

Specification : A/SA 312-11 A/SA376 B36.19M-04

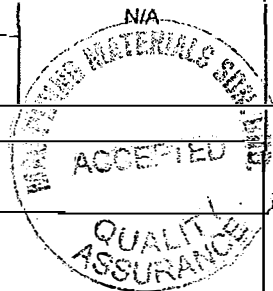
Surface Finished : ANNEALED & PICKLED

Steel Grade : TP 316/316L

Production Tech : Cold Finished

Description : STAINLESS STEEL SEAMLESS PIPE

Heat No.		Chemical Composition (%)							
		C	Mn	Si	P	S	Ni	Cr	Mo
Spec.	min.						10.00	16.00	2.00
	max	0.035	2.00	1.00	0.045	0.030	14.00	18.00	3.00
LD160310-03		0.025	0.950	0.560	0.034	0.0030	10.200	16.700	2.11
Batch No.		Size			Quantity				
		3" Sch80S			20	PCS	2066	KG	115
Test No.		Mechanical Properties							
		Yield Strength Mpa	Tensile Strength Mpa	Elongation A(%)	Hardness Test HRB	Flaring Test	Flattening Test	Heat Treatment °C	Hydrostatic Test ASTM A999/999M
Spec.	min.	205	515	35					
	max.				90				
		230	538	45	69.7	GOOD	GOOD	1050	N/A
		Acc to ASTM A370-11						22min	
Nondestructive Examination				Inter-granular Corrosion					
Eddy Current Test Acc to ASTM E426-11a		Ultrasonic Test Acc to ASTM E213-09		Acc to ASTM A262-13 E PRACTICE					
GOOD		/		GOOD					
Additional Remarks:									
1.Dimension & Surface: Good				2.Country of Origin: China					
3.Hardness acc. to NACE MR 0175				4.Meets the specification MIL-P-24691, free of Mercury & radiation.					
5. 100% PMI tested and passed				6. No weld repair					
We hereby certify that we are ISO9001-2008 certificated company and the products were manufactured, sampled, tested, and inspected in accordance with and meets with the specifications of ASTM B36.19,A/SA312, A/ SA 376, ASTM A999 and ISO15156 and EN 10204 Type "3.1" latest revisions. and complies with the terms of the Contract.									
MAC HEAT NUMBER 53TG112									
				2018-04-18					
				Date		Quality Technology Director:			



 BFN Forgings Private Limited (Formerly known as Bebitz Flanges Works Private Limited) Survey No.140/2,Saravali Boisar-Taluka Palghar-Thane 401501-Maharashtra,INDIA Tel.+91-0-9049991039/42/43-Fax+91-0-2525 274266/67-Email:quality@bfnforgings.com														
Abnahmeprüfzeugnis 3.1/ Inspection Certificate 3.1 / Certificate de reception 3.1 nach(A02)/acc.DIN EN 10204 :2005 Nr.(A03)/No.100000006793 Datum(Z02)/Date 09-06-2021														
Zeichen des Herstellers(A04) Manufacturer's brand		Stempel des Abnehmers(Z03) Stamp of the testing engineer												
Überprüft als Hersteller nach AD-Merkblatt W0. Approved as manufacturer acc. AD-Merkblatt W0. Zertifiziert nach DGR 2014/68/EU durch TÜV CERT Zertifizierungsst. für Druckgeräte der TÜV NORD GmbH Co KG, Benannte Stelle Nr. 0045. / Certified acc. to PED 2014/68/EU, certifying body for pressure equipment TÜV NORD GmbH Co KG, registration no. 0045.														
Besteller (A06) Customer	Bestell-Nr (A07) / Order-No Auftrag (A08) / Order Lieferschein / Delivery No. Position (B07.1) / Item	PO-3532287 940000492 800001788 000035												
Besteller VAN LEEUWEN INDUSTRIEWEG 26 BEESD - 4153 ZG Gelderland Netherlands														
Stck (B08) Quantity	Bezeichnung (B01; B09 - B11) Product	Schmelze/Prüflos (B07) Heat no./Test no.												
156	EN-1092-1 TYPE-05 PN-16 80 Form-A	116969												
Material(B02; B05) F 316/F 316L ASTM A 182M-17 / ASME SA-182M / 1.4401(X5CRNIMO17-12-2)/1.4404(X2CRNIMO17-12-2)DINEN-10222-5 SOLUTION ANNEALED AT 1080 °C AND QUENCHED IN WATER														
Anford.(B03) Requirements EN-1092-1 : 2013 AD-2000-MERKBL. W2, W9, W10 - (PED 2014/68/EU), NACE MR0175-2015 / MR0103-2015 - DIN EN ISO 15156-3 : 2015 GESCHMIEDET/ FORGED PMI-TESTED 100%, IGC-TEST ACC. TO DIN EN ISO 3651-2 TEST A														
Schmelzenanalyse (C71 - C92) / Ladle analysis		Erschmelzung (C70) / Melting process E												
C	Si	Mn	P	S	Cr	Ni	Ti	Mo	Nb	V	N	Cu	Al	PREN
0.021	0.37	1.57	0.04	0.021	16.8	10.04	0	2.04	0	0	0.076	0.36	0	24.81
Mechanische Prüfungen / Mechanical tests $CEV = C + \frac{Mn}{6} + \frac{V + Mo + Cr}{5} + \frac{Ni + Cu}{15}$ $PREN = Cr + 3,3 * Mo + 16 * N$														
Probenlage (C02): q/t / Position of Specimen: q/t Tensile Test - DIN EN ISO 6892-1							Io = 5Do			KBV / Charpy Impact Test EN ISO 148-1 (V-notch, Position of specimen: q/t)			Harte (C32) Hardness ISO 6506-1	
Temp (C03) °C	Streckgr. (C11) / 0,2% N/mm²	Yield strength 1,0% N/mm²	Zugfestigk. (C12) Tensile strength N/mm²	Dehng. (C13) Elongation %	Einschnürr. Red. of area %	Temp (C03) °C	Einzelwerte (C42) Single values J		MW (C43) Average J		HBW>2pcs HBW(10/3000)			
20	MIN190	MIN 225	510 TO 690	MIN 35		20	60		60					
20	228	257	651	54.88	68.1	20	174,160,188		174		158			
Customer material 161901														
Besichtigung und Ausmessung ohne Beanstandungen. (D01) / Results of inspection and dimension without objections. Die gestellten Anforderungen sind erfüllt. (Z01) / The product sampled, Inspected, tested and meets the requirement.														
Bhaskar Rathod, Inspection Representative of the Manufacturer (Z02) BFN Forgings Private Limited, Saravali, Boisar, INDIA														
F - QAC-09-04														



Aperam Stainless Services & Solutions Benelux S.A.

Genk-Zuid, Zone 5 Bosdel 87
B - 3600 GENK

Tel: +32 89 36 56 00
Fax: +32 89 36 56 31

TEST REPORT RELEVÉ DE CONTRÔLE WERKSZEUGNIS

According to / Selon / Gemäß
EN 10204

BL: 0174363 - 1

Date: 11/06/2021

Cert 24

6197L

Manufact. / Product. / Herstell.

APERAM STAINLESS EUROPE

Supplier Lot / Lot Fourn. / Band Nr

10805243

Item / Article / Produkt

COIL 1.4404 2B 6,0 X 1500,0

Heat N° / N° de coulée / Schmelz Nr

108052

Customer / Client / Kunde

ZIEMANN HOLVRIEKA NV

Steel Designation / Désignation Acier / Stahlbezeichnung

EN 10028-7 WNR 1.4404/1.4401
EN 10088-2 WNR 1.4404/1.4401
ASTM A 240(M) TYPE 316L/316
ASME SA 240 TYPE 316L/316

Order / Commande / Order

102127810 - 01

Reference / Référence / Referenz

20667

AD 2000 W2 -- AD 2000 W10 -- PED 2014/68/EU

Mill Certificate / N° de Certificats / Prüfzeugnis Nr

21K0022908

Chemical Analysis / Analyse Chimique / Chemische Zusammensetzung

	C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Cu	Al				
Cast Analysis Analyse Coulée Analyse	0,023	0,52	1,3	10,09	16,56	2,03		0,04	0,002	0,035	0,42					

Mechanical Properties / Propriétés Mécaniques / Mechanische Werte EN ISO 6892-1 B

	Yield strength Limite D'élasticité Dehngrenze MPA		Tensile strength Résistance à la traction Zugfestigkeit MPA		Elongation after fracture (A) Allongement après rupture Bruchdehnung %		Hardness Dureté Haerte	
	Rp 0.2 %	Rp 1%	Rm	A5	50 mm	HRB	DDQ	
	302		597		53	84,5	50	

Material Identification / Identification Matériel / Materialidentifikation

Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht		Lot Nr N° Lot Los Nr	Weight Poids Gewicht
	Kg			Kg			Kg			Kg
0616150 6197L	5980									

Number of lots / Nombre de lots / Bundanzahl : 1

Total weight / Poids Total / Gesamt Gewicht [Kg] : 5980

The Inspector
Le Responsable
Der Werksachverständige

Alf Schreurs

 Correspondentieadres: Aperam Genk Swinnenwijerweg 5, Poort Genk 7523 3600 Genk, Belgium Tel. +32 (0)89 30 21 11		A04 MILL CERTIFICATE BS EN 10204/3.1 CERTIFICAT DE RECEPTION NF EN 10204/3.1 ABNAHMEPRUEFZEUGNIS DIN EN 10204/3.1										N-Nr-N 21K0022908-01 V01 A03																											
		A02 Certified acc.PED 2014/68/EU Annex I 4.3 by Certification Body 0036 of TÜV SÜD Industrie Service GmbH with cert.No.:314/2007/MUC.Renounced of counter signature agreed byTÜV SÜD (9/5/2007).Approved acc.AD 2000-Merkblatt W0/TRD 100 by TÜV SÜD Industrie Service GmbH.Confirmation letter from TÜVSÜD Industrie Service GmbH of 07/05/2010 about the uniformity of coils acc.AD2000 W2 4.1.1										Cert 24 6197L																											
A01 Tech.Req.:AD 2000 W2 -- AD 2000 W10 -- EN 13445-2		Z05																																					
A08 Manufacturer's works order number N° de la commande usine productrice Werksauftragsnummer 80679792/01-39416/GEF/01		Z03 Surveyor's mark Cachet de l'expert Stempel des Werkssachverstaendigen 		A06 Purchaser and/or consignee Client et/ou destinataire Besteller und/oder Empfaenger Aperam Stainless Belgium nv Bosdel 87 3600 GENK BELGIE						A07 Purchaser's order number N° de commande client Kundenbestellnummer 103330985																													
A09 Product - Produit - Erzeugnis COIL, COLD ROLLED, FINISH 2 B COIL, LAMINE A FROID, FINI 2 B COIL,KALTGEWALZT,GEGLUEHT+GEBEIZT,LEICHT NACHGEWALZT				A06 Customer article number N.article client Artikelnummer des Kunden ART019686						A09																													
B02 Steel designation Désignation de l'acier Stahlbezeichnung EN 10088-2-2014 1.4404 / 1.4401 EN 10028-7-2016 1.4404 / 1.4401 ASTM A 240-2020 TYPE 316L / 316 ASME SA 240-2019 TYPE 316L / 316 EN 10088-4-2009 1.4404 / 1.4401		Finish Présentation Ausfuehrung 2B 2B 2B 2B 2B		C70 Steelmaking process Mode d'élaboration de l'acier - Stahlherstellungsverfahren Prod.proces: Electric arc furnace - VOD/AOD - Continuous casting Proc.fabric.: Four à arc - VOD/AOD - Coulée continue Fertigungsablauf: Elektro-Ofen - VOD/AOD - Stranggussanlage						A09 Product delivery condition Etat de livraison du produit - Lieferzustand Solution Annealing Hypertrempe Lösungsglühen 1050 °C Forced air-water/air forcé-eau Geblaese Luft-Wasser																													
B04																																							
NACE MR 0175 / ISO 15156-1 / ISO 15156-3 -- NACE MR 0103 / ISO 17945 // CORR. TEST: ASTM A262-E: OK																																							
6197L																																							
Z06																																							
B07 Identification of the product Identification du produit - Identifizierung des Erzeugnisses MELTED IN BELGIUM, MADE IN BELGIUM		Dimensions Dimensions - Abmessungen Thickness B09 Epaisseur - Staerke 6.00 mm						B10 Width Largeur - Breite 1500.00 mm		B11 Length Longueur - Laenge		B08 Number of pieces Nb de pièces - Stueckzahl 1																											
Coil n. N.Bobine - Band Nr. 10805243		Heat n. N.Coulée - Schmelz Nr. 108052								B13 Net weight Poids net - netto Gewicht 5980 KG																													
CHEMICAL ANALYSIS - ANALYSE CHIMIQUE - CHEMISCHE ZUSAMMENSETZUNG																																							
		C	Si	Mn	Ni	Cr	Mo	Ti	N	S	P	Cu	Co																										
Required -Exigé %mini Anforderung. %maxi		0.030	0.75	2.00	10.00 13.00	16.50 18.00	2.00 2.50		0.100	0.015	0.045																												
Cast Analysis Analyse coulée Analyse Schmelze		0.023	0.52	1.30	10.09	16.56	2.03		0.040	0.002	0.035	0.42	0.280																										
		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86																						
Positive material identification carried out : OK Tests de vérification de la conformité de la nuance fournie : OK Verwechslungpruefung wurde durchgefuehrt : OK																																							
C04																																							
C93																																							
D52																																							
Location (1)		MECHANICAL PROPERTIES - PROPRIETES MECANIKES - MECHANISCHE WERTE										EN ISO 6892-1 B / A-SA 370																											
		Room temperature - Température ambiante - Raumtemperatur										Test temperature (°C) :																											
Direction (2)		Yield or proof strength Limite d'élasticité Dehngrenze MPa				Tensile Strength Résistance à la traction Zugfestigkeit MPa		Elongation after fracture Allongement après rupt. Bruchdehnung %		Hardness Dureté Haerte		Yield or proof strength Limite d'élasticité Dehngrenze MPa		Tensile str. Résist. MPa Zugfestigkeit		Elongation % Allongement. Bruchdehnung																							
		Required Exigé Anforderung		mini maxi		Rp0.2%		Rp1%		Rm		A5		50mm		HRBW		Rp0.2%		Rp1%		Rm		A5															
1		T		Obtained Obtenu Ergebnisse		302		339		597		54		53		95 85		C16		C17		C18		C19															
2																																							
Impact strength test Essai de résilience Kerbschlagzaehigkeitstest				Corrosion test Test de corrosion Korrosionstest				E0.2(T)/R(T) %																															
C40				C44				50				C50				C51				C52				C53				C54				C55				C05			
C42								EN ISO 3651/2 - A:OK				D51				Internal cleanliness:				A:				B:				C:				D:				C57			
Location of the sample (1) Emplacement de l'échantillon Lage des Probenabschnittes 1. Front - Début - Anfang 2. Back - Fin - Ende 3. Middle - Milieu - Mitte						The delivery is in accordance with the order La fourniture est conforme aux exigences de la commande Die lieferung entspricht den Bestellbedingungen						Z01						Organisation inspection Organisme et/ou service contrôle Ueberwachsungsabteilung						A05															
						Packing list Avis d'expédition Lieferschein/Nummer						2021039743-100414						A10						Quality Department															
Direction of the test pieces (2) Orientation des éprouvettes Probenrichtung T. Transverse - Travers - Quer L. Longitudinal - Long - Laengs						Marking, inspection and measurement : without objection Contrôle de marquage, d'aspect et de dimensions : satisfaisants Pruefung der Stempelung, des Oberflaechenaspekts und der Abmessungen : ohne Beanstandung						D01						9/6/2021						The inspector Le responsable Der Werkssachverstaendige						Z02									

MILL TEST CERTIFICATE

4500621839

Cert 25



DKC Pohang

H.O/FACTORY : Tel:82-54-245-3064

SEOUL OFFICE : Tel:82-2-3016-2845

BUSAN OFFICE : Tel:82-51-315-9122

HOT-ROLLED STAINLESS STEEL PLATE

EN 10204 3.1

Location: 66, Gohyeon-Gil 988Beon-Gil, Cheonghe-Myeon, Buk-Gu, Pohang, Kyung Buk,

Mit Zustimmung des TÜV-Rheinland Industrie Service GmbH

ISSUE DATE: 2020-12-07

We hereby certify that the material described above has been tested complies with the terms of the order contract

Customer 주식회사 포스코인터내셔널	Article HOT-ROLLED STAINLESS STEEL PLATE	Certificate No. 20201207-25311-1-022	7 / 8
State of delivery SOLUTION TREATED	Works No. 201007012 P/N No.	Marking Brand of the manufacture DK Corporation	Works Inspector's stamp A

Melting-process : A.O.D	Technical requirements/demand AD2000-W0/W2/W10 PED2014/68/EU	Intergranular corrosion test EN ISO 3651-2A : GOOD
Heat treatment : Min 1040 °C Water coiling		

Visual inspection and dimensional check : GOOD Identification test : WITHOUT COMPLAINTS

Specification	Edition	Addenda	Grade	Material-UNS designation	Finish
EN 10028-7	2016		1.4404/1.4401	X2-5CrNiMo17-12-2	1D
EN 10088-2	2014				1D
ASTM A240M/480M	19/19a				
ASME SEC II SA240M/480M	2019				
NACE MR0175 & ISO 15156-3					

No.	Bundle No.	Heat No.	Plate No.	Quantity	Dimension (mm)			Weight (kg)	ASTM E112
					Thickness	Width	Length		Grain size
25	2011-0202	SD48392	17PC878906-1-02	1	25.000	2000	6000	2,400	
26	2011-0464	SD48392	17PC878908-1-02	1	20.000	2000	6000	1,920	
27	2011-0341	SD48389	17PC878927-1-01	1	20.000	1500	6000	1,440	
28	2011-0340	SD48389	17PC878928-1-01	1	20.000	1500	6000	1,440	

Tolerances on dimension, shape and mass	EN ISO 18286 A/N	EN 10029 class B/N	ASTM A480/A480M
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No.	Heat No.	Division	Chemical composition (%)													
			Cont	C	Si	Mn	P	S	Ni	Cr	N	Mo	Co	Cu	Ti	Nb
			Max	0.030	1.00	2.00	0.045	0.015	13.00	18.50	0.100	2.50				
			Min						10.00	16.50		2.00				
25	SD48392	L		0.025	0.50	1.26	0.029	0.003	10.08	16.68	0.069	2.05	0.21	0.42		
26	SD48392	L		0.025	0.50	1.26	0.029	0.003	10.08	16.68	0.069	2.05	0.21	0.42		
27	SD48389	L		0.023	0.50	1.30	0.030	0.003	10.03	16.62	0.067	2.04	0.24	0.30		
28	SD48389	L		0.023	0.50	1.30	0.030	0.003	10.03	16.62	0.067	2.04	0.24	0.30		

Mechanical tests

No.	Plate No	Specimen			Tensile test : EN10002-1 (1N/mm ² =1MPa)								Impact test : EN10045-1					Test temperature	Hardness HRBW
					Dim's of specimen		Yield point Proof stress		Tensile Strength	Elongation %		Ra %	Energy of impact(J)						
		Loca tion	Direc tion	Positi on									Thick (mm)	Width (mm)	N/mm2		As		
					Rp0.2	Rp1.0	Rm	Values											
							720												
					210	250	520		45	1st	2nd				3rd	Avg			
25	17PC878906-1-02	T	C	1/4t		14.03	261	320.1	597.9	54.4	56.6			10	223.4	215.6	217.6	218.5	RT
		B																	
26	17PC878908-1-02	T	C	1/4t	20.7	25.06	242.8	295.4	566.5	61.2	73.3		10	244	247	247.9	247	RT	78.4
		B																	
27	17PC878927-1-01	T	C	1/4t	20.5	25.01	239.9	294.4	561.8	62.3	75.3		10	233.2	234.2	240.1	236.2	RT	80.5
		B																	
28	17PC878928-1-01	T	C	1/4t	20.5	25.01	239.9	294.4	561.8	62.3	75.3		10	233.2	234.2	240.1	236.2	RT	80.5
		B																	

Ultrasonic test		Manufacture Info.
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Remarks	Mercury Free, No weld repair statement	DK Corporation
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NO WELD REPAIRS		Works Inspector
-----------------	--	-----------------

Direction : L = Longitudinal	C = Transverse	Temp : RT = Room temperature
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Location : T = Top	B = Bottom	
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Division : L = Ladle analysis	P = Product analysis	
-------------------------------	----------------------	--

THANK YOU FOR USING ALWAYS DK Corporation.

Business Unit / QCM

BA Quarto Plate, Quarto Plate Europe

Date Datum Date
19-Mar-2021

Load, Ladung, Charge No
220748

Acknowledged ID, Bestätigung, Commande ID
360021137

Your ref., Ihre Ref., Votre ref

Bestellung 6789

Buyer, Besteller, Acheteur

HW-INOX GMBH
KAISERSWERTHERSTRASSE 113
40880, RATINGEN
TYSKLAND

Consignee, Empfänger, Lieu de livraison

HW-INOX GmbH

Mark of Manufacturer
Zeichen des Lieferwerkes
Signe de producteur



Process
Erschmelzungsart
Mode de fusion

E+AOD

Inspector's stamp
Zeichen des Sachverständigen
Poinçon de l'expert



Requirements, Anforderungen, Exigences

AD 2000 W2, W10 & EN10028-7, PED 2014/68/EU
EN 10088-2:14
EN 10088-4:2009
ASME SA-240M Code Sect. II. Part A:2019
NACE MR0103 / ISO 17945:2015
ASTM A240M / NACE MR0175/ ISO 15156-3:2015
Zusatz Anforderung, siehe "Weitere Information"

Grade, Werkstoff, Nuance

1.4401 316
1.4404 316L

Product, Erzeugnisform, Produit

Rostfreier Stahl, warmgewalzt, Blech, 1D/Nr.1, Besäumt

Line Reihe Ligne	Item Position Poste	Heat-Lot No Schmelze-Lot Nr Coulée n° - Lot No	Size Abmessungen Dimensions	Pieces Stückzahl Nombre	Quantity/unit, Menge/Einheit, Quantité/Unité
1	11	201301-409234:0	20,0 X 2500,0 X 6000,0 mm	1	

Plate No, Blech Nr, Tôle No
1 0539 3401

Chemical composition - Chemische Zusammensetzung - Composition chimique %
Heat - Schmelze - coulée No

	C	Si	Mn	P	S	Cr	Ni	Mo	N					
Min						16.5	10.0	2.00						
Max	0.030	0.75	2.00	0.045	0.015	18.0	13.0	2.50	0.10					
201301	0.017	0.49	1.49	0.026	0.002	17.0	10.1	2.04	0.05					

Distribution	Richt. T = Quer L = Längs	Ort F = Kopf B = Fuss	Form P = Flach C = Rund	Lage 1 = Mitte 2 = Oberflächennah 3 = Norm 4 = 1/4 der Dicke
Certificate via e-Services				

Test results - Prüfergebnisse - Résultats des essais (1N/mm² = 1MPa)

Mechanische Eigenschaften

Zugversuch/Härteprüfung Rockwell B

Plate-no	Direct.	Top/Bot	Location	Form	Temp. °C	Rp 0,2 MPa	Rp 1,0 MPa	Rm MPa	A5 %	A50 %	HRB
Min						220	260	520	45	40	
Max								670			95
3401	T	F	2	P	20	282	315	572	59	64	80

Kerbschlagarbeit Charpy (V-kerb) EN ISO 148-1

Plate-no	Direct.	Top/Bot	Location	Form	Temp. °C	Wert1 J	Wert2 J	Wert3 J	Mittelwert J
3401	T	F	2	P	20	232	249	249	243

Korrosionsprüfung

EN ISO 3651-2 Methode A

Plate-no	Ergebnis
3401F	OK

Other Information

Bei 1050°C lösungsgeglüht und in Wasser abgeschreckt.
Ausmessung, Besichtigung und Verwechslungsprüfung PMI: ohne Beanstandung
Überprüft nach AD 2000-Merkblatt W0 und Zertifiziert nach
Druckgeräete-Richtlinie 2014/68/EU durch
TUEV NORD; notifizierte Stelle, Kennnr. 0045

The results comply with the Requirements of the order - Die gestellten Anforderungen sind erfüllt - Les résultats sont conformes aux exigences de la commande



EN 10204 - 3.1

21031582-DE-0

Business Unit / QCM

BA Quarto Plate, Quarto Plate Europe

Date Datum Date

19-Mar-2021

Load, Ladung, Charge No

220748

Acknowledged ID, Bestätigung, Commande ID

360021137

Bauprodukten-Richtlinie (305/2011/EU)
The Declaration of Performance (DoP), see www.outokumpu.com
Dieses Material entspricht im Lieferzustand NACE MR0175/ISO 15156
Dieses Material entspricht im Lieferzustand NACE MR0103/ISO 17945

Zusatz Prüfung:
Kerbschlagarbeit Charpy (V-kerb) EN ISO 148-1: Wert (J); Mittelwert (J)

Tolerance	Standard	Klasse
Ebenheitstoleranzen	EN 18286/A480/M/EN 10029	ISO 18286 N/A480/M/EN 10029 N
Länge	EN 18286/A480/M/EN 10029	ISO 18286 A/A480/M/EN 10029
Dicke	EN 18286/A480/M/EN 10029	ISO 18286/A480/M/EN 10029 B
Breite	EN 18286/A480/M/EN 10029	ISO 18286 A/A480/M/EN 10029

The results comply with the requirements of the order - Die gestellten Anforderungen sind erfüllt - Les résultats sont conformes aux exigences de la commande

Outokumpu Stainless AB
BA Quarto Plate, Quarto Plate Europe
SE - 693 81 DEGERFORS
SWEDEN
Regoffice: SWEDEN

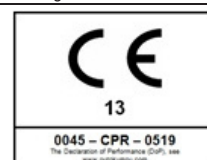
V.A.T no: SE556001874801

, Regno: 556001-8748

Computer generated original
Quality Inspector

Liselotte Andersen

Liselotte Andersen



Business Unit / QCM

BA Quarto Plate, Quarto Plate Europe

Date Datum Date

19-Mar-2021

Load, Ladung, Charge No

220748

Acknowledged ID, Bestätigung, Commande ID

360021137

Your ref., Ihre Ref., Votre ref

Bestellung 6789

Buyer, Besteller, Acheteur

HW-INOX GMBH
KAISERSWERTHERSTRASSE 113
40880, RATINGEN
TYSKLAND

Consignee, Empfänger, Lieu de livraison

HW-INOX GmbH

Mark of Manufacturer
Zeichen des Lieferwerkes
Signe de producteur



Process
Erschmelzungsart
Mode de fusion

E+AOD

Inspector's stamp
Zeichen des Sachverständigen
Poinçon de l'expert



Requirements, Anforderungen, Exigences

AD 2000 W2, W10 & EN10028-7, PED 2014/68/EU
EN 10088-4:2009
EN 10088-2:14
ASME SA-240M Code Sect. II. Part A:2019
NACE MR0103 / ISO 17945:2015
ASTM A240M / NACE MR0175/ ISO 15156-3:2015
Additional requirement, see "Other information"

Grade, Werkstoff, Nuance

1.4401 316
1.4404 316L

Product, Erzeugnisform, Produit

Stainless steel hot rolled, Plate, 1D/No.1, Cut edge

Line Reihe Ligne	Item Position Poste	Heat-Lot No Schmelze-Lot Nr Coulée n° - Lot No	Size Abmessungen Dimensions	Pieces Stückzahl Nombre	Quantity/unit, Menge/Einheit, Quantité/Unité
1	11	201301-409234:0	20,0 X 2500,0 X 6000,0 mm	1	

Plate No, Blech Nr, Tôle No
1 0539 3401

Chemical composition - Chemische Zusammensetzung - Composition chimique %
Heat - Schmelze - coulée No

	C	Si	Mn	P	S	Cr	Ni	Mo	N					
Min						16.5	10.0	2.00						
Max	0.030	0.75	2.00	0.045	0.015	18.0	13.0	2.50	0.10					
201301	0.017	0.49	1.49	0.026	0.002	17.0	10.1	2.04	0.05					

Distribution

Certificate via e-Services

Direct.
T = Transverse
L = Longitudinal
Top/Bot
F = Front
B = Back
Form
P = Flat
C = Round
Location
1 = Center
2 = Close to Surface
3 = Standard
4 = At 1/4 of thickness

Test results - Prüfergebnisse - Résultats des essais (1N/mm² = 1MPa)

Mechanical properties

Tensile testing/Hardness Rockwell B

Plate-no	Direct.	Top/Bot	Location	Form	Temp. °C	Rp 0,2 MPa	Rp 1,0 MPa	Rm MPa	A5 %	A50 %	HRB HRB
Min						220	260	520	45	40	
Max								670			95
3401	T	F	2	P	20	282	315	572	59	64	80

Charpy impact test (V-notch) EN ISO 148-1

Plate-no	Direct.	Top/Bot	Location	Form	Temp. °C	Value1 J	Value2 J	Value3 J	Average J
3401	T	F	2	P	20	232	249	249	243

Corrosion

EN ISO 3651-2 Method A

Plate-no Result
3401F OK

Other Information

Solution annealed at 1050°C and Quenched in water.
Dimensional control, visual inspection and grade check (PMI): Approved
Approved acc. to AD2000-Merkblatt W0 and certified acc. to
Pressure Equipment Directive (2014/68/EU) by
TUEV NORD, notified body, reg.no. 0045

The results comply with the Requirements of the order - Die gestellten Anforderungen sind erfüllt - Les résultats sont conformes aux exigences de la commande



EN 10204 - 3.1

21031582-EN-0

Business Unit / QCM

BA Quarto Plate, Quarto Plate Europe

Date Datum Date

19-Mar-2021

Load, Ladung, Charge No

220748

Acknowledged ID, Bestätigung, Commande ID

360021137

Construction Products Regulation (305/2011/EU)
The Declaration of Performance (DoP), see www.outokumpu.com
Material conforms to NACE MR0175/ISO 15156 in supplied condition
Material conforms to NACE MR0103/ISO 17945 in supplied condition

Additional testing:
Charpy impact test (V-notch) EN ISO 148-1: Value (J); Average (J)

Tolerance	Standard	Class
Flatness tolerance	EN 18286/A480/M/EN 10029	ISO 18286 N/A480/M/EN 10029 N
Length	EN 18286/A480/M/EN 10029	ISO 18286 A/A480/M/EN 10029
Thickness	EN 18286/A480/M/EN 10029	ISO 18286/A480/M/EN 10029 B
Width	EN 18286/A480/M/EN 10029	ISO 18286 A/A480/M/EN 10029

The results comply with the requirements of the order - Die gestellten Anforderungen sind erfüllt - Les résultats sont conformes aux exigences de la commande

Outokumpu Stainless AB
BA Quarto Plate, Quarto Plate Europe
SE - 693 81 DEGERFORS
SWEDEN
Regoffice: SWEDEN

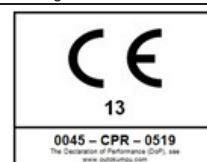
V.A.T no: SE556001874801

, Regno: 556001-8748

Computer generated original
Quality Inspector

Liselotte Andersen

Liselotte Andersen



Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 7364

Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Plate(s)

Commande / Poste - Internal order - Werksbestellung

1110208 / 000070

Bordereau de livraison - Delivery note - Lieferungsdocument

80409415

#010 - PRODUITS LIVRES - DELIVERED PRODUCTS - DELIEFERTEN GEGENSTÄNDE

Nuance - Grade - Werkstoff
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)
UNS S31600 (316)
UNS S31603 (316L)
UNS S31600 (316)
UNS S31603 (316L)
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)

Selon norme - According to - Entsprechend
EN 10088-2:2014
EN 10088-2:2014
ASTM A 240/M ED.2020a
ASTM A 240/M ED.2020a
ASME IIA ED.2021 SA 240/M
ASME IIA ED.2021 SA 240/M
EN 10028-7:2016+AD2000W2+ADW10
EN 10028-7:2016+AD2000W2+ADW10
EN 10088-4:2009
EN 10088-4:2009

Epaisseur - Thickness - Dicke 18.00 mm

Largeur - Width - Breite

2,000 mm

Longueur - Length - Länge

4,000 mm

Spécification - Specification - Spezifikation

HW INOX requirements 1.4404 rev.7 from 18/10/2018
Acc to A/SA 480



<https://eservices.industeel.be>

Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand

Hypertrempe à l'air (1050 °C - 1 min/mm) - Solution annealed and air quenched - Luft vergütet

Procédé d'élaboration - Melting process - Erschmelzungsart

Electric-arc furnace - VOD - Finish n° 1 - 1D - HRAP

Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.	Nbre Nbr Stz	N° produit Product Erzeugnis	N° de coulée Ladle nr. Schmelze nr.	N° de lot de contrôle Inspection lot nr. Prüflos nr.
01	466699002	14061	466699.5001	01	466699003	14061	466699.5001

Total - Total - Gesamtzahl 002

This supply complies with the main requirements of PED 2014/68/EU relating to the basis materials regardless of the specific terms of service.



1148
06

20060925

EN 10088-4:2009

Produit laminé à chaud en acier de construction
Usages prévus: Construction de bâtiments et Génie civil
X5CrNiMo17-12-2 (1.4401)
X2CrNiMo17-12-2 (1.4404)

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

STEPHANIE WALLEMACQ
10/08/2022
Gestionnaire Commande
Mill inspector
Werksbeauftragte

Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 7364

Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Plate(s)

Commande / Poste - Internal order - Werksbestellung

1110208 / 000070

Bordereau de livraison - Delivery note - Lieferungsdocument

80409415

#020 - ANALYSE CHIMIQUE DE COULEE - HEAT CHEMICAL COMPOSITION - SCHMELZE CHEMISCHE ZUSAMMENSETZUNG

	C	Mn	P	S	Si	Cu	Ni	Cr	Mo
	%	%	%	%	%	%	%	%	%
Min.							10.000	16.500	2.000
14061	0.024	1.818	0.0309	0.0010	0.338	0.353	10.001	17.034	2.020
Max.	0.030	2.000	0.0450	0.0150	0.750	0.750	13.000	18.000	2.500
	Nb	Ti	N	Co	Al				
	%	%	%	%	%				
Min.									
14061	0.006	0.001	0.0284	0.147	0.006				
Max.	0.100	0.100	0.1000						

#041 - PMI - POSITIVE MATERIAL IDENTIFICATION - VERWECHSLUNGSPRÜFUNG

Non confusion de matière - Positive material identification -

PMI Conform

Résultat du contrôle - Examination result - Prüfergebnis

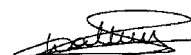
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschritten

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungsanforderungen entsprechen.

STEPHANIE WALLEMACQ
 10/08/2022
 Gestionnaire Commande
 Mill inspector
 Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 7364

Projet - Project - Projekt

Industeel Belgium

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

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ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Plate(s)

Commande / Poste - Internal order - Werksbestellung

1110208 / 000070

Bordereau de livraison - Delivery note - Lieferungsdocument

80409415

#072 ESSAIS MECANIKES - MECHANICAL TESTS - MECHANISCHE PRÜFUNGEN

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

Brinell HB							HB10 Ind	HB10 Ind	HB10 Ind	HB10 Aver								
Brinell HB - Brinell HB																		
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	HB	HB	HB	HB							
							Min											
							Max	217	217	217	217							
466699.5001	000	T3/4	PSS	20	°C			166	167	168	167							

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0103 / ISO 17945																		
NACE MR0103 / ISO 17945 - NACE MR0103 / ISO 17945																		
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac												
466699.5001	000	T3/4	PSS	20	°C													

Test result HRC < 22

DURETE SUR COUPON - HARDNESS ON SAMPLE - HÄRTE AUF COUPON

NACE MR0175 / ISO 15156-3																		
NACE MR0175 / ISO 15156-3 - NACE MR0175 / ISO 15156-3																		
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac												
466699.5001	000	T3/4	PSS	20	°C													

Test result HRC < 22

TRACTION A L' AMBIANTE - ROOM TEMPERATURE TENSILE TEST - ZUGVERSUCH BEI RT

Traction							Rp 0,2%	Rp1%	Rm	A Lo=50mm	A Lo=5,65V So							
Tensile test - Zugversuch																		
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	MPa	MPa	MPa	%	%						
							Min	220	260	520	40	45						
							Max			670								
466699.5001	000	T3/4	PST	20	°C			307	353	566	60	52						

RESILIENCE - TOUGHNESS - KERBSCHLAGZÄHIGKEIT

KCV EN 10X10mm							Energy Ind	Energy Ind	Energy Ind	Energy Ave								
KCV EN 10X10mm - KCV EN 10X10mm																		
N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac	Uni	J	J	J	J							
							Min	42	42	42	60							
							Max											
466699.5001	000	T3/4	PST	20	°C			287	272	271	277							

Loc 3/4 Trois-Quart - 3/4 Width - 3/4 Breite

Loc T Tête - Top - Kopf

Epr. Epaisseur P Peau - Rolled Surface - Walzfläche

Epr. Face S Supérieure - Upper face - obere

Epr. Sens S Standard - Standard - Standard

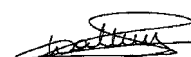
Epr. Sens T Travers - Transverse - Quer

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

We hereby certify that the above mentioned products are complying with the order requirements.

Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

STEPHANIE WALLEMACQ
10/08/2022
Gestionnaire Commande
Mill inspector
Werksbeauftragte



CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004
Inspection Certificate 3.1 / EN 10204:2004
Prüfbescheinigung 3.1 / EN 10204:2004

Numéro de document
Document number
Bescheinigungsnummer
2022-118517

Rev 00

Page
Sheet
Seite
004
/ 007

Cert 26



ArcelorMittal

Client - Purchaser - Besteller
HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag
7364

Projet - Project - Projekt
Industeel Belgium
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018
ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis
Plate(s)

Commande / Poste - Internal order - Werksbestellung
1110208 / 000070

Bordereau de livraison - Delivery note - Lieferungsdokument
80409415

Etat	000	Etat thermique de livraison - Heat treatment state of delivery - Wärmebehandlung Lieferzustand
Epr.Ep./Face/Sens	PSS	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Standard - Standard - Standard
Epr.Ep./Face/Sens	PST	Peau - Rolled Surface - Walzfläche / Supérieure - Upper face - obere / Travers - Transverse - Quer

#082 ESSAIS TECHNOLOGIQUES - TECHNOLOGICAL TESTS - TECHNOLOGISCHE PRÜFUNGEN

CORROSION - CORROSION - KORROSION

Sensibilisé - Sensitized - Sensibilisiert

EN ISO 3651-2 A

Test description - Prüfbeschreibung

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac												
466699.5001	001	T3/4	SSS	20	°C													

Test result

Satisfactory as per specification

CORROSION - CORROSION - KORROSION

Sensibilisé - Sensitized - Sensibilisiert

ASTM A262 E

ASTM A262 E - ASTM A262 E

N° lot QM	Etat	Loc	Epr.	T°	Uni	Mac												
466699.5001	002	T3/4	SSS	20	°C													

Test result

Satisfactory as per specification

Loc	3/4	Trois-Quart - 3/4 Width - 3/4 Breite
Loc	T	Tête - Top - Kopf
Epr. Epaisseur	S	Standard - Standard - Standard
Epr. Face	S	Supérieure - Upper face - obere
Epr. Sens	S	Standard - Standard - Standard
Etat	001	SENSI - Sensitization (From 350 °C at 220 °C/h to 700 °C (-10/+10) (min: 30 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Etat	002	SENSI - Sensitization (From 350 °C at 220 °C/h to 675 °C (-25/+0) (min: 60 min) - Down to 350 °C at 220 °C/h - 1 Cycle) - SENSI
Epr.Ep./Face/Sens	SSS	Standard - Standard - Standard / Supérieure - Upper face - obere / Standard - Standard - Standard

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

STEPHANIE WALLEMACQ
10/08/2022
Gestionnaire Commande
Mill inspector
Werksbeauftragte



Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 7364

Projet - Project - Projekt

Industeel Belgium

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Plate(s)

Commande / Poste - Internal order - Werksbestellung

1110208 / 000070

Bordereau de livraison - Delivery note - Lieferungsdocument

80409415

#101 - DIMENSIONNEL - DIMENSIONAL CHECK - MASSKONTROLLE

Cahier des charges Longueur - Specification Length -

ISO 18286 CLASSE A

Cahier des charges Largeur - Specification Width -

ISO 18286 CLASSE A

Cahier des charges Epaisseur - Specification Thickness -

ISO 18286

Résultat du contrôle - Examination result - Prüfergebnis

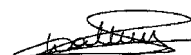
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.

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STEPHANIE WALLEMACQ
10/08/2022
Gestionnaire Commande
Mill inspector
Werksbeauftragte



CERTIFICAT DE RECEPTION 3.1 / EN 10204:2004 Inspection Certificate 3.1 / EN 10204:2004 Prüfbescheinigung 3.1 / EN 10204:2004		Numéro de document Rev 00 Document number Bescheinigungsnummer 2022-118517		Page Sheet Seite 006 / 007	Cert 26  ArcelorMittal
Client - Purchaser - Besteller		HW-INOX GMBH			
Référence client - Purchase order - Kaufauftrag		7364			
Projet - Project - Projekt					
Industeel Belgium		ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018			
Site : Rue de Châtelet 266 6030 Marchienne-au-Pont		ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018			
Produit - Product - Erzeugnis				Plate(s)	
Commande / Poste - Internal order - Werksbestellung				1110208 / 000070	
Bordereau de livraison - Delivery note - Lieferungsdocument				80409415	

#111 - VISUEL-ETAT DE SURFACE - VISUAL EXAMINATION-SURFACE CONDITION - SICHTPRÜFUNG-OBERFLÄCHENZUSTAND

Norme applicable 1 - Applicable standard 1 - EN 10163 CL.B S-CL.3

Résultat du contrôle - Examination result - Prüfergebnis

Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

Nous certifions que les produits ci-dessus sont conformes aux prescriptions de la commande.
We hereby certify that the above mentioned products are complying with the order requirements.
Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestellungsvorschriften entsprechen.

		STEPHANIE WALLEMACQ 10/08/2022 Gestionnaire Commande Mill inspector Werksbeauftragte 
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Client - Purchaser - Besteller HW-INOX GMBH

Référence client - Purchase order - Kaufauftrag 7364

Projet - Project - Projekt

Industeel Belgium

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + MAQ REV 00 du 04/05/2018

Site : Rue de Châtelet 266 6030 Marchienne-au-Pont

ISO 9001 (Cert 2019/86320.3, Valid 02/06/2023) + QAM REV 00 of 04/05/2018

Produit - Product - Erzeugnis

Plate(s)

Commande / Poste - Internal order - Werksbestellung

1110208 / 000070

Bordereau de livraison - Delivery note - Lieferungsdocument

80409415

#171 - PLANEITE - FLATNESS - EBENHEIT

Cahier des Charges Planéité - Flatness standard - Ebenheit norm

ISO 18286 CLASSE N - TYPE B

Résultat du contrôle - Examination result - Prüfergebnis

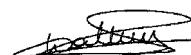
Conforme aux spécifications précitées - Conforming to above specifications - Entspricht der vorgenannten vorschriften

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Wir bestätigen hiermit, dass die obengenannten Erzeugnisse den Bestimmungsvorschriften entsprechen.

STEPHANIE WALLEMACQ
10/08/2022
Gestionnaire Commande
Mill inspector
Werksbeauftragte



WELDING PROCEDURES

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

WELDING PROCEDURES SPECIFICATIONS

Client : BIODIESEL ARGENT II BV
 Drawings : A0072-5685B-0821

Prepared by:

Quality - Stefaan Holvoet

Validated by approved WPAR N°	Applied standard	Gr.N° / Material Type	Welding process	Joint type	Parent metal thickness (mm)	Range of diameter (mm)	Welding positions
WPS 02.2B							
03992 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	BW	3 - 5,2	≥ 500	PF
WPS 03.2B							
03993 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	15	BW	3 - 5,2	≥ 500	PC
WPS 04.3B							
03994 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	15	BW	3 - 7,3	≥ 500	PA
WPS 06.1B							
080561 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	135	FW	3 - 7,2	≥ 500	PB
WPS 06.2B							
080561 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	135	FW	3 - 7,2	≥ 500	PB
WPS 08.1B							
03998 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	BW	1,4 - 2,6	≥ 30	PC + PF
WPS 09B							
03999 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	BW	2,1 - 3,9	≥ 84	PC + PF
WPS 09.3B							
930303 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	BW	2,1 - 6	≥ 30	PC + PF



WELDING PROCEDURES SPECIFICATIONS

Client : BIODIESEL ARGENT II BV
Drawings : A0072-5685B-0821

Prepared by:


Quality - Stefaan Holvoet

Validated by approved WPAR N°	Applied standard	Gr.N° / Material Type	Welding process	Joint type	Parent metal thickness (mm)	Range of diameter (mm)	Welding positions
----------------------------------	---------------------	--------------------------	--------------------	---------------	--------------------------------	---------------------------	----------------------

WPS 17.2B

03998 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	FW	1,4 - 2,6	≥ 30	PB
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WPS 21.2B

120209 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	BW	3 - 8	≥ 110	PC
0119821 EUN	ISO 15614-1	8.1 / 1.4404	141	BW	3 - 9	≥ 25	PC

WPS 24B

930303 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	BW	3 - 6	≥ 30	PC + PF
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WPS 25.1B

930303 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	FW	3 - 6	≥ 30	PB
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WPS 25.2B

930303 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	FW	3 - 6	≥ 30	PB
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WPS 26B

930303 ADM	ISO 15614-1+AD HP 2/1	8.1 / 1.4404	141	FW	3 - 6	≥ 30	PB
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WELDING PROCEDURE SPECIFICATION

WPS n°: 02.2B

Page : 1 of 1

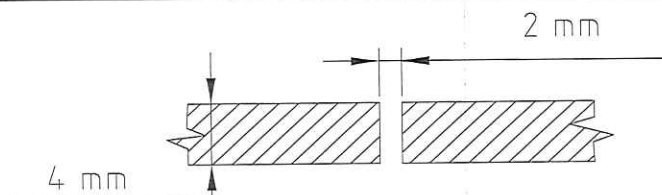
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	03992 ADM	9	3,2 to 4,4 mm	≥ 500 mm
ISO 15614-1 + AD HP 2/1	03992 ADM	8.1	3,0 to 5,2 mm	≥ 500 mm

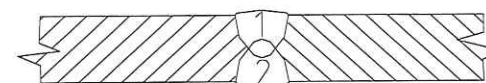
TECHNIQUE

Single or double side welding	: double side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 12 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PF	2	DC-	80	12	-	WC 20	3,2	I1	12	-	-	-	-
1	141	PF	2	DC-	120	12	-	WC 20	3,2	I1	12	-	-	-	-
2	141	PF	-	DC-	80	12	-	WC 20	3,2	I1	12	-	-	-	-

REMARKS : I1 = Argon Ar 99,99% / Layers 1 + 2 are simultaneous welded

Q. C. DEPT.

Signature

Date : 08-05-2009

HOLVRIEKA
QUALITY
CHRISTOPHE LOOF

INSPECTION AUTHORITY Signature

Date :

06/22 ATC

WELDING PROCEDURE SPECIFICATION

WPS n°: 03.2B

Page : 1 of 1

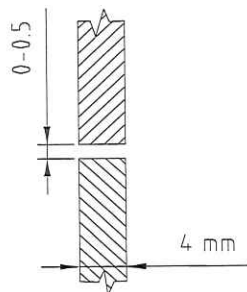
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	03993ADM	9	3,2 to 4,4 mm	≥ 500 mm
ISO 15614-1 + AD HP 2/1	03993 ADM	8.1	3,0 to 5,2 mm	≥ 500 mm

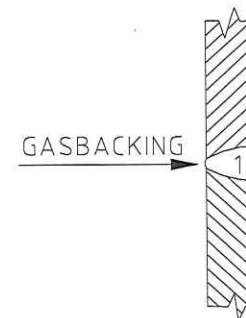
TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: G 19 12 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PC	1,6	DC-	80	12	-	WC 20	3,2	I1	12	-	-	-	-
1	15	PC	1,2	DC-	180	28	60	WC 20	4,2	I1	25	R1	6	I1	30

REMARKS : I1 = Argon Ar 99,99% - R1 = Argon/Hydrogen Ar/H2 95/5%

Q. C. DEPT.

Signature

Date : 08-05-2009

HOLVRIEKA
QUALITY
CHRISTOPHE LOOF

INSPECTION AUTHORITY Signature

Date :

06/22 ATC

WELDING PROCEDURE SPECIFICATION

WPS n°: 04.3B

Page : 1 of 1

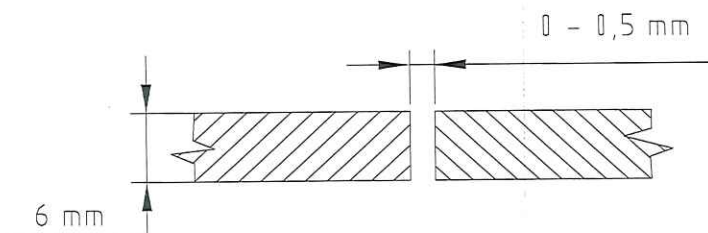
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	03994 ADM	9	4,8 to 6,6 mm	≥ 500 mm
ISO 15614-1 + AD HP 2/1	03994 ADM	8.1	3,0 to 7,3 mm	≥ 500 mm

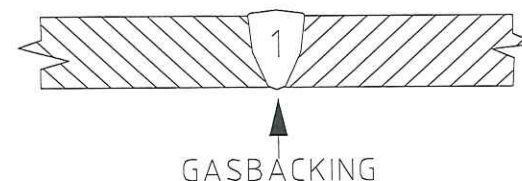
TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: G 19 12 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PA	1,6	DC-	80	12	-	WC 20	3,2	I1	12	-	-	-	-
1	15	PA	1,2	DC-	195	32	25	WC 20	4	I1	50	R1	12	I1	22

REMARKS : I1 = Argon Ar 99,99% - R1 = Argon/Hydrogen Ar/H2 95/5%

Q. C. DEPT.

Signature

Date : 08-05-2009

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QUALITY
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INSPECTION AUTHORITY Signature

Date :

WELDING PROCEDURE SPECIFICATION

WPS n°: 06.1B

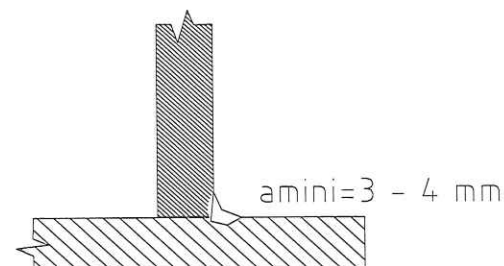
Page : 1 of 1

Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	080561 ADM	9	3,0 to 12,0 mm	≥ 500 mm
ISO 15614-1 + AD HP 2/1	080561ADM	8.1	3,0 to 7,2 mm	≥ 500 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: G 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design**Welding sequence**

Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode		Shielding gas		Backing gas	
								type	Ø mm	comp.	flow ltr/min	Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	12	-	-
1	135	PB	1,2	DC-	160	24	-	-	-	M12	12	-	-

REMARKS : I1 = Argon Ar 99,99%

M12 = Argon/Helium/Carbondioxide Ar/He/Co2 63/35/2 %

Q. C. DEPT.

Signature

Date : 08-05-2009

HOLVRIEKA
QUALITY
CHRISTOPHE LOOF

INSPECTION AUTHORITY Signature

Date :

06/02 [Signature]

WELDING PROCEDURE SPECIFICATION

WPS n°: 06.2B

Page : 1 of 1

Date : 05 / 2009

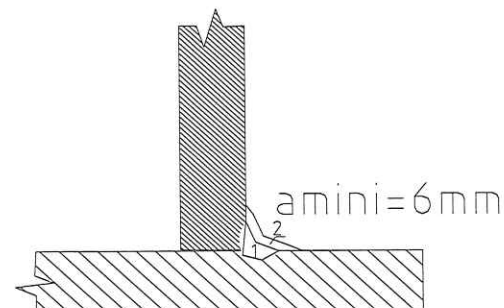
Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	080561ADM	9	3,0 to 12,0 mm	≥ 500 mm
ISO 15614-1 + AD HP 2/1	080561 ADM	8.1	3,0 to 7,2 mm	≥ 500 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: multiple pass	Interpass temperature max. (°C)	: 150
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: G 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design

Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	12	-	-
1	135	PB	1,2	DC-	160	24	-	-	-	M12	10 - 15	-	-
2	135	PB	1,2	DC-	160	24	-	-	-	M12	10 - 15	-	-

REMARKS : I1 = Argon Ar 99,99%

M12 = Argon/Helium/Carbondioxyde Ar/He/Co2 63/35/2 %

Q. C. DEPT.

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Date : 08-05-2009

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QUALITY
CHRISTOPHE LOOP

INSPECTION AUTHORITY Signature

Date :

06/12 2009
ATK

WELDING PROCEDURE SPECIFICATION

WPS n°: 08.1B

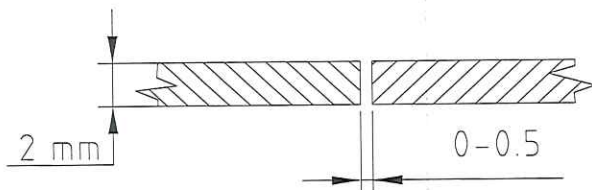
Page : 1 of 1

Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	03998 ADM	9	1,6 to 2,2 mm	30,0 to 120,0 mm
ISO 15614-1 + AD HP 2/1	03998 ADM	8.1	1,4 to 2,6 mm	≥ 30,0 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design**Welding sequence**

Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PC/PF	1,6	DC-	80	12	-	WC 20	3,2	I1	10	-	-	I1	9
1	141	PC/PF	1,6	DC-	80 - 120	12	-	WC 20	3,2	I1	10	-	-	I1	9

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

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Date : 08-05-2009

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Date :

WELDING PROCEDURE SPECIFICATION

WPS n° : 09.3B

Page : 1 of 1

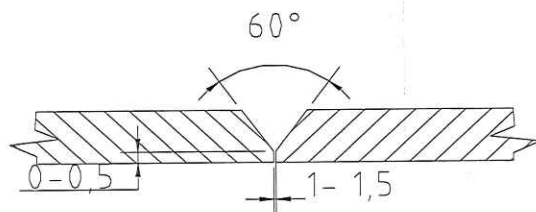
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	930303 ADM	9	3 to 6 mm	30 to 120 mm
ISO 15614-1 + AD HP 2/1	930303 ADM	8.1	2,1 to 6 mm	≥ 30 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: 150
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Electrode Ø mm	Shielding gas comp.	Shielding gas flow ltr/min	Plasma gas comp.	Plasma gas flow ltr/min	Backing gas Comp.	Backing gas flow ltr/min
Tack	141	PC/PF	1,6	DC-	60	12	-	WC 20	3,2	I1	10	-	-	I1	9
1	141	PC/PF	1,6	DC-	65	12	-	WC 20	3,2	I1	10	-	-	I1	9
2	141	PC/PF	1,6	DC-	65	12	-	WC 20	3,2	I1	10	-	-	I1	9

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

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Date : 06/22 ATK

WELDING PROCEDURE SPECIFICATION

WPS n° : 09B

Page : 1 of 1

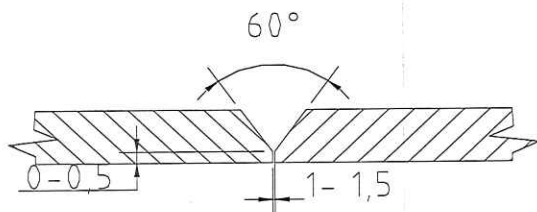
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	03999 ADM	9	2,4 to 3,3 mm	≥ 84 mm
ISO 15614-1 + AD HP 2/1	03999 ADM	8.1	2,1 to 3,9 mm	≥ 84 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Electrode Ø mm	Shielding gas comp.	Shielding gas flow ltr/min	Plasma gas comp.	Plasma gas flow ltr/min	Backing gas Comp.	Backing gas flow ltr/min
Tack	141	PC/PF	1,6	DC-	60	12	-	WC 20	3,2	I1	10	-	-	I1	9
1	141	PC/PF	1,6	DC-	65	12	-	WC 20	3,2	I1	10	-	-	I1	9

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

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Date : 08-05-2009

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Date :

WELDING PROCEDURE SPECIFICATION

WPS n°: 17.2B

Page : 1 of 1

Date : 05 / 2009

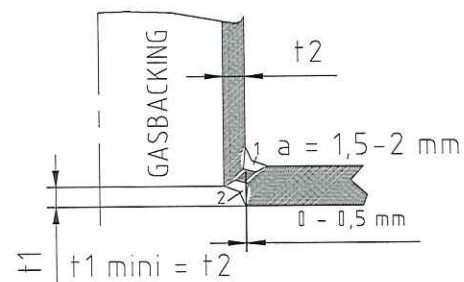
Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	03998 ADM	9	1,6 to 2,2 mm	30 to 120 mm
ISO 15614-1 + AD HP 2/1	03998 ADM	8.1	1,4 to 2,6 mm	≥ 30,0 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design

Welding sequence



PIPE WELDED TO PLATE

Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	10	-	-	-	-
1	141	PB	1,6	DC-	80 - 120	12	-	WC 20	3,2	I1	10	-	-	I1	9
2	141	PB	1,6	DC-	80 - 120	12		WC 20	3,2	I1	10	-	-	-	-

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

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Date :

WELDING PROCEDURE SPECIFICATION

WPS n°: 21.2B

Page : 1 of 1

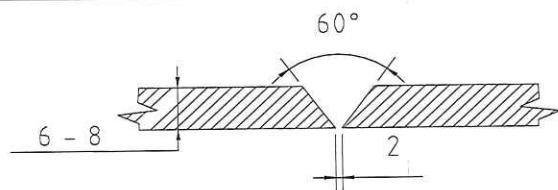
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
ISO 15614-1 + AD HP 2/1	120209 ADM	8.1	3,0 to 8,0 mm	≥ 110 mm
ISO 15614-1	0119821 EUN	8.1	3,0 to 9,0 mm	≥ 25 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 5
Single or multiple pass per side	: multiple pass	Interpass temperature max. (°C)	: 150
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



GASBACKING

Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PC	1,6	DC-	60	12	-	WC 20	3,2	I1	10	-	-	I1	10
1	141	PC	1,6	DC-	80 - 85	12	-	WC 20	3,2	I1	10	-	-	I1	10
2	141	PC	2,0	DC-	100	12	-	WC 20	3,2	I1	10	-	-	I1	10
3	141	PC	2,4	DC-	100	12	-	WC 20	3,2	I1	10	-	-	I1	10

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

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Date :

06/12 ATK [Signature]

WELDING PROCEDURE SPECIFICATION

WPS n°: 24B

Page : 1 of 1

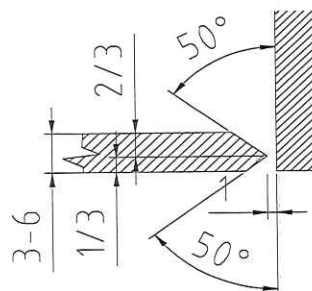
Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	930303 ADM + 120209 ADM	9	3 - 6 mm	≥ 30 mm
ISO 15614-1 + AD HP 2/1	930303 ADM	8.1	3 - 6 mm	≥ 30 mm

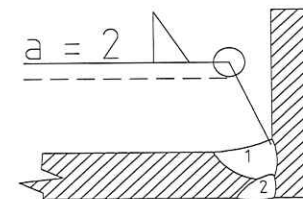
TECHNIQUE

Single or double side welding	: double side	Pre-heat temperature min (°C)	: 15
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: 150°C
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: yes	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design



Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PA	1,2	DC-	80	12	-	WC 20	3,2	I1	10	-	-	I1	9
1	141	PA	1,2	DC-	80 - 120	12	-	WC 20	3,2	I1	10	-	-	I1	9
2	141	PA	1,2	DC-	80 - 120	12	-	WC 20	3,2	I1	10	-	-	-	-

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

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Date :

06/02 2009

WELDING PROCEDURE SPECIFICATION

WPS n°: 25.1B

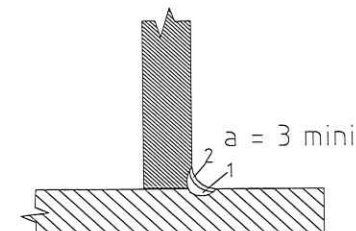
Page : 1 of 1

Date : 05 / 2009

Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	930303 ADM + 120209 ADM	9	3 - 6 mm	≥ 30 mm
ISO 15614-1 + AD HP 2/1	930303 ADM	8.1	3 - 6 mm	≥ 30 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 15
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design
Welding sequence


Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	10	-	-	-	-
1	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-
2	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

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Date :

WELDING PROCEDURE SPECIFICATION

WPS n°: 25.2B

Page : 1 of 1

Date : 05 / 2009

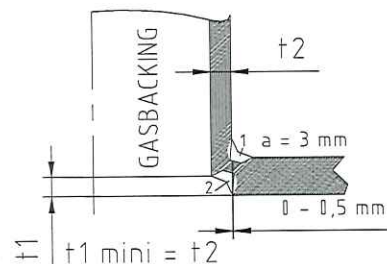
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PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	930303 ADM + 120209 ADM	9	3 - 6 mm	≥ 30 mm
ISO 15614-1 + AD HP 2/1	930303 ADM	8.1	3 - 6 mm	≥ 30 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 15
Single or multiple pass per side	: single pass	Interpass temperature max. (°C)	: -
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design

Welding sequence



PIPE WELDED TO PLATE

Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	10	-	-	-	-
1	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	I1	8
2	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

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CHRISTOPHE LOOF

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Date :

WELDING PROCEDURE SPECIFICATION

WPS n°: 26B

Page : 1 of 1

Date : 05 / 2009

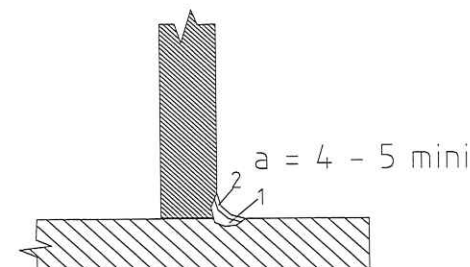
Parent Metal Specifications :		1.4404 / X2 CrNiMo 17 12 2 (316L)	1.4435 / X2 CrNiMo 18 14 3 (316L)	
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	930303 ADM + 120209 ADM	9	3 - 6 mm	≥ 30 mm
ISO 15614-1 + AD HP 2/1	930303 ADM	8.1	3 - 6 mm	≥ 30 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 15
Single or multiple pass per side	: multiple pass	Interpass temperature max. (°C)	: 150°C
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER316LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 2 3 L Si
Backing strip	: no	Werkstoff NR.	: 1.4430
Type backing strip	: n.a.		

Joint design

Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	10	-	-	-	-
1	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-
2	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

HOLVRIEKA
QUALITY
CHRISTOPHE LOOF

INSPECTION AUTHORITY Signature

Date :

WELDING PROCEDURE SPECIFICATION

WPS n°: 26A

Page : 1 of 1

Date : 05 / 2009

Parent Metal Specifications : 1.4301 / X5 CrNi 18 10 (304) 1.4307 / X2 CrNi 18 9 (304L)

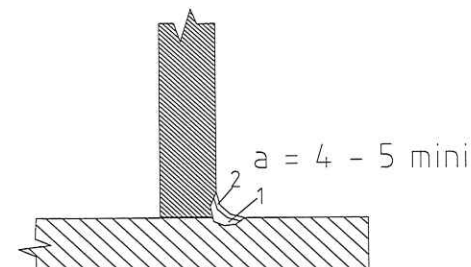
PQR Code / Standard	PQR N°	Material group	Qualified thickness range	Qualified Ø range
EN 288-3 + AD HP 2/1	930303 ADM + 120209 ADM	9	3 - 6 mm	≥ 30 mm
ISO 15614-1 + AD HP 2/1	930303 ADM	8.1	3 - 6 mm	≥ 30 mm

TECHNIQUE

Single or double side welding	: single side	Pre-heat temperature min (°C)	: 15
Single or multiple pass per side	: multiple pass	Interpass temperature max. (°C)	: 150°C
Initial and interpass cleaning	: brushing of grinding	Filler material brand	: AVESTA
Degreasing before cleaning	: yes	AWS classification	: ER308LSi
Root removed by grinding	: no	EN ISO 14343 spec.	: W 19 9 L Si
Backing strip	: no	Werkstoff NR.	: 1.4316
Type backing strip	: n.a.		

Joint design

Welding sequence



Layer n°	Weld. process	Weld. position	Filler mat. Ø mm	DC +/- DC -	Current range (A)	Voltage range (V)	Speed cm/min	Electrode type	Ø mm	Shielding gas comp.	flow ltr/min	Plasma gas comp.	flow ltr/min	Backing gas Comp.	flow ltr/min
Tack	141	PB	1,6	DC-	80	12	-	WC 20	3,2	I1	10	-	-	-	-
1	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-
2	141	PB	2,4	DC-	90 - 110	12	-	WC 20	3,2	I1	10	-	-	-	-

REMARKS : I1 = Argon Ar 99,99%

Q. C. DEPT.

Signature

Date : 08-05-2009

HOLVRIEKA
QUALITY
CHRISTOPHE LOOF

INSPECTION AUTHORITY Signature

Date : 06/02 2009

CERTIFICATION OF WELDERS

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³



WELDERS APPROVAL CERTIFICATES

Name	N°	Welding process	Plate / Pipe	Joint type	Range of thickness	Range of diameter	Welding positions	Cert. N°
------	----	-----------------	--------------	------------	--------------------	-------------------	-------------------	----------

WPS 02.2B

JEAN-MICHEL WAEGE	18	141	Plate & Pipe	BW	3 - 8 mm	$\varnothing \geq 75$ mm	PA, PC	21
JEAN-MICHEL WAEGE	18	141	Plate & Pipe	BW	3 - 8 mm	$\varnothing \geq 75$ mm	PA, PF	22
BENJAMIN DESMARETS	26	141	Plate & Pipe	BW	3 - 8 mm	$\varnothing \geq 75$ mm	PA, PF	6
BENJAMIN DESMARETS	26	141	Plate & Pipe	BW	3 - 8 mm	$\varnothing \geq 75$ mm	PA, PC	7

WPS 03.2B

CATRY RIK	19	15	Plate & Pipe	BW	3 - 14 mm	$\varnothing \geq 150$ mm	PA, PB, PC	30
VANDEVELDE LAURENS	16	15	Plate & Pipe	BW	3 - 14 mm	≥ 75 mm	PA, PB	16

WPS 04.3B

DELACHAPELLE ARNAUD		15	plasma TIG automatic			---	---	35
---------------------	--	----	----------------------	--	--	-----	-----	----

WPS 06.1B + WPS 06.2B

KANGALA KITIA	04	135	Plate & Pipe	FW	≥ 3 mm	≥ 150 mm	PA - PB	37
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WELDERS APPROVAL CERTIFICATES

Name	N°	Welding process	Plate / Pipe	Joint type	Range of thickness	Range of diameter	Welding positions	Cert. N°
------	----	-----------------	--------------	------------	--------------------	-------------------	-------------------	----------

WPS 08.1B + WPS 09B + WPS 9.3B + WPS 17.2B

DIMITROV ATANAS	25	141	Plate & Pipe	BW - FW	1,5 - 3 mm	13,7 - 27,4 mm	H-L045	25
TYULEV BOYKO		141	Plate & Pipe	BW	3 - 8 mm	≥ 25 mm	H-L045	22 289
PAVLOV EMIL		141	Plate & Pipe	BW	3 - 8 mm	≥ 25 mm	H-L045	22 290
MITKO CHANKOV		141	Plate & Pipe	BW - FW	3 - 8 mm	≥ 25 mm	H-L045	22 291
HAYDUTOV STOYAN		141	Plate & Pipe	BW - FW	1.5 - 3 mm	13,7 - 27,4 mm	H-L045	20 517
DIMITROV VASKO		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	20 652
DZHAGALOV RADOSLAV		141	Plate & Pipe	BW - FW	1,5 - 3 mm	13,7 - 27,4 mm	H-L045	20 920
STAMATOV ZLATKO		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	21 509
ROSEN IVANOV		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	22 387
DONCHO CHONGAROV		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	22 1029

WPS 21.2B + WPS 24B + WPS 25.1B + WPS 25.2B + WPS 26B + WPS26A

DIMITROV ATANAS	25	141	Plate & Pipe	BW - FW	3 - 8 mm	≥ 25 mm	H-L045	60
TYULEV BOYKO		141	Plate & Pipe	BW	3 - 8 mm	≥ 25 mm	H-L045	22 289
PAVLOV EMIL		141	Plate & Pipe	BW	3 - 8 mm	≥ 25 mm	H-L045	22 290
MITKO CHANKOV		141	Plate & Pipe	BW - FW	3 - 8 mm	≥ 25 mm	H-L045	22 291
HAYDUTOV STOYAN		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	20 517
DIMITROV VASKO		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	20 652
STOYANOV STOYAN		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	20 518
STAMATOV ZLATKO		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	21 509
ROSEN IVANOV		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	22 387
DONCHO CHONGAROV		141	Plate & Pipe	BW - FW	1.5 - 8 mm	≥ 13 mm	H-L045	22 1029



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WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: **NBN-EN- ISO 9606-1 ; 141(Simultaneouswelding) ; P ; BW ; FM5 ; S ; s=4.0 ; D=- ; PF ; bs**

Page 1 of 1

WPS Ref. (if applicable): **02.2A**

Inspection Authority: **Apragaz**

Welder's name: **(1)Desmet Gino Maurice
(2)Desmarests Benjamin**

Delegate: **Eng. G. Giellis**

Identification: Stamp : (1) 03
(2) 26

Reference n°: **16851/141/RI**

Method of Identification: Identity card NN nr.: (1) 63.08.04-081.14
(2) 82.04.10-461.19

Report n° : **U206802**

Date & Place of Birth: **(1) 04/08/1963 Moeskroen
(2) 10/04/1982 Roubaix**

Employer: **Ziemann - Holvrieka (Belgium)**

Code / Testing standard: **NBN-EN- ISO 9606-1 ed. 2017**

Job Knowledge **Not tested**

Photograph
(If required)

Weld Test Details

Range of Qualification

Welding process(es)	141 (simultaneous welding)	141 (simultaneous welding)
Transfer mode:	-----	-----
Product Type :Plate (P) or tube (T):	P	P, T
Joint type (BW or FW):	BW	BW
Parent metal group(s):	8.1 (acc. CR ISO 15608)	1 to 11 (acc. CR ISO 15608)
Filler metal group(s)	FM5	FM5
Filler metal(designation):	S	S, M, nm
Gas / Flux:	I1 (acc. NBN EN ISO 14175)	-----
Auxiliaries:	-----	-----
Type of Current and Polarity	DC -	-----
Material thickness [mm]:	4.0	3.0 to 8.0
Deposited thickness [mm] :	4.0	3.0 to 8.0
Pipe outside diameter [mm]:	-----	Ø ≥ 75mm for PA Ø ≥ 500 for PF
Welding positions:	PF	PA, PF
Weld details:	Simultaneous welding	ss mb, bs
Multilayer / Single layer	-----	-----

Additional information is available on welding procedure specification n° 02.2A

This is a transcript of report U093458 after approval of welders log

Brussels, on 09/06/2021

Name et signature: **Eng. S. De Ridder**

Inspecting Authority: **APRAGAZ 0029**

Date of issue : 03/06/2021 E-00148 EN473 FL n° II

Location : Menen

Validity of approval until

Revalidation according to §9.3a :

Revalidation according to §9.3b : **03/06/2023**

Revalidation according to §9.3c :

Type of test	Performed and Acceptable	Not Required
Visual	X	
Radiography	X	
Fracture		X
Bend		X
Macro		X
Notch tensile test		X

PROLONGATION FOR APPROVAL BY INSPECTING
AUTHORITY (for revalidation acc. to §9.3b)

Date	Signature	Position or title

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)

Date	Signature	Position or title
03/06/2021 03/06/2022		Q. Supervisor Q. Supervisor



WELDER APPROVAL TEST CERTIFICATE

1

2 DESIGNATION: **NBN-EN- ISO 9606-1 ; 141(Simultaneouswelding) ; P ; BW ; FM5 ; S ; s=4.0 ; D=- ; PC ; bs**
3 Page 1 of 1

4 WPS Ref. (if applicable): **01.2A**

Inspection Authority: **Apragaz**

6 Welder's name: **(1)Desmet Gino Maurice**
(2) Desmarets Benjamin

Delegate: **Eng. G. Gielis**

7 Identification: Stamp : (1) 03
(2) 26

Reference n°: **16851/141/RI**

8 Method of Identification: Identity card NN nr.: (1) 63.08.04-081.14
(2) 82.04.10-461.19

Report n° : **U206804**

9 Date & Place of Birth: **(1) 04/08/1963 Moeskroen**
(2) 10/04/1982 Roubaix

10 Employer: **Ziemann - Holvrieka (Belgium)**

11 Code / Testing standard: **NBN-EN- ISO 9606-1 ed. 2017**

12 Job Knowledge **Not tested**

Photograph
(if required)

	Weld Test Details	Range of Qualification
13		
14a	Welding process(es)	141 (simultaneous welding)
14b	Transfer mode:	-----
15	Product Type :Plate (P) or tube (T):	P, T
16	Joint type (BW or FW):	BW
17	Parent metal group(s):	1 to 11 (acc. CR ISO 15608)
18a	Filler metal group(s)	FM5
18b	Filler metal(designation):	S, M, nm
19	Gas / Flux:	I1 (acc. NBN EN ISO 14175)
20a	Auxiliaries:	-----
20b	Type of Current and Polarity	DC -
21a	Material thickness [mm]:	3.0 to 8.0
21b	Deposited thickness [mm] :	3.0 to 8.0
22	Pipe outside diameter [mm]:	Ø ≥ 75mm
23	Welding positions:	PA, PC
24a	Weld details:	ss mb, bs
24b	Multilayer / Single layer	-----

25 Additional information is available on welding procedure specification n° 01.2A
This is a transcript of report U093459 after approval of welders log

Type of test	Performed and Acceptable	Not Required
26		
27		
28		
29	X	
30	X	
31		X
32		X
33		X
34		X
35		X

Brussels, on 09/06/2021
Name et signature: **Eng. S. De Ridder**
Inspecting Authority : **APRAGAZ 0029**
Date of issue : 03/06/2021
Location : **Menen**

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : **03/06/2023**
Revalidation according to §9.3c : -

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
03/12/21		Q. Supervisor
03/06/22		Q. Supervisor



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WELDER APPROVAL TEST CERTIFICATE

1
2 DESIGNATION: NBN-EN- ISO 9606-1 ; 15 ; P ; BW ; FM5 ; S ; t=7.0 ; - ; PC ; ss-gb
3 Page 1 of 1
4 WPS Ref. (if applicable): Inspection Authority: **Apragaz**
5
6 Welder's name: **Vandevelde Laurens** Delegate: **Eng. G. Gielis**
7 Identification: Stamp : 16 Reference n°: **P16851/061/LMI**
8 Method of Identification: Identity card NN nr.: 95.11.07-511.90 Report n°: **U127081**
9 Date & Place of Birth: november 07, 1995 Gent
10 Employer: Ziemann-Holvrieka (Belgium)
11 Code / Testing standard: NBN-EN- ISO 9606-1 ed. 2017
12 Job Knowledge **Not tested**

Photograph
(if required)

	Weld Test Details	Range of Qualification
13		
14a	Welding process(es)	15
14b	Transfer mode:	-----
15	Product Type :Plate (P) or tube (T):	P, T
16	Joint type (BW or FW):	BW
17	Parent metal group(s):	1 to 11 (acc. CR ISO 15608)
18a	Filler metal group(s)	FM5
18b	Filler metal(designation):	S, M
19	Gas / Flux: Shielding	I1 (acc. NBN EN ISO 14175)
20a	Auxiliaries: Backing Plasma	I1 (acc. NBN EN ISO 14175) R1 (acc. NBN EN ISO 14175)
20b	Type of Current and Polarity	DC +
21a	Material thickness [mm]:	7.0
21b	Deposited thickness [mm] :	7.0
22	Pipe outside diameter [mm]:	-----
23	Welding positions:	PC
24a	Weld details:	-----
24b	Multilayer / Single layer	ss gb

25 Additional information is available on attached sheet / welding procedure specification PQR nr. :0310034D

Type of test	Performed and Acceptable	Not Required
26 Visual	X	
27 Radiography	X	
28 Fracture		X
31 Bend		X
34 Macro		X
35 Notch tensile test		X

Brussels, on 09/04/2018
Name et signature: **Eng. S. De Ridder**
Inspecting Authority : APRAGAZ 0029
Date of issue : 22/02/2018
Location : Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : 22/02/2020
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title
02/2020	Eng. G. GIELIS	

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
09/10/2018		Q. Supervisor
09/04/2019		Q. Supervisor
09/10/2019		Q. Supervisor
09/10/2020		Q. Supervisor
09/10/2021		Q. Supervisor



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Your Inspection Authority 0029

Cert 16

pag 2



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1

WELDER APPROVAL TEST CERTIFICATE

2 DESIGNATION: NBN-EN- ISO 9606-1 ; 15 ; P ; BW ; FM5 ; S ; t=7.0 ; - ; PC ; ss-gb

3

Page 1 of 1

4 WPS Ref. (if applicable):

Inspection Authority: **Apragaz**

6 Welder's name: **Vandeveldt Laurens**

Delegate: **Eng. G. Gielis**

7 Identification: Stamp : 16

Reference n°: **P16851/061/LMI**

8 Method of Identification: Identity card NN nr.: 95.11.07-511.90

Report n°: **U127081**

9 Date & Place of Birth: november 07, 1995 Gent

10 Employer: Ziemann-Holvrieka (Belgium)

11 Code / Testing standard: NBN-EN- ISO 9606-1 ed. 2017

12 Job Knowledge **Not tested**

Photograph
(if required)

		Weld Test Details	Range of Qualification
14a	Welding process(es)	15	15
14b	Transfer mode:	-----	-----
15	Product Type :Plate (P) or tube (T):	P	P, T
16	Joint type (BW or FW):	BW	BW
17	Parent metal group(s):	8.1 (acc. CR ISO 15608)	1 to 11 (acc. CR ISO 15608)
18a	Filler metal group(s)	FM5	FM5
18b	Filler metal(designation):	S	S, M
19	Gas / Flux: Shielding	I1 (acc. NBN EN ISO 14175)	-----
20a	Auxiliaries: Backing Plasma	I1 (acc. NBN EN ISO 14175) R1 (acc. NBN EN ISO 14175)	-----
20b	Type of Current and Polarity	DC +	-----
21a	Material thickness [mm]:	7.0	3.0 to 14.0
21b	Deposited thickness [mm] :	7.0	3.0 to 14.0
22	Pipe outside diameter [mm]:	-----	≥ 75
23	Welding positions:	PC	PA, PB
24a	Weld details:	-----	-----
24b	Multilayer / Single layer	ss gb	ss mb, bs, ss gb

25 Additional information is available on attached sheet / welding procedure specification PQR nr. :0310034D

Type of test	Performed and Acceptable	Not Required
Visual	X	
Radiography	X	
Fracture		X
Bend		X
Macro		X
Notch tensile test		X

Brussels, on 09/04/2018
Name et signature: **Eng. S. De Ridder**
Inspecting Authority : APRAGAZ 0029 **DE RIDDER**
Date of issue : 22/02/2018
Location : Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : 22/02/2020
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title
04/2022		Eng. G. Gielis

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
09/2018		Supervisor

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate

Precisely Right.

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
 3 **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
 4 WPS - Reference: **WPS 2-12**
 5 Document No. (if applicable):
 6 Welder's Name: **Haydutov, Stoyan Stoykov (20)**
 7 Identification: **7401289087**
 8 Method of Identification: **Personal identity number**
 9 Date and place of birth: **1/28/1974 in Topolovgrad**
 10 Employer: **Fitting montage Ltd**
 11 Code / Testing Standard: **EN ISO 9606-1:2017**
 Comments:

Supplementary fillet weld test:

yes

Examiner:

Georgi Krastev

12 Job knowledge: fulfilled

	Test pieces		Range of qualification	
14 Welding process(es):	141	141	141, 142, 143, 145	141, 142, 143, 145
15 Product type (plate or pipe):	T		P, T	
16 Type of weld:	BW		BW, FW	
17 Material group(s):	8 (X6CrNiTi18-10)			
18 Filler material group(s):	FM5	FM5	FM5	
18 Filler material (Designation):	W 19 12 3 L	W 19 12 3 L	S, M; nm	S, M; nm
19 Shielding gas:	EN ISO 14175 - I1	EN ISO 14175 - I1	Similar shielding gas	Similar shielding gas
20 Auxiliaries / Flux:	EN ISO 14175 - I1	EN ISO 14175 - I1		
Type of current and polarity	--	--	---	
21 Material thickness (mm):	4.00	1.50		
Deposited thickness	4.00	1.50	1.50 - 8.00	
22 Outside pipe diameter. (mm):	42.00	13.00	≥ 13.00	
23 Welding position(s):	H-L045	H-L045	H-L045, PA; BW: PC, PE, PF; FW: PB	
24 Weld details:	ss gb	ss gb	ss mb, bs, ss gb	ss mb, bs, ss gb

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
30 PT testing	X
31 Fracture testing	X
32	
34	

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
 Notified Body for Pressure Equipment 1853

Certificate No.: 01 202 BG/S-20 517

Certifier: Bissera Nikolova

Place / Date: Sofia, 5/22/2020

Signature:

Date of welding: 5/17/2020

Validity of: 5/16/2023



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title

Date	Signature	Position or Title
23.09.2020	<i>[Signature]</i>	
23.02.2021	<i>[Signature]</i>	
23.08.2021	<i>[Signature]</i>	
22.02.2022	<i>[Signature]</i>	
01.09.2022	<i>[Signature]</i>	

Certificate
in the scope of the directive 2014/68/EU Appendix I, 3.1.2.
Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
3 **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
4 WPS - Reference: **WPS 2-12**
5 Document No. (if applicable):
6 Welder's Name: **Stoyanov, Stoyan (21)**
7 Identification: **8512045827**
8 Method of Identification: **Personal identity number**
9 Date and place of birth: **12/4/1985 in Sliven**
10 Employer: **Fitting montage Ltd**
11 Code / Testing Standard: **EN ISO 9606-1:2017**
Comments:

Supplementary fillet weld test:

yes

Examiner:

Georgi Krastev

12 Job knowledge:

fulfilled

	Test pieces		Range of qualification	
	141	141	141, 142, 143, 145	141, 142, 143, 145
13				
14 Welding process(es):	T		P, T	
15 Product type (plate or pipe):	BW		BW, FW	
16 Type of weld:	8 (X6CrNiTi18-10)			
17 Material group(s):	FM5		FM5	
18 Filler material group(s):	W 19 12 3 L		S, M; nm	
18 Filler material (Designation):	W 19 12 3 L		S, M; nm	
19 Shielding gas:	EN ISO 14175 - I1		Similar shielding gas	
20 Auxiliaries / Flux:	EN ISO 14175 - I1		Similar shielding gas	
21 Type of current and polarity	=		---	
21 Material thickness (mm):	4.00		1.50 - 8.00	
22 Deposited thickness	4.00		≥ 13.00	
22 Outside pipe diameter. (mm):	42.00		H-L045, PA; BW: PC, PE, PF; FW: PB	
23 Welding position(s):	H-L045		ss mb, bs, ss gb	
24 Weld details:	ss gb		ss mb, bs, ss gb	

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
30 PT testing	X
31 Fracture testing	X
32	
34	

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1853

Certificate No.: **01 202 BG/S-20 518**

Certifier: **Bissera Nikolova**

Place / Date: **Sofia, 5/22/2020**

Signature:

Date of welding:

5/17/2020

Validity of:

5/16/2023



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title

Date	Signature	Position or Title
23.09.2020	<i>[Signature]</i>	
23.02.2021	<i>[Signature]</i>	
23.08.2021	<i>[Signature]</i>	
22.02.2022	<i>[Signature]</i>	
22.08.2022	<i>[Signature]</i>	

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
 3 **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
 4 WPS - Reference: 02-2012
 5 Document No. (if applicable):
 6 Welder's Name: Dimitrov, Vasko (25)
 7 Identification: 7007108509
 8 Method of Identification: Personal identity number
 9 Date and place of birth: 7/10/1970 in Haskovo
 10 Employer: Fitting montage Ltd
 11 Code / Testing Standard: EN ISO 9606-1:2017
 Comments:

Supplementary fillet weld test: yes

Examiner: Georgi Krastev

12 Job knowledge: fulfilled

		Test pieces		Range of qualification	
14 Welding process(es):		141	141	141, 142, 143, 145	141, 142, 143, 145
15 Product type (plate or pipe):		T		P, T	
16 Type of weld:		BW		BW, FW	
17 Material group(s):		8 (X6CrNiTi18-10)			
18 Filler material group(s):		FM5	FM5	FM5	
18 Filler material (Designation):		W 19 12 3 L	W 19 12 3 L	S, M; nm	S, M; nm
19 Shielding gas:		EN ISO 14175 - I1	EN ISO 14175 - I1	Similar shielding gas	Similar shielding gas
20 Auxiliaries / Flux:		EN ISO 14175 - I1	EN ISO 14175 - I1		
21 Type of current and polarity		==	==	---	
21 Material thickness (mm):		1.50	4.00		
22 Deposited thickness		1.50	4.00	1.50 - 8.00	
22 Outside pipe diameter. (mm):		13.00	42.00	≥ 13.00	
23 Welding position(s):		H-L045	H-L045	H-L045, PA; BW: PC, PE, PF; FW: PB	
24 Weld details:		ss gb	ss gb	ss mb, bs, ss gb	ss mb, bs, ss gb

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
 Notified Body for Pressure Equipment 1853

Certificate No.: 01 202 BG/S-20 652

Certifier: Bissera Nikolova

Place / Date: Sofia, 6/26/2020

Signature:

Date of welding: 6/21/2020

Validity of 1853 6/20/2023



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examiner / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title

Date	Signature	Position or Title
23.09.2020	<i>[Signature]</i>	
23.02.2021	<i>[Signature]</i>	
23.08.2021	<i>[Signature]</i>	
22.02.2022	<i>[Signature]</i>	
22.09.2022	<i>[Signature]</i>	

Certificate
In the scope of the directive 2014/68/EU Appendix I, 3.1.2.
Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
3 **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
4 WPS - Reference: **2-12**
6 Document No. (if applicable):
6 Welder's Name: **Dzhagalov, Radoslav (R)**
7 Identification: **6401267620**
8 Method of Identification: **Personal identity number**
9 Date and place of birth: **1/26/1964 In Shipka**
10 Employer: **Fitting montage Ltd**
11 Code / Testing Standard: **DIN EN ISO 9606-1:2017**
Comments:

Supplementary fillet weld test: **yes** Examiner: **Georgi Krastev**
12 Job knowledge: **fulfilled**

	Test pieces		Range of qualification	
13	141	141	141, 142, 143, 145	141, 142, 143, 145
14 Welding process(es):	T		P, T	
15 Product type (plate or pipe):	BW		BW, FW	
16 Type of weld:	8 (X6CrNiTi18-10)		FM5	
17 Material group(s):	FM5		S, M; nm	
18 Filler material group(s):	W 19 12 3 L		S, M; nm	
19 Shielding gas:	EN ISO 14175 - II		Similar shielding gas	
20 Auxiliaries / Flux:	EN ISO 14175 - II		Similar shielding gas	
Type of current and polarity	--		---	
21 Material thickness (mm):	4.00		1.50 - 8.00	
Deposited thickness	4.00		≥ 13.00	
22 Outside pipe diameter. (mm):	42.00		H-L045, PA; BW: PC, PE, PF; FW: PB	
23 Welding position(s):	H-L045		ss mb, bs, ss gb	
24 Weld details:	ss gb		ss mb, bs, ss gb	

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
30 PT testing	X
31 Fracture testing	X

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1863

Certificate No.: **01 202 BG/S-20 920**

Certifier: **Bissera Nikolova**

Place / Date: **Sofia, 8/17/2020**

Signature:

Date of welding: **8/10/2020**

Validity of: **8/15/2023**

37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examiner. Examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title	Date	Signature	Position or Title
			02.02.2021		
			23.08.2021		
			22.02.2022		
			02.08.2022		

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
3 **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
4 WPS - Reference: **WPS 2-12**

5 Document No. (if applicable):

6 Welder's Name: **Stamatov, Zlatko (30)**

7 Identification:

8 Method of Identification:

9 Date and place of birth: **11/16/1981 in Harmanli**

10 Employer: **Fitting montage Ltd**

11 Code / Testing Standard: **DIN EN ISO 9606-1:2017**

Comments: **Base material: TP321**

Supplementary fillet weld test: **yes**

Examiner: **Georgi Krastev**

12 Job knowledge: **Accepted**

	Test pieces		Range of qualification	
	141	141	141, 142, 143, 145	141, 142, 143, 145
14 Welding process(es):	T		P, T	
15 Product type (plate or pipe):	BW		BW, FW	
16 Type of weld:	8 (X6CrNiTi18-10)		FM5	
17 Material group(s):	FM5		S, M; nm	
18 Filler material group(s):	W 19 12 3 L		S, M; nm	
18 Filler material (Designation):	EN ISO 14175 - I1		Similar shielding gas	
19 Shielding gas:	EN ISO 14175 - I1		Similar shielding gas	
20 Auxiliaries / Flux:	EN ISO 14175 - I1		Similar shielding gas	
21 Type of current and polarity	--		---	
22 Material thickness (mm):	4.00	1.50	1.50 - 8.00	
23 Deposited thickness	4.00	1.50	≥ 13.00	
24 Outside pipe diameter, (mm):	42.00	13.00	H-L045, PA; BW: PC, PE, PF; FW: PB	
25 Welding position(s):	H-L045	H-L045	ss mb, bs, ss gb	
26 Weld details:	ss gb	ss gb	ss mb, bs, ss gb	

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
28 PT testing	X
29 Fracture testing	X

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1853

Certificate No.: **01 202 BG/S-21 509**

Certifier: **Bissera Nikolova**

Place / Date: **Sofia, 3/24/2021**

Signature:

Date of welding: **3/21/2021**

Validity of: **3/20/2024**



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title

Date	Signature	Position or Title
November 2021	<i>Ukatov</i>	FM
22/02/2022	<i>Ukatov</i>	FM
22/08/2022	<i>Ukatov</i>	FM



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Your Inspection Authority 0029

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WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: **NBN-EN- ISO 9606-1 ; 141(Simultaneouswelding) ; P ; BW ; FM5 ; S ; s=4.0 ; D=- ; PC ; bs**

WPS Ref. (if applicable): **01.2A** Inspection Authority: **Apragaz**

Welder's name: **(1)Desmet Gino Maurice**
(2) Waeye Jean-Michel Delegate: **Eng. G. Gielis**

Identification: Stamp : (1) 03
(2) - Reference n°: **16851/141/RI**

Method of Identification: Identity card NN nr.: (1) 63.08.04-081.14
(2) 11125906170 Report n°: **U206801**

Date & Place of Birth: **(1) 04/08/1963 Moeskroen**
(2) 13/06/1966 Lille

Employer: **Ziemann - Holvrieka (Belgium)**

Code / Testing standard: **NBN-EN- ISO 9606-1 ed. 2017**

Job Knowledge **Not tested**

Photograph
(if required)

	Weld Test Details	Range of Qualification
Welding process(es)	141 (simultaneous welding)	141 (simultaneous welding)
Transfer mode:	-----	-----
Product Type :Plate (P) or tube (T):	P	P, T
Joint type (BW or FW):	BW	BW
Parent metal group(s):	8.1 (acc. CR ISO 15608)	1 to 11 (acc. CR ISO 15608)
Filler metal group(s)	FM5	FM5
Filler metal(designation):	S	S, M, nm
Gas / Flux:	I1 (acc. NBN EN ISO 14175)	-----
Auxillaries:	-----	-----
Type of Current and Polarity	DC -	-----
Material thickness [mm]:	4.0	3.0 to 8.0
Deposited thickness [mm] :	4.0	3.0 to 8.0
Pipe outside diameter [mm]:	-----	Ø ≥ 75mm
Welding positions:	PC	PA, PC
Weld details:	Simultaneous welding	ss mb, bs
Multilayer / Single layer	-----	-----

Additional information is available on welding procedure specification n° 01.2A

Type of test	Performed and Acceptable	Not Required
Visual	X	
Radiography	X	
Fracture		X
Bend		X
Macro		X
Notch tensile test		X

Brussels, on 09/06/2021
Name et signature: **Eng. S. De Ridder**
Inspecting Authority: **APRAGAZ 0029**
Date of issue: 03/06/2021
Location: Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : **03/06/2023**
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
03/12/21 03/06/22		Q. Supervisor Q. Supervisor

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate



Precisely Right.

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**

3

4 WPS - Reference: **WPS 2-12**

5 Document No. (if applicable):

6 Welder's Name: **Tyulev, Boyko (34)**

7 Identification:

8 Method of Identification:

9 Date and place of birth: **3/17/1986 in Kazanlak**

10 Employer: **Fitting montage Ltd**

11 Code / Testing Standard: **EN ISO 9606-1:2017**

Comments: **Base material: TP 321**

Supplementary fillet weld test: **no**

Examiner: **Georgi Krastev**

12 Job knowledge: **Accepted**

13

	Test piece	Range of qualification
14 Welding process(es):	141	141, 142, 143, 145
15 Product type (plate or pipe):	T	P, T
16 Type of weld:	BW	BW
17 Material group(s):	8.1	
Filler material group(s)	FM5	FM5
18 Filler material (Designation):	W 19 12 3 L	S, M; nm
19 Shielding gas:	EN ISO 14175 - 11	Similar shielding gas
20 Auxiliaries / Flux:	EN ISO 14175 - 11	
Type of current and polarity	= -	- - -
21 Material thickness (mm):	4.00	
Deposited thickness	4.00	3.00 - 8.00
22 Outside pipe diameter, (mm):	42.00	≥ 25.00
23 Welding position(s):	H-L045	PA, PC, PE, PF
24 Weld details:	ss gb	ss mb, bs, ss gb

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
30 PT testing	X
31 Fracture testing	X
32	
34	

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1853

Certificate No: **01292 BG/S-22 289**

Certified by: **Bissera Nikolova**

Place / Date: **Sofia, 3/1/2022**

Signature:

Date of welding: **2/25/2022**

Validity of qualification: **2/25/2025**



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title	Date	Signature	Position or Title
02/2022	<i>[Signature]</i>				
08/2022	<i>[Signature]</i>				

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**

3

4 WPS - Reference: WPS 2-12

5 Document No. (if applicable):

6 Welder's Name: Pavlov, Emil (35)

7 Identification:

8 Method of Identification:

9 Date and place of birth: 9/19/1975 in Sofia

10 Employer: Fitting montage Ltd

11 Code / Testing Standard: EN ISO 9606-1:2017

Comments: Base material: TP 321

Supplementary fillet weld test: no

Examiner: Georgi Krastev

12 Job knowledge: Accepted

13

	Test piece	Range of qualification
14 Welding process(es):	141	141, 142, 143, 145
15 Product type (plate or pipe):	T	P, T
16 Type of weld:	BW	BW
17 Material group(s):	8.1	
Filler material group(s)	FM5	FM5
18 Filler material (Designation):	W 19 12 3 L	S, M; nm
19 Shielding gas:	EN ISO 14175 - I1	Similar shielding gas
20 Auxiliaries / Flux:	EN ISO 14175 - I1	
Type of current and polarity	=-	- - -
21 Material thickness (mm):	4.00	
Deposited thickness	4.00	3.00 - 8.00
22 Outside pipe diameter. (mm):	42.00	≥ 25.00
23 Welding position(s):	H-L045	PA, PC, PE, PF
24 Weld details:	ss gb	ss mb, bs, ss gb

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
28 PT testing	X
29 Fracture testing	X

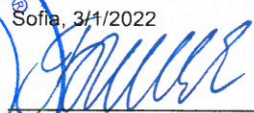
The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1853

Certificate No.: 01 202 BG/S-22 290

Certifier: Bissera Nikolova

Place / Date: Sofia, 31/1/2022

Signature: 

Date of welding: 2/26/2022

Validity of qualification: 2/25/2025



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title	Date	Signature	Position or Title

Certificate
in the scope of the directive 2014/68/EU Appendix I, 3.1.2.
Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
3
4 WPS - Reference: **WPS 2-12**
5 Document No. (if applicable):
6 Welder's Name: **Chankov, Mitko (3)**
7 Identification:
8 Method of Identification:
9 Date and place of birth: **5/25/1972 in Burgas**
10 Employer: **Fitting montage Ltd**
11 Code / Testing Standard: **EN ISO 9606-1:2017**
Comments: **Base material: TP 321**

Supplementary fillet weld test: **no**

Examiner: **Georgi Krastev**

12 Job knowledge: **Accepted**

	Test piece	Range of qualification
14 Welding process(es):	141	141, 142, 143, 145
15 Product type (plate or pipe):	T	P, T
16 Type of weld:	BW	BW
17 Material group(s):	8.1	
Filler material group(s)	FM5	FM5
18 Filler material (Designation):	W 19 12 3 L	S, M; nm
19 Shielding gas:	EN ISO 14175 - I1	Similar shielding gas
20 Auxiliaries / Flux:	EN ISO 14175 - I1	
Type of current and polarity	---	---
21 Material thickness (mm):	4.00	3.00 - 8.00
Deposited thickness	4.00	≥ 25.00
22 Outside pipe diameter. (mm):	42.00	PA, PC, PE, PF
23 Welding position(s):	H-L045	ss mb, bs, ss gb
24 Weld details:	ss gb	

25 Additional information is available on attached sheet and / or WPS

Type of test	Performed and accepted
26 Visual testing	X
27 Radiographic testing	X
28 PT testing	X
29 Fracture testing	X

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1853

Certificate No: **01 202 BG/S-22 291**

Certified by: **Bissera Nikolova**

Place / Date: **Sofia, 3/17/2022**

Signature: 

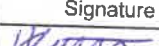
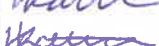
Date of welding: **2/26/2022**

Validity of qualification: **2/25/2025**



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title
02/2022		
08/2022		

Date	Signature	Position or Title

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**
 3 **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
 4 WPS - Reference: **WPS 2-12/03-12**
 5 Document No. (if applicable):
 6 Welder's Name: **Ivanov, Rosen (9)**
 7 Identification:
 8 Method of Identification:
 9 Date and place of birth: **6/8/1992 in Kazanlak**
 10 Employer: **Fitting montage Ltd**
 11 Code / Testing Standard: **AD 2000-HP3, DIN EN ISO 9606-1:2017**
 Comments:

Supplementary fillet weld test:

yes

Examiner: **Georgi Krastev**

12 Job knowledge: **Accepted**

	Test pieces		Range of qualification	
	141	141	141, 142, 143, 145	141, 142, 143, 145
14 Welding process(es):	T BW 8 (X6CrNiTi18-10) FM5 W 19 12 3 L		P, T BW, FW	
15 Product type (plate or pipe):				
16 Type of weld:				
17 Material group(s):				
18 Filler material group(s):				
18 Filler material (Designation):				
19 Shielding gas:				
20 Auxiliaries / Flux:				
21 Type of current and polarity				
21 Material thickness (mm):				
22 Deposited thickness				
22 Outside pipe diameter. (mm):				
23 Welding position(s):				
24 Weld details:				

25 Additional information is available on attached sheet and / or WPS

26 Type of test	Performed and accepted
27 Visual testing	X
30 Radiographic testing	X
34 Fracture testing	X

The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
 Notified Body for Pressure Equipment 1853

Certificate No.: **01 202 BG/S-22 387**

Certifier: **Bissera Nikolova**

Place / Date: **Sofia, 3/16/2022**

Signature:

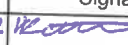
Date of welding: **3/6/2022**

Validity of qualification: **3/5/2025**

37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

Date	Signature	Position or Title

Date	Signature	Position or Title
18.03.2022		
08.09.2022		

Certificate

in the scope of the directive 2014/68/EU Appendix I, 3.1.2.

Welder's qualification test certificate

2 Designation: **EN ISO 9606-1 141 T BW FM5 S s1.5 D13 H-L045 ss gb**
3 **EN ISO 9606-1 141 T BW FM5 S s4.0 D42 H-L045 ss gb**

4 WPS - Reference: 02-2012

5 Document No. (if applicable):

6 Welder's Name: Chongarov, Doncho (13)

7 Identification:

8 Method of Identification:

9 Date and place of birth: 4/15/1972 in Kazanlak

10 Employer: Fitting montage Ltd

11 Code / Testing Standard: EN ISO 9606-1:2017

Comments:

Supplementary fillet weld test: yes

Examiner: Georgi Krastev

12 Job knowledge: Accepted

13	Test pieces		Range of qualification	
	141	141	141, 142, 143, 145	141, 142, 143, 145
14 Welding process(es):	T	T	P, T	P, T
15 Product type (plate or pipe):	BW	BW	BW, FW	BW, FW
16 Type of weld:				
17 Material group(s):	8 (X6CrNiTi18-10)	8 (X6CrNiTi18-10)		
Filler material group(s):	FM5	FM5	FM5	FM5
18 Filler material (Designation):	W 19 12 3 L	W 19 12 3 L	S, M; nm	S, M; nm
19 Shielding gas:	EN ISO 14175 - I1	EN ISO 14175 - I1	Similar shielding gas	Similar shielding gas
20 Auxiliaries / Flux:	EN ISO 14175 - I1	EN ISO 14175 - I1		
Type of current and polarity	--	--	---	---
21 Material thickness (mm):	1.50	4.00	1.50 - 8.00	1.50 - 8.00
Deposited thickness	1.50	4.00	≥ 13.00	≥ 13.00
22 Outside pipe diameter. (mm):	13.00	42.00	PA, PC, PE, PF, FW: PB	PA, PC, PE, PF, FW: PB
23 Welding position(s):	H-L045	H-L045		
24 Weld details:	ss gb	ss gb	ss mb, bs, ss gb	ss mb, bs, ss gb

25 Additional information is available on attached sheet and / or WPS

26	Type of test	Performed and accepted
27	Visual testing	X
30	Radiographic testing	X
31	PT testing	X
32		

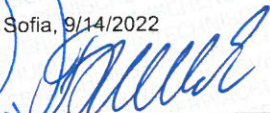
The applications of PED 2014/68/EU Appendix I, 3.1.2., permission of staff are fulfilled.

Certificate Authority: **TÜV Rheinland Bulgaria Ltd.**
Notified Body for Pressure Equipment 1853

Certificate No.: 01 202 BG/S-22 1029

Certifier: Bissera Nikolova

Place / Date: Sofia, 9/14/2022

Signature: 

Date of welding: 9/11/2022

Validity of qualification: 9/10/2025



37 *) Append separate sheet, if required

38 According 9.3a: Confirmation of the validity by welding coordinator / examine / examining body for the following 6 month (refer to 9.2)

39	Date	Signature	Position or Title	Date	Signature	Position or Title



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WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: **NBN-EN- ISO 9606-1 ; 141(Simultaneouswelding) ; P ; BW ; FM5 ; S ; s=4.0 ; D=- ; PF ; bs**
Page 1 of 1

WPS Ref. (if applicable): **02.2A** Inspection Authority: **Apragaz**

Welder's name: **(1)Desmet Gino Maurice**
(2)Waeye Jean-Michel Delegate: **Eng. G. Gielis**

Identification: Stamp : (1) 03 Reference n°: **16781/141/RI**
(2) -

Method of Identification: Identity card NN nr.: (1) 63.08.04-081.14 Report n° : **U206803**
(2) 11125906170

Date & Place of Birth: **(1) 04/08/1963 Moeskroen**
(2) 13/06/1966 Lille

Employer: **Ziemann - Holvrieka (Belgium)**

Code / Testing standard: **NBN-EN- ISO 9606-1 ed. 2017**

Job Knowledge **Not tested**

Photograph
(if required)

	Weld Test Details	Range of Qualification
Welding process(es)	141 (simultaneous welding)	141 (simultaneous welding)
Transfer mode:	-----	-----
Product Type :Plate (P) or tube (T):	P	P, T
Joint type (BW or FW):	BW	BW
Parent metal group(s):	8.1 (acc. CR ISO 15608)	1 to 11 (acc. CR ISO 15608)
Filler metal group(s)	FM5	FM5
Filler metal(designation):	S	S, M, nm
Gas / Flux:	I1 (acc. NBN EN ISO 14175)	-----
Auxiliaries:	-----	-----
Type of Current and Polarity	DC -	-----
Material thickness [mm]:	4.0	3.0 to 8.0
Deposited thickness [mm] :	4.0	3.0 to 8.0
Pipe outside diameter [mm]:	-----	Ø ≥ 75mm for PA Ø ≥ 500 for PF
Welding positions:	PF	PA, PF
Weld details:	Simultaneous welding	ss mb, bs
Multilayer / Single layer	-----	-----

Additional information is available on welding procedure specification n° 02.2A

Type of test	Performed and Acceptable	Not Required
Visual	X	
Radiography	X	
Fracture		X
Bend		X
Macro		X
Notch tensile test		X

Brussels, on 09/06/2021
Name et signature: **Eng. S. De Ridder**
Inspecting Authority : **APRAGAZ 0029**
Date of issue : 03/06/2021
Location : Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : **03/06/2023**
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
03/12/21 03/06/22		Q. Supervisor Q. Supervisor



APRAGAZ

Your Inspection Authority 0029

Cert 25



Chée de Vilvorde, 156 B-1120 Brussels

Tel. +32/2/264.03.60 - Fax. +32/2/268.89.58 - e-mail : info@apragaz.com

WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: NBN-EN-ISO 9606-1 ;141 ; T ; BW+ suppl FW; FM5 ; S ; t=1.5 ; D=13.72 ; H-L045 ; ss gb

WPS Ref. (if applicable): Inspection Authority: **Apragaz**

Welder's name: **Dimitrov Atanas Petrov** Delegate: **Eng. G. Gielis**

Identification: Stamp : 25 Reference n°: **16851/091/RI**

Method of Identification: Identity card Report n° : **U152664**

Date & Place of Birth: september 22, 1960 Lyulyakovo

Employer: Ziemann-Holvrieka (Belgium)

Code / Testing standard: NBN-EN- ISO 9606-1 ed. 2017

Job Knowledge **Not tested**

Photograph
(if required)

	Weld Test Details	Range of Qualification
Welding process(es)	141	141, 142, 143 and 145
Transfer mode:	-----	-----
Product Type :Plate (P) or tube (T):	T	P, T
Joint type (BW or FW):	BW + suppl FW	BW / FW
Parent metal group(s):	8.1 (acc. CR ISO 15608)	1 to 11 (acc. CR ISO 15608)
Filler metal group(s)	FM5	FM5
Filler metal(designation):	S	S, M, nm
Gas / Flux:	I1 (acc. NBN EN ISO 14175)	-----
Auxiliaries: Gas backing	I1 (acc. NBN EN ISO 14175)	-----
Type of Current and Polarity	DC -	-----
Material thickness [mm]:	1.5	1.5 to 3.0
Deposited thickness [mm] :	1.5	1.5 to 3.0
Pipe outside diameter [mm]:	13.72	13.72 to 27.44
Welding positions:	BW: H-L045 FW: PB	All, except down
Weld details:	ss gb	ss mb; ss gb; bs
Multilayer / Single layer	BW+ suppl FW	BW+ suppl FW

Additional information is available on attached sheet / welding procedure specification n° WPS08.2

Type of test	Performed and Acceptable	Not Required
Visual	X	
Radiography	X	
Fracture	X	
Bend		X
Macro		X
Notch tensile test		X

Brussels, on 02/05/2019

Name et signature: **Eng. S. DE RIDDER**

Inspecting Authority : APRAGAZ 0029

Date of issue : 04/04/2019

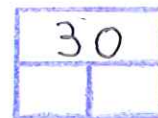
Location : Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : 04/04/2021
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title
04/2021	Eng. G. GIELIS	

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
04/04/2019	S. DE RIDDER	Supervisor
04/04/2020	S. DE RIDDER	Supervisor
04/04/2020	S. DE RIDDER	Supervisor
04/10/2021	S. DE RIDDER	Supervisor
04/04/2022	S. DE RIDDER	Supervisor



WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: **EN 287-1 ; 15 ; P ; BW ; 10.1 ; S ; t=7.0 ; D=- ; PC ; ss-nb**

Page 1 of 1

Manufacturer's welding procedure specification

Inspection Authority: **APRAGAZ**

Delegate: **Eng. G. Gielis**

Reference n°: **1004/P12323/000/LMI**

Report n°: **U003876**

Reference (if applicable): **0310034D**

Welder's name: **Catry Rik**

Identification: Stamp: 19

Method of identification: NN nr.: 640613-443.68

Date and place of birth: 13/06/1964 Menen

Employer: **Holvrieka – Menen (Belgium)**

Code / Testing standard: NBN-EN287-1: 2004/A2:2006

Job knowledge: *not tested*

Photograph
(if required)

		Weld test details	Range of approval
Welding process:		15	15
Plate (P) or tube (T):		P	P, T
Joint type (BW or FW):		BW	BW, FW
Parent metal group:		10.1 (acc. CR ISO 15608)	8, 9.2, 9.3, 10
Filler metal type / designation:		S	S
Gas / flux:	Shielding	I1 (acc. NBN EN ISO 14175)	-----
Auxiliaries:	Backing gas: Plasma gas:	I1 (acc. NBN EN ISO 14175) R1 (acc. NBN EN ISO 14175)	-----
Material thickness [mm]:		7.0	3.0 to 14.0
Pipe outside diameter [mm]:		-----	Ø ≥ 150mm
Welding positions:		PC	PA, PB, PC
Gouging / backing strips		Ss nb	Ss nb, ss mb, bs For FW: sl, ml

Additional information is available on welding procedure specification n° : PQR 0310034D

Brussels, on 06/10/2010

Name and signature: **Eng. S. De Ridder**

Inspecting Authority: **APRAGAZ**
(CEOC Member Organisation) **S. DE RIDDER**
EWE-BE-00153 EN473 FL rev II

Date of issue: 06/04/2010

Location: **Menen**

Validity of approval until: 06/04/2012

PROLONGATION FOR APPROVAL
BY EMPLOYER / SUPERVISOR

Type of test	Performed and acceptable	Not required
Visual	X	
Radiography	X	
Magnetic/ Penetrant		X
Macro		X
Fracture		X
Bend		X
Additional *		X

PROLONGATION FOR APPROVAL
BY INSPECTING AUTHORITY

Date	Signature	Position or title
15/03/2012		Testing Supervisor
15/03/14		Testing Supervisor

Date	Signature	Position or title
06/10/2010		Testing Supervisor
06/04/2011		Testing supervisor
06/10/2011		Testing supervisor

*) append separate sheet if required

06/10/2012
15/03/2013
15/09/2013
15/09/2014

Testing Supervisor
Testing Supervisor
Testing Supervisor
Testing Supervisor



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30
2

WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: **EN 287-1 ; 15 ; P ; BW ; 10.1 ; S ; t=7.0 ; D=- ; PC ; ss-nb**

Manufacturer's welding procedure specification

Reference (if applicable): **0310034D**

Welder's name: **Catry Rik**

Identification: Stamp: 19

Method of identification: NN nr.: 640613-443.68

Date and place of birth: 13/06/1964 Menen

Employer: **Holvrieka - Menen (Belgium)**

Code / Testing standard: NBN-EN287-1: 2004/A2:2006

Job knowledge: *not tested*

Page 1 of 1

Inspection Authority: **APRAGAZ**
Delegate: **Eng. G. Gielis**
Reference n°: **1004/P12323/000/LMI**
Report n°: **U003876**

Photograph
(if required)

		Weld test details	Range of approval
Welding process:		15	15
Plate (P) or tube (T):		P	P, T
Joint type (BW or FW):		BW	BW, FW
Parent metal group:		10.1 (acc. CR ISO 15608)	8, 9.2, 9.3, 10
Filler metal type / designation:		S	S
Gas / flux:	Shielding	I1 (acc. NBN EN ISO 14175)	-----
Auxiliaries:	Backing gas: Plasma gas:	I1 (acc. NBN EN ISO 14175) R1 (acc. NBN EN ISO 14175)	-----
Material thickness [mm]:		7.0	3.0 to 14.0
Pipe outside diameter [mm]:		-----	Ø ≥ 150mm
Welding positions:		PC	PA, PB, PC
Gouging / backing strips		Ss nb	Ss nb, ss mb, bs For FW: sl, ml

PROLONGATION OF APPROVAL BY INSPECTING AUTHORITY AIB VINCOTTE INTERNATIONAL

Date	Signature	Position or title
15/03/2016		Q. Supervisor.
03/2018		Q. Supervisor.
03/2020		Q. Supervisor.
15/03/2015		Q. Supervisor.
15/09/2015		Q. Supervisor.
15/09/2016		Q. Supervisor.
15/03/2017		Q. Supervisor.
15/09/2017		Q. Supervisor.
15/09/2018		Q. Supervisor.
15/03/2019		Q. Supervisor.
15/09/2019		Q. Supervisor.
15/09/2020		Q. Supervisor.
15/03/2021		Q. Supervisor.



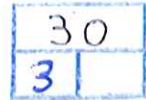
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WELDER APPROVAL TEST CERTIFICATE

Page 1 of 1

DESIGNATION: **EN 287-1 ; 15 ; P ; BW ; 10.1 ; S ; t=7.0 ; D=- ; PC ; ss-nb**

Manufacturer's welding procedure specification

Inspection Authority: **APRAGAZ**

Delegate: **Eng. G. Gielis**

Reference n°: **1004/P12323/000/LMI**

Report n°: **U003876**

Reference (if applicable): **0310034D**

Welder's name: **Catry Rik**

Identification: Stamp: 19

Method of identification: NN nr.: 640613-443.68

Date and place of birth: 13/06/1964 Menen

Employer: **Holvrieka - Menen (Belgium)**

Code / Testing standard: **NBN-EN287-1: 2004/A2:2006**

Job knowledge: **not tested**

Photograph

(If required)

		Weld test details	Range of approval
Welding process:		15	15
Plate (P) or tube (T):		P	P, T
Joint type (BW or FW):		BW	BW, FW
Parent metal group:		10.1 (acc. CR ISO 15608)	8, 9.2, 9.3, 10
Filler metal type / designation:		S	S
Gas / flux:	Shielding	I1 (acc. NBN EN ISO 14175)	-----
Auxiliaries:	Backing gas:	I1 (acc. NBN EN ISO 14175)	-----
	Plasma gas:	R1 (acc. NBN EN ISO 14175)	-----
Material thickness [mm]:		7.0	3.0 to 14.0
Pipe outside diameter [mm]:		-----	Ø ≥ 150mm
Welding positions:		PC	PA, PB, PC
Gouging / backing strips		Ss nb	Ss nb, ss mb, bs For FW: sl, ml

PROLONGATION OF APPROVAL BY INSPECTING AUTHORITY AIB VINCOTTE INTERNATIONAL

Date	Signature	Position or title
03/22		

Date	Signature	Position or title
15/09/21		Q. Supervisor

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Chée de Villorde, 156 B-1120 Brussels Phone 32/2/264.03.60 Fax. 32/2/268.89.58 e-mail : info@apragaz.com		

APPROVAL TEST CERTIFICATE FOR WELDING OPERATORS / RESISTANCE WELDING IN ACCORDANCE WITH EN 14732

Manufacturer's welding procedure specification: Reference No.: WPS 04 Name of welding operator : Arnaud Delachapelle Identification: Stamp: Method of identification: Id card Date and place of birth: Octobre 02, 1984	Examiner: Eng. Gielis G. Reference (Job) No.: 16851/P133 Report No.: U193538
Employer: Ziemann - Holvrieka	
Code/testing standard: EN 14732	
Job knowledge: Not tested	

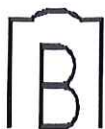
Weld details	Range of approval
Welding process 15 Welding unit SAF-Buffer AUTO 380DC + plasma TIG Automatic plasma	15 SAF-Buffer AUTO 380DC + plasma TIG Automatic plasma
Details in accordance with 4.2.5	
Joint sensor without Single run/multirun technique single run Robotic type automatic	With or without Single run technique Automatic

Additional information is available on attached sheet and/or welding procedure specification No.:
2018-P1-141-ORB

The approval is based on: - Welding procedure test in accordance with 4.1.a ☐ - Pre-production welding test or production test in accordance with 4.1.b ☐ - Production sampling testing in accordance with 4.1.c ☒ - Function test in accordance with 4.1.d ☐ Results of the approval test see document No.: PQR 2020-P10-01 (welding procedure approval record or other documents of testing)	Name, date and signature: Examiner or examining body: APRAGAZ Date of issue: 04/11/2020 Location: Menen Validity of approval until: 04/11/2023 see Rx-report: 01/10/2020 of Ziemann												
Prolongation for approval by employer/welding coordinator for the following 6 months (see clause 5)													
Prolongation for approval by examiner or examining body for the following 2 years (see clause 5)													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Date</th> <th style="width: 30%;">Signature</th> <th style="width: 50%;">Position or title</th> </tr> </thead> <tbody> <tr> <td style="height: 40px; vertical-align: bottom;">04/05/2021</td> <td style="vertical-align: bottom;"></td> <td style="vertical-align: bottom;">Q Supervisor</td> </tr> <tr> <td style="height: 40px; vertical-align: bottom;">04/11/2021</td> <td style="vertical-align: bottom;"></td> <td style="vertical-align: bottom;">Q Supervisor</td> </tr> <tr> <td style="height: 40px; vertical-align: bottom;">04/05/2022</td> <td style="vertical-align: bottom;"></td> <td style="vertical-align: bottom;">Q Supervisor</td> </tr> </tbody> </table>	Date	Signature	Position or title	04/05/2021		Q Supervisor	04/11/2021		Q Supervisor	04/05/2022		Q Supervisor	
Date	Signature	Position or title											
04/05/2021		Q Supervisor											
04/11/2021		Q Supervisor											
04/05/2022		Q Supervisor											

Brussels, 26/11/2020
Seen and approved,
Eng. S. De Ridder





Chée de Vilvorde, 156 B-1120 Brussels

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WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: NBN-EN- ISO 9606-1 ;135; P ; FW ; FM5 ; S ; t=6.0 ; D=- ; PB ; sl
WPS Ref. (if applicable): WPS 6
Welder's name: **Kangala Kitia**
Identification: Stamp : 04
Method of Identification: Identity card
Date & Place of Birth: novembre 22, 1968 Kinshasa
Employer: Ziemann-Holvrieka – Menen (Belgium)
Code / Testing standard: NBN-EN- ISO 9606-1 : 2017
Job Knowledge: Not tested

Page 1 of 1

Inspection Authority: **Apragaz**

Delegate: **Eng. G. Gielis**

Reference n°: **16851/055/RI**

Report n° : **U122581**

Photograph
(if required)

	Weld Test Details	Range of Qualification
13a	Welding process(es)	135
13b	Transfer mode:	135, 138
14a	Product Type :Plate (P) or tube (T):	Short circuit, globular, pulsed, spray arc
14b	Joint type (BW or FW):	P, T
15	Parent metal group(s):	FW
16	Filler metal group(s):	8.1 (acc. CR ISO 15608)
17	Filler metal(designation):	1 to 11 (acc. CR ISO 15608)
18a	Gas / Flux:	FM5
18b	Auxiliaries:	FM5
19	Type of Current and Polarity	S, M
20a	Material thickness [mm]:	M21 (acc. NBN EN ISO 14175)
20b	Deposited thickness [mm] :	-----
21a	Pipe outside diameter [mm]:	-----
21b	Welding positions:	DC +
22	Weld details:	-----
23	Multilayer / Single layer	-----
24a		-----
24b		-----

Additional information is available on welding procedure specification n° WPS 6
This is a transcript of report 2AD/34/60197189/00/NL/013 after approval of welders log

Type of test	Performed & Acceptable	Not Required
Visual	X	
Radiography		X
Fracture		X
Bend		X
Macro	X	
Notch tensile test		X

Brussels, on 22/01/18
Name et signature: **Eng. S. De Ridder**
Inspecting Authority : **APRAGAZ 0029**
Date of issue : 07/12/2017
Location : Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : 07/12/2019
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title
12/2019	Eng. G. GIELIS	

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
04/06/18		Q. Supervisor
07/12/18		u
07/06/19		u
07/06/20		Q. Supervisor



Chée de Vilvorde, 156 B-1120 Brussels

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WELDER APPROVAL TEST CERTIFICATE

DESIGNATION: NBN-EN- ISO 9606-1 ;135; P ; FW ; FM5 ; S ; t=6.0 ; D=- ; PB ; sl

Page 1 of 1

WPS Ref. (if applicable): WPS 6

Inspection Authority: Apragaz

Welder's name: Kangala Kitia

Delegate: Eng. G. Gielis

Identification: Stamp : 04

Reference n°: 16851/055/RI

Method of Identification: Identity card

Report n°: U122581

Date & Place of Birth: novembre 22, 1968 Kinshasa

Employer: Ziemann-Holvrieka – Menen (Belgium)

Code / Testing standard: NBN-EN- ISO 9606-1 : 2017

Job Knowledge: Not tested

Photograph

(if required)

	Weld Test Details	Range of Qualification
14a	Welding process(es)	135
14b	Transfer mode:	Short circuit
15	Product Type :Plate (P) or tube (T):	P, T
16	Joint type (BW or FW):	FW
17	Parent metal group(s):	8.1 (acc. CR ISO 15608)
18a	Filler metal group(s)	FM5
18b	Filler metal(designation):	S, M
19	Gas / Flux:	M21 (acc. NBN EN ISO 14175)
20a	Auxiliaries:	-----
20b	Type of Current and Polarity	DC +
21a	Material thickness [mm]:	6.0
21b	Deposited thickness [mm] :	-----
22	Pipe outside diameter [mm]:	Ø > 75mm
23	Welding positions:	PB
24a	Weld details:	-----
24b	Multilayer / Single layer	sl

Additional information is available on welding procedure specification n° WPS 6

This is a transcript of report 2AD/34/60197189/00/NL/013 after approval of welders log

Type of test	Performed & Acceptable	Not Required
Visual	X	
Radiography		X
Fracture		X
Bend		X
Macro	X	
Notch tensile test		X

Brussels, on 22/01/18
Name et signature: Eng. S. De Ridder
Inspecting Authority: APRAGAZ 0029
Date of issue: 07/12/2017
Location: Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : 07/12/2019
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title
12/2021	Eng. G. Gielis	

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
07/12/2020 07/06/2021 07/06/2022		Q. Supervisor Q. Supervisor Q. Supervisor



1

WELDER APPROVAL TEST CERTIFICATE

2 DESIGNATION: **NBN-EN-ISO 9606-1 ;141 ; T ; BW+ suppl FW; FM5 ; S ; t=4.0 ; D=42.0 ; H-L045 ; ss gb**
3 Page 1 of 1
4 WPS Ref. (if applicable): Inspection Authority: **Apragaz**
6 Welder's name: **Dimitrov Atanas Petrov** Delegate: **Eng. G. Giellis**
7 Identification: **Stamp : 25** Reference n°: **16851/091/RI**
8 Method of Identification: **Identity card** Report n°: **U152663**
9 Date & Place of Birth: **september 22, 1960 Lyulyakovo**
10 Employer: **Ziemann-Holvrieka (Belgium)**
11 Code / Testing standard: **NBN-EN- ISO 9606-1 ed. 2017**
12 Job Knowledge **Not tested**

Photograph
(If required)

	Weld Test Details	Range of Qualification
14a	Welding process(es)	141
14b	Transfer mode:	141, 142, 143 and 145
15	Product Type :Plate (P) or tube (T):	T
16	Joint type (BW or FW):	P, T
17	Parent metal group(s):	BW + suppl FW
18a	Filler metal group(s):	8.1 (acc. CR ISO 15608)
18b	Filler metal(designation):	1 to 11 (acc. CR ISO 15608)
19	Gas / Flux:	FM5
20a	Auxiliaries: Gas backing	FM5
20b	Type of Current and Polarity	S
21a	Material thickness [mm]:	I1 (acc. NBN EN ISO 14175)
21b	Deposited thickness [mm] :	I1 (acc. NBN EN ISO 14175)
22	Pipe outside diameter [mm]:	DC -
23	Welding positions:	4.0
24a	Weld details:	3.0 to 8.0
24b	Multilayer / Single layer	4.0
		Ø ≥ 25.0
		BW: H-L045
		FW: PB
		All, except down
		ss gb
		ss mb; ss gb; bs
		BW+ suppl FW

25 Additional information is available on attached sheet / welding procedure specification n° WPS08.2

Type of test	Performed and Acceptable	Not Required
Visual	X	
Radiography	X	
Fracture	X	
Bend		X
Macro		X
Notch tensile test		X

Brussels, on 02/05/2019
Name et signature: **Eng. S. DE RIDDER**
Inspecting Authority: **APRAGAZ 0029**
Date of issue: 04/04/2019
Location: Menen

Validity of approval until

Revalidation according to §9.3a :
Revalidation according to §9.3b : 04/04/2021
Revalidation according to §9.3c :

PROLONGATION FOR APPROVAL BY INSPECTING AUTHORITY (for revalidation acc. to §9.3b)		
Date	Signature	Position or title
04/2021	Eng. G. GIELIS	

PROLONGATION FOR APPROVAL BY EMPLOYER / SUPERVISOR (acc. to §9.2)		
Date	Signature	Position or title
04/2019		Q Supervisor
04/04/2020		Q Supervisor
04/10/2020		Q Supervisor
04/10/2021		Q Supervisor
04/04/2022		Q Supervisor

NON-DESTRUCTIVE TESTS

CONTENTS:

- *RADIOGRAPIC REPORT
- *VACUUM BOX CERTIFICATE
- *PENETRANT TEST CERTIFICATE
- *PENETRANT PRODUCTS CERTIFICATE
- *PERSONNEL NON-DESTRUCTIVE TESTING

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

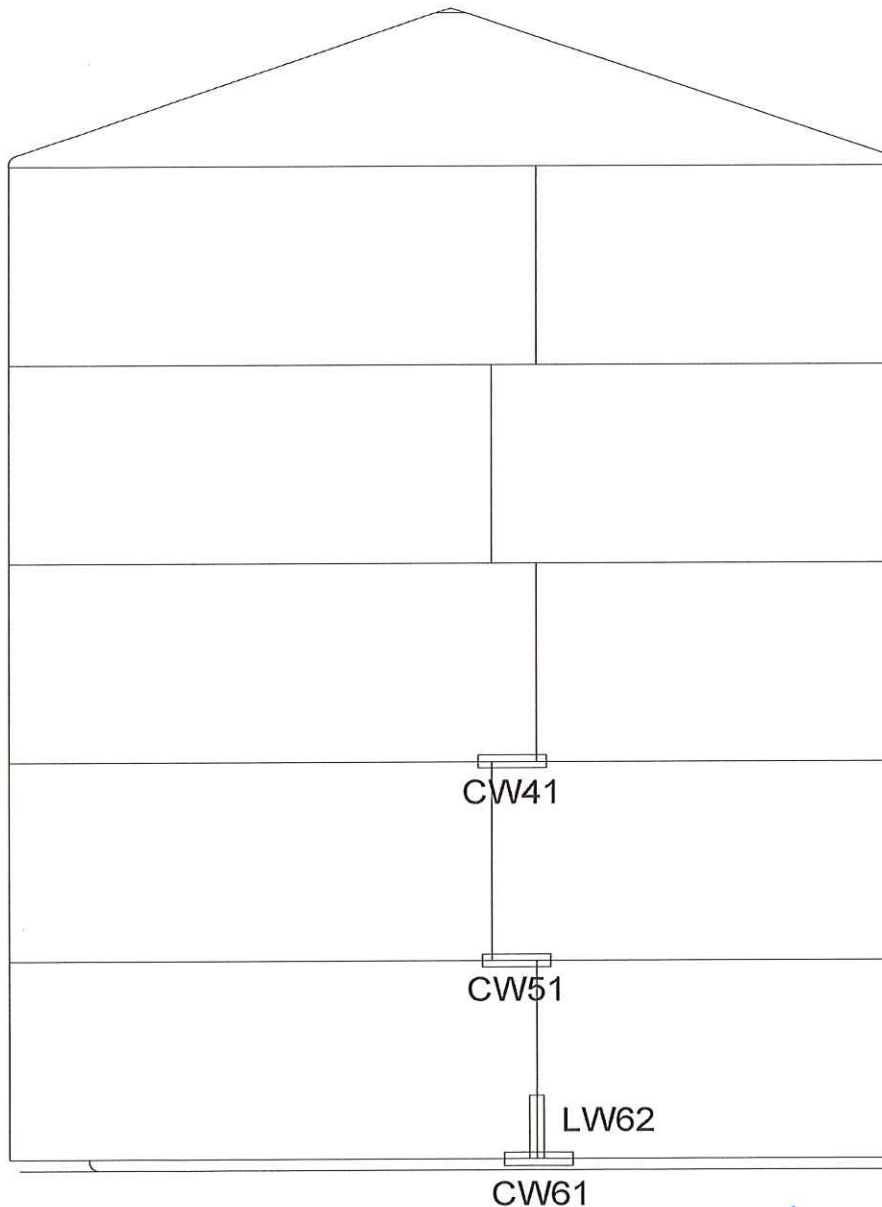
SKETCH RADIOGRAPHIC REPORT

ORDER Nr: **5685B**

Report nr: **5685RT-02**

Page: **1 / 2**

TANK B130700




Ing. B. Andzies, WE-DE 20130

ATL BV

01/23

 Quality - Stefaan Holvoet Sign.  Cert. EN 97012 n° 15/066 RT Level 2 Date : 09/09/2022	Inspection Authority :  Ing. D. Andriess, IWE-BE 00130 Sign.  ATIC BV Date : 01/23
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RADIOGRAPHIC INSPECTION

RADIOGRAPHIC DATA

ORDER Nr **5685**

Data sheet Nr **5685D-01**

RADIOGRAPHIC STANDARD : **EN ISO 17636-1:2013**

Radiographic technique :

X-rays ☒

Iridium 192 ☐

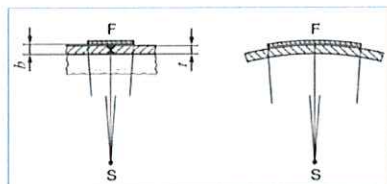
Minimum required density:

Class : A ☒ → 2,0 ☒

B ☐ → 2,3 ☐

Test arrangement : **Figure Nr 2**

(Single wall penetration of curved objects)



X-ray equipment :

Eresco 42MF2 ☒

Focal spot size acc. **EN 12543** : 3,00 mm

Radiations : 140 kV / 6,4 mA

Film / type acc. EN 584-1 : AGFA D4 Pb Vacupac / C3 ☒

Screens : **0,027 mm front and back screens of lead**

Time of exposure : **35 sec.** Source-to-film distance : **700mm**

Processing technique : **Automatic / 8 mn cycle with development temperature of 28°C**

IQI acc. EN 462: 10 FE EN ☒ IQI Position : Source side ☒

13 FE EN ☐ Film side ☐

Film viewing conditions : **in accordance with EN 25580** (40 000 cd/m² maximum)

RADIOGRAPHIC INSPECTION

RADIOGRAPHIC DATA

ORDER Nr **5685**

Data sheet Nr **5685D-02**

RADIOGRAPHIC STANDARD : **EN ISO 17636-1:2013**

Radiographic technique :

X-rays ☒

Iridium 192 ☐

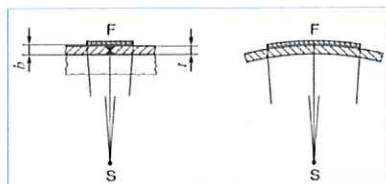
Minimum required density:

Class : A ☒ → 2,0 ☒

B ☐ → 2,3 ☐

Test arrangement : **Figure Nr 2**

(Single wall penetration of curved objects)



X-ray equipment :

Eresco 42MF2 ☒

Focal spot size acc. **EN 12543** : 3,00 mm

Radiations : 145 kV / 6,2 mA

Film / type acc. EN 584-1 : AGFA D4 Pb Vacupac / C3 ☒

Screens : **0,027 mm front and back screens of lead**

Time of exposure : **163 sec.** Source-to-film distance : **1500mm**

Processing technique : **Automatic / 8 mn cycle with development temperature of 28°C**

IQI acc. EN 462: 10 FE EN ☒ IQI Position : Source side ☒

13 FE EN ☐ Film side ☐

Film viewing conditions : **in accordance with EN 25580** (40 000 cd/m² maximum)



Wervikstraat 350 – B-8930 MENEN

VACUUM BOX TEST CERTIFICATE

Report N° 5685BVB-01 Order N° 5685B Tank n° B130700	Client BIODIESEL ARGENT II BV Drawing N° : A0072-5685B-0821
Part to be tested : FLAT BOTTOM Dimensions : Øins.6200*5 R=65 H=80mm Type of Material : W.S.1.4404	
Scope of testing WELDS ON FLAT BOTTOM Procedure according to : EN1593 Equipment used Vacuum box & soapy water Pressure - 300 mbar Metal surface Temp. 15 °C Light intensity 1000 Lux minimum	
Conclusion : No leak found Remarks : None	

Evaluated by :



Quality Harald Verhegge

Signature + Date: 01-07-2022

To Eng. S. Andrieu, WE-BE 00130
ATLC BV
10/22

Wervikstraat 350 – B-8930 MENEN

VACUUM BOX TEST CERTIFICATE

Report N°	5685BVB-02	Client	BIODIESEL ARGENT II BV
Order N°	5685B	Drawing N°	:A0072-5685B-0821
Tank n°	B130700		
Part to be tested : ROOF			
Dimensions : Øins. 6200*6 H=1189 ∠=20°			
Type of Material : W.S.1.4404			
Scope of testing WELDS ON ROOF			
Procedure according to EN1593			
Equipment used Vacuum box & soapy water			
Pressure - 300 mbar			
Metal surface Temp. 15 °C			
Light intensity 1000 Lux minimum			
Conclusion : No leak found			
Remarks : None			

Evaluated by :

Quality - Harald Verhegge

Signature + Date: 10/06/2022

Eng. S. Andzia, WE-BE 00130
ATLC BV
10/22

PENETRANT TEST CERTIFICATE

Report nr. : **5685BPT-01**

Client : **BIODIESEL ARGENT II BV**

Order nr. : **5685B-B130700**

Drawing nr. : **A0072-5685B-0821**

Part to be tested : **Nozzle implants**

Dimensions : **See drawing**

Material : **1.4404**

Heat nr.:

See "material traceability records"

Surface condition: **As welded**

Heat treatment conditions : **none**

Scope of testing: **100% of welds**

Penetrant system: **Water washable - colour contrast penetrant - to be applied by spraying**

Manufacturer: **KARL DEUTSCH**

Products in accordance with EN 3452-2 :

- Precleaning	KD-CHECK PR-2	Batch nr.	5508
- Penetrant	KD-CHECK RDP-1	Batch nr.	5789
- Excess penetrant remover	KD-CHECK PR-2	Batch nr.	5508
- Drying			
- Developer	KD-CHECK SD-1	Batch nr.	5700
- Postcleaning	Water	Batch nr.	-

Design code : **EN14015**

Procedure according to : **EN ISO 3452-1**

Acceptance standard : **EN ISO 23277**

Test temperature : **15°C minimum**

Penetration time : **10 min.**

Development time : **10 min.**

Type of light : **Normal light (500 lx mini)**

Test results : **no unacceptable indications according specification were detected**

Evaluation : **ACCEPTABLE**

PENETRANT TEST CERTIFICATE

Report nr. : **5685BPT-02**

Client : **BIODIESEL ARGENT II BV**

Order nr. : **5685B-B130700**

Drawing nr. : **A0072-5685B-0821**

Part to be tested : **CW between bottom plate and 1st shell**

Dimensions : **See drawing**

Material : **1.4404**

Heat nr.:

See "material traceability records"

Surface condition: **As welded**

Heat treatment conditions : **none**

Scope of testing: **100% of welds**

Penetrant system: **Water washable - colour contrast penetrant - to be applied by spraying**

Manufacturer: **KARL DEUTSCH**

Products in accordance with EN 3452-2 :

- Precleaning	KD-CHECK PR-2	Batch nr.	5508
- Penetrant	KD-CHECK RDP-1	Batch nr.	5789
- Excess penetrant remover	KD-CHECK PR-2	Batch nr.	5508
- Drying			
- Developer	KD-CHECK SD-1	Batch nr.	5700
- Postcleaning	Water	Batch nr.	-

Design code : **EN14015**

Procedure according to : **EN ISO 3452-1**

Acceptance standard : **EN ISO 23277**

Test temperature : **15°C minimum**

Penetration time : **10 min.**

Development time : **10 min.**

Type of light : **Normal light (500 lx mini)**

Test results : **no unacceptable indications according specification were detected**

Evaluation : **ACCEPTABLE**

PENETRANT TEST CERTIFICATE

Report nr. : **5685BPT-03**

Client : **BIODIESEL ARGENT II BV**

Order nr. : **5685B-B130700**

Drawing nr. : **A0072-5685B-0821**

Part to be tested : **10% CW and LW between shells**

Dimensions : **See drawing**

Heat nr.:

Material : **1.4404**

See "material traceability records"

Surface condition: **As welded**

Heat treatment conditions : **none**

Scope of testing: **100% of welds**

Penetrant system: **Water washable - colour contrast penetrant - to be applied by spraying**

Manufacturer: **KARL DEUTSCH**

Products in accordance with EN 3452-2 :

- Precleaning	KD-CHECK PR-2	Batch nr.	5508
- Penetrant	KD-CHECK RDP-1	Batch nr.	5789
- Excess penetrant remover	KD-CHECK PR-2	Batch nr.	5508
- Drying			
- Developer	KD-CHECK SD-1	Batch nr.	5700
- Postcleaning	Water	Batch nr.	-

Design code : **EN14015**

Procedure according to : **EN ISO 3452-1**

Acceptance standard : **EN ISO 23277**

Test temperature : **15°C minimum**

Penetration time : **10 min.**

Development time : **10 min.**

Type of light : **Normal light (500 lx mini)**

Test results : **no unacceptable indications according specification were detected**

Evaluation : **ACCEPTABLE**

PENETRANT TEST CERTIFICATE

Report nr. : **5685BPT-04**

Client : **BIODIESEL ARGENT II BV**

Order nr. : **5685B-B130700**

Drawing nr. : **A0072-5685B-0821**

Part to be tested : **Anchor chairs**

Dimensions : **See drawing**

Material : **1.4301**

Heat nr.:

See "material traceability records"

Surface condition: **As welded**

Heat treatment conditions : **none**

Scope of testing: **100% of welds**

Penetrant system: **Water washable - colour contrast penetrant - to be applied by spraying**

Manufacturer: **KARL DEUTSCH**

Products in accordance with EN 3452-2 :

- Precleaning	KD-CHECK PR-2	Batch nr.	5508
- Penetrant	KD-CHECK RDP-1	Batch nr.	5789
- Excess penetrant remover	KD-CHECK PR-2	Batch nr.	5508
- Drying			
- Developer	KD-CHECK SD-1	Batch nr.	5700
- Postcleaning	Water	Batch nr.	-

Design code : **EN14015**

Procedure according to : **EN ISO 3452-1**

Acceptance standard : **EN ISO 23277**

Test temperature : **15°C minimum**

Penetration time : **10 min.**

Development time : **10 min.**

Type of light : **Normal light (500 lx mini)**

Test results : **no unacceptable indications according specification were detected**

Evaluation : **ACCEPTABLE**

Qualitätsprüf-Zertifikat / *Quality Test Certificate*
Abnahmeprüfzeugnis / *Inspection certificate acc. to*
EN 10204-3.1

DIN EN ISO 9001
KARL DEUTSCH

GZ 14-Mai-2018

KD-Check PR-2; Art.Nr. 9907

Charge / *Batch*: 5508
Herstelldatum / *DOM*: 28.04.2021
Verwendbar bis / *best use before*: 28.04.2024

	Messwert / <i>Measurement</i>	Sollwert / <i>Setpoint</i>
Aussehen / <i>Appearance</i>	bestanden / <i>passed</i>	Identisch mit Mustermaterial / <i>Identical with reference sample</i>
Empfindlichkeit / <i>Sensitivity</i> (DIN EN ISO 3452-2) ICa, IICe	Empfindlichkeit wie Referenzsystem / <i>sensitivity conform to reference system</i>	Empfindlichkeit wie Referenzsystem / <i>sensitivity conform to reference system</i>
Dichte / <i>Density</i> [g/cm ³]; 20 °C (DIN 51757)	0,750	0,785 ± 0,039
Verdampfungsrückstand / <i>residue after evaporation</i> [mg]; (DIN EN ISO 3452-2)	bestanden / <i>passed</i>	< 5
Korrosives Verhalten / <i>Corrosive properties</i> (DIN EN ISO 3452-2)	bestanden / <i>passed</i>	bestanden / <i>passed</i>
Schwefel-Gehalt / <i>sulfur-content</i> [ppm]; (DIN EN ISO 3452-2)	< 10	< 200
Halogen-Gehalt / <i>halogen-content</i> [ppm]; (DIN EN ISO 3452-2)	< 10	< 200
Schwefel-Gehalt / <i>sulfur-content</i> [%]; (ASME Code Sec. V, Art. VI, T641)	< 0,001	< 1
Halogen-Gehalt / <i>halogen-content</i> [%]; (ASME Code Sec. V, Art. VI, T641)	< 0,001	< 1

Hinsichtlich des Gehalts an korrosiven Bestandteilen (F, Cl, S) erfüllt das Prüfmittel KD-Check PR-2 die Anforderungen der DIN EN ISO 3452-2 und darf mit dem Prädikat "Niedriger Schwefel- und Halogengehalt" bezeichnet werden. Es werden ebenfalls die Anforderungen des ASME-Code, Section V, Artikel 6, T641 (unter Anwendung der dort genannten Untersuchungsmethoden) erfüllt.
Concerning the concentration of corrosive ingredients (F, Cl, S) the product KD-Check PR-2 meets the requirements of DIN EN ISO 3452-2 and is a product with "low sulfur and halogen-content". The product meets also the requirements of ASME-Code, Section V, article 6, T641, when analysed with the analytical methods prescribed there.

Alle Messwerte liegen innerhalb der zulässigen Toleranz. / *All measurements are within the permissible tolerance.*

Datum / *date*: 04.05.2021

Unterschrift / *signature*: i.A.

Dr. Oliver Gorge

Hinweis / *Remark*:

Dieses Abnahmeprotokoll dokumentiert die Ergebnisse unserer umfassenden Qualitätsprüfung. Vor und während des Gebrauchs von Penetriermitteln muss deren Anzeigefähigkeit dem Einsatzzweck entsprechend und in angemessenen Intervallen vom Anwender überprüft werden. Die Angaben im Sicherheitsdatenblatt und im Technischen Merkblatt sind zu beachten.
This acceptance report shows the results of our comprehensive quality control. Prior to and during the use of penetrants their indication-ability must be verified by the user corresponding to the application and within reasonable intervals. Please consider the information given in the Material Safety Data Sheet (MSDS) and in our technical information sheet.

DO-9.1-085-05_9902_Abnahmeprotokoll_EN 10204-3.1

Seite / *page* 1 von / *of* 1

KARL DEUTSCH Prüf- und Messgerätebau GmbH + Co KG • Otto-Hausmann-Ring 101 • D-42115 Wuppertal • Tel. (+49-202) 71 92-0 • Fax (+49-202) 71 49 32 • e-mail: info@karldeutsch.de

Qualitätsprüf-Zertifikat / Quality Test Certificate
Abnahmeprüfzeugnis / Inspection certificate acc. to
EN 10204-3.1

DIN EN ISO 9001
KARL DEUTSCH

GZ 04-Mai-2018

KD-Check RDP-1; Art.Nr. 9901

Charge / Batch: 5789
Herstelldatum / DOM: 27.08.2021
Verwendbar bis / best use before: 27.08.2024

	Messwert / Measurement	Sollwert / Setpoint
Aussehen / Appearance	bestanden / passed	Identisch mit Mustermaterial / identical with reference sample
Empfindlichkeitsklasse / Sensitivity level (DIN EN ISO 3452-2) IIAe, IICe, IIEe	2 // Empfindlichkeit wie Referenzsystem / sensitivity conform to reference system	2 // Empfindlichkeit wie Referenzsystem / sensitivity conform to reference system
Abwaschbarkeit / Removability	bestanden / passed	Identisch mit Mustermaterial / identical with reference sample
Dichte / Density [g/cm ³]; 20 °C (DIN 51757)	0,904	0,893 ± 0,045
Viskosität / Viscosity [mm ² /s]; 20 °C (EN ISO 3104)	6,1	6,6 ± 0,7
Flammpunkt / Flash point [°C]; (EN 2719)	89	> 81
Korrosives Verhalten / Corrosive properties (DIN EN ISO 3452-2)	bestanden / passed	bestanden / passed
Schwefel-Gehalt / sulfur-content [ppm]; (DIN EN ISO 3452-2)	< 10	< 200
Halogen-Gehalt / halogen-content [ppm]; (DIN EN ISO 3452-2)	< 10	< 200
Schwefel-Gehalt / sulfur-content [%]; (ASME Code Sec. V, Art. VI, T641)	< 0,001	< 1
Halogen-Gehalt / halogen-content [%]; (ASME Code Sec. V, Art. VI, T641)	< 0,001	< 1
Wassergehalt / Water content [%]; (DIN EN ISO 3452-2)	0,1	< 5

Hinsichtlich des Gehalts an korrosiven Bestandteilen (F, Cl, S) erfüllt das Prüfmittel KD-Check RDP-1 die Anforderungen der DIN EN ISO 3452-2 und darf mit dem Prädikat "Niedriger Schwefel- und Halogengehalt" bezeichnet werden. Es werden ebenfalls die Anforderungen des ASME-Code, Section V, Artikel 6, T641 (unter Anwendung der dort genannten Untersuchungsmethoden) erfüllt.

Concerning the concentration of corrosive ingredients (F, Cl, S) the product KD-Check RDP-1 meets the requirements of DIN EN ISO 3452-2 and is a product with "low sulfur and halogen-content". The product meets also the requirements of ASME-Code, Section V, article 6, T641, when analysed with the analytical methods prescribed there.

Alle Messwerte liegen innerhalb der zulässigen Toleranz. / All measurements are within the permissible tolerance.

Datum / date: 01.09.2021

Unterschrift / signature: i.A.

Dr. Oliver Götz

Hinweis / Remark:

Dieses Abnahmeprotokoll dokumentiert die Ergebnisse unserer umfassenden Qualitätsprüfung. Vor und während des Gebrauchs von Penetramitteln muss deren Anzeigefähigkeit dem Einsatzzweck entsprechend und in angemessenen Intervallen vom Anwender überprüft werden. Die Angaben im Sicherheitsdatenblatt und im Technischen Merkblatt sind zu beachten.

This acceptance report shows the results of our comprehensive quality control. Prior to and during the use of penetrants their indication-ability must be verified by the user corresponding to the application and within reasonable intervals. Please consider the information given in the Material Safety Data Sheet (MSDS) and in our technical information sheet.

DO-9.1-084-06_9901_Abnahmeprotokoll_EN 10204-3.1

Seite / page 1 von / of 1

KARL DEUTSCH Prüf- und Messgerätebau GmbH + Co KG · Otto-Hausmann-Ring 101 · D-42116 Wuppertal · Tel. (+49-202) 71 92-0 · Fax (+49-202) 71 49 32 · e-mail: info@karldeutsch.de

Qualitätsprüf-Zertifikat / Quality Test Certificate
Abnahmeprüfzeugnis / Inspection certificate acc. to
EN 10204-3.1

DIN EN ISO 9001
KARL DEUTSCH

Gz 04-Mat-2018

KD-Check SD-1; Art.Nr. 9903

Charge / Batch: 5700
 Herstellungsdatum / DOM: 15.07.2021
 Verwendbar bis / best use before: 15.07.2024

	Messwert / Measurement	Sollwert / Setpoint
Aussehen / Appearance	bestanden / passed	Identisch mit Mustermaterial / identical with reference sample
Empfindlichkeit / Sensitivity (DIN EN ISO 3452-2) IA _d , IB _d , IIA _e , IIB _e	Empfindlichkeit wie Referenzsystem / sensitivity conform to reference system	Empfindlichkeit wie Referenzsystem / sensitivity conform to reference system
Dichte / Density [g/cm ³]; 20 °C (DIN 51757)	0,783	0,785 ± 0,039
Feststoffgehalt / Solid content [%]; (DIN EN ISO 3452-2)	12,8	13,8 ± 1,4
Leistung des Entwicklers / Developer Performance (DIN EN ISO 3452-2)	bestanden / passed	Feine, ebene, nicht reflektierende bzw. nicht fluoreszierende Deckschicht; Vergrößerung der Anzeigen / fine, even, not-reflective and not-fluorescent coating; Increase of Indications
Abwaschbarkeit / Removability (AMS 2644)	bestanden / passed	Abwaschbarkeit wie Referenzsystem / removability conforms to reference system
Dispersionsfähigkeit / Redispersibility (AMS 2644; DIN EN ISO 3452-2)	bestanden / passed	bestanden / passed
Korrosives Verhalten / Corrosive properties (DIN EN ISO 3452-2)	bestanden / passed	bestanden / passed
Schwefel-Gehalt / sulfur-content [ppm]; (DIN EN ISO 3452-2)	< 10	< 200
Halogen-Gehalt / halogen-content [ppm]; (DIN EN ISO 3452-2)	10	< 200
Schwefel-Gehalt / sulfur-content [%]; (ASME Code Sec. V, Art. VI, T641)	< 0,001	< 1
Halogen-Gehalt / halogen-content [%]; (ASME Code Sec. V, Art. VI, T641)	0,001	< 1

Hinsichtlich des Gehalts an korrosiven Bestandteilen (F, Cl, S) erfüllt das Prüfmittel KD-Check SD-1 die Anforderungen der DIN EN ISO 3452-2 und darf mit dem Prüftitel "Niedriger Schwefel- und Halogengehalt" bezeichnet werden. Es werden ebenfalls die Anforderungen des ASME-Code, Section V, Artikel 6, T641 (unter Anwendung der dort genannten Untersuchungsmethoden) erfüllt.
 Concerning the concentration of corrosive ingredients (F, Cl, S) the product KD-Check SD-1 meets the requirements of DIN EN ISO 3452-2 and is a product with "low sulfur and halogen-content". The product meets also the requirements of ASME-Code, Section V, article 6, T641, when analysed with the analytical methods prescribed there.

Alle Messwerte liegen innerhalb der zulässigen Toleranz. / All measurements are within the permissible tolerance.

Datum / date: 10.09.2021

Unterschrift / signature: i.A.

Dr. Oliver Gornz

Hinweis / Remark:

Dieses Abnahmeprotokoll dokumentiert die Ergebnisse unserer umfassenden Qualitätsprüfung. Vor und während des Gebrauchs von Penetramitteln muss deren Anzeigefähigkeit dem Einsatzzweck entsprechend und in angemessenen Intervallen vom Anwender überprüft werden. Die Angaben im Sicherheitsdatenblatt und im Technischen Merkblatt sind zu beachten.
 This acceptance report shows the results of our comprehensive quality control. Prior to and during the use of penetrants their indication-ability must be verified by the user corresponding to the application and within reasonable intervals. Please consider the information given in the Material Safety Data Sheet (MSDS) and in our technical information sheet.

DO-9.1-086-07_9903_Abnahmeprotokoll_EN 10204-3.1

Seite / page 1 von / of 1

KARL DEUTSCH Prüf- und Messgerätebau GmbH + Co KG · Otto-Hausmann-Ring 101 · D-42115 Wuppertal · Tel. (+49-202) 71 92-0 · Fax (+49-202) 71 49 32 · e-mail: info@karldeutsch.de



**Recognized Third Party Organisation
(PED 2014/68/EU, Art. 20)**

CERTIFICATE Nr 14/175

Visa by employer



Siège Social - Sociale Zetel
Rue Bruynstraat 51 - B-1120 Brussels

National organisation in compliance with EN ISO/IEC 17024

**BELGIAN
ASSOCIATION FOR
NONDESTRUCTIVE
TESTING** A.S.B.L.-V.Z.W.

Recognized Third Party Organisation
(PED 2014/68/EU, Art. 20)

CERTIFICATE Nr 15/066

Metallic Sector

We hereby state that, on basis of the qualification documents and having passed successfully the examinations

HOLVOET Stefaan

Date of birth : **02-12-57** on **Wevelgem**

is certified from **30-04-15** onwards, for the NDT method

RT level **II** until **29-04-25**

Renewal without examination

in conformity with the BANT Procedure for the Certification of NDT personnel.

This Certification Procedure is in compliance with **EN ISO9712:2012**

Brussels, **07-11-19**

Signature of the holder



Seal of
BANT

A. IEZZI
President of the
Certification Bureau



Accreditation
Nr 518-PERS
Portée disponible
sur www.belac.be

CERTIFICATIE
VAN PERSONEN
Scoop op aanvraag

CERTIFICATION
OF PERSONNEL
Scope on request



This certificate is not official without
BANT's 3D authentication hologram.

Visa by employer



Siège Social - Sociale Zetel
Rue Bruynstraat 51 - B-1120 Brussels

National organisation in compliance with EN ISO/IEC 17024

**BELGIAN
ASSOCIATION FOR
NONDESTRUCTIVE
TESTING** A.S.B.L.-V.Z.W.

Recognized Third Party Organisation
(PED 2014/68/EU, Art. 20)

CERTIFICATE Nr 21/025

Metallic Sector

We hereby state that, on basis of the qualification documents and having passed successfully the examinations

VERHEGGE Harald

Date of birth : 25-03-71 on Likasi

is certified from 23-02-21 onwards, for the NDT method

PT level II until 22-02-26

in conformity with the BANT Procedure for the Certification of NDT personnel.

This Certification Procedure is in compliance with **EN ISO9712:2012**

Signature of the holder



Seal of
BANT

Brussels, 23-02-21

A. IEZZI
President of the
Certification Bureau



Accreditation
Nr 518-PERS
Portée disponible
sur www.belac.be

CERTIFICATIE
VAN PERSONEN
Scoop op aanvraag

CERTIFICATION
OF PERSONNEL
Scope on request



This certificate is not official without
BANT's 3D authentication hologram.

Visa by employer



PRESSURE TEST ON VESSEL

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

ZIEMANN
CRANE ENGINEERING



HOLVRIEKA
CRANE ENGINEERING

GAUGE TABLE

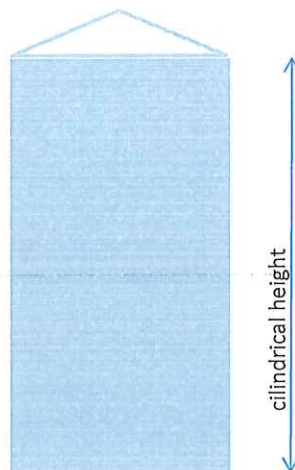
5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

18/

Order 5685B TANK B130700

diameter: 6200 mm
cylindrical height: 7580 mm

height:	Content
80 mm	2415 liter
1000 mm	30191 liter
2000 mm	60381 liter
3000 mm	90572 liter
4000 mm	120763 liter
5000 mm	150954 liter
6000 mm	181144 liter
7000 mm	211335 liter
7050 mm	212844 liter
7580 mm	228846 liter



VERIFICATON NAMEPLATE

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³

VERIFICATION NAMEPLATE

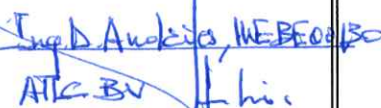
Order Nr. **5685B B130700**



WERVIKSTRAAT 350 B-8930 MENEN

Order Nr.	5685B / B130700	Constr.Year	2022
Acc. Norm	EN14015	Weight	10500 kg
TANK			
Main Dimensions	Ø6200 x 9297 mm		
Density for design	0,875	kg/l	
Min. / Max. Pressure	+0,20 / ATM	bar	
Operating Temp.	+40	°C	
Test pressure	FoW	bar	
Max. cyl. volume	212800	L	
Report Nr	ATLC 19 / 220627 / 13	Year :	'22
Controle Inst.			

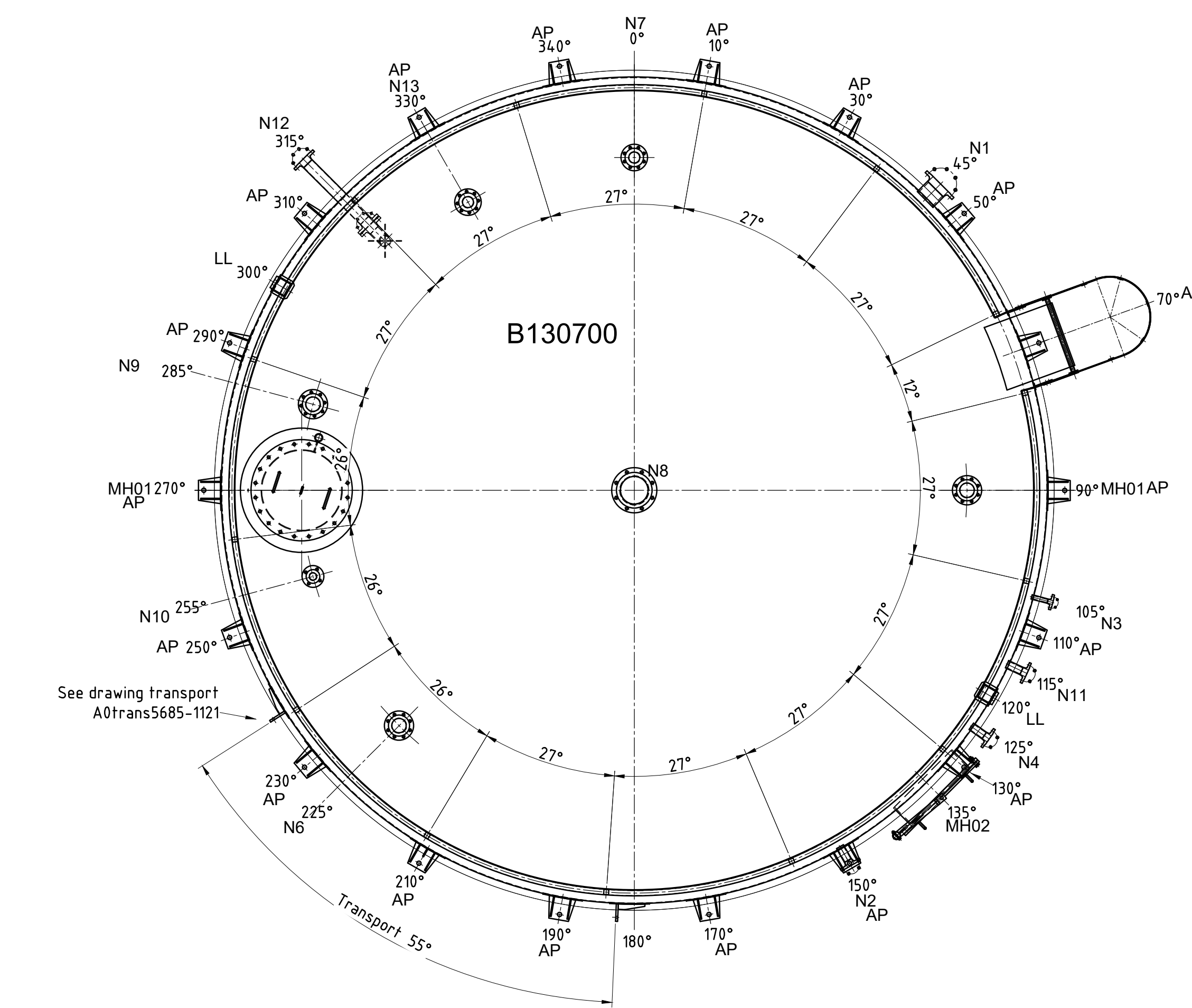



Eng. D. Andrijs, WEBCO 130
ATLC BV



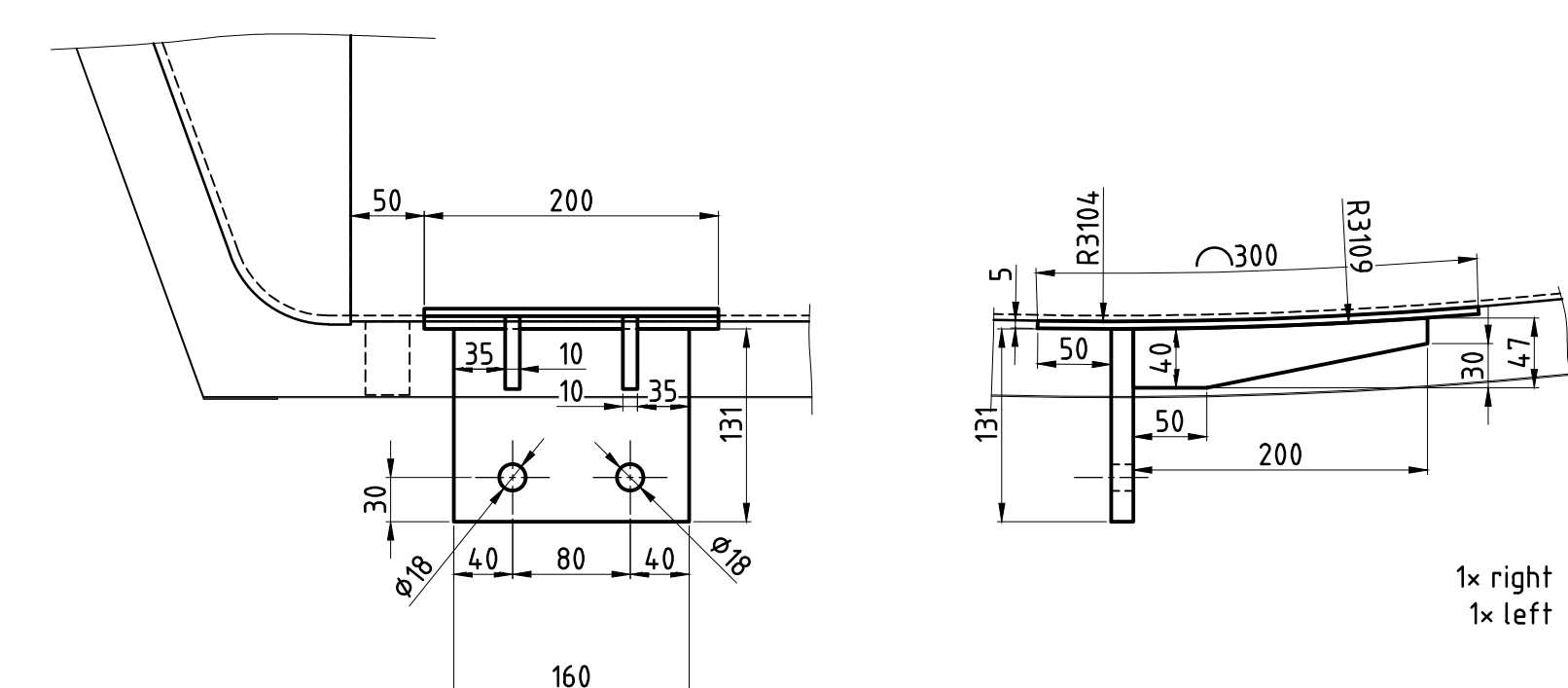
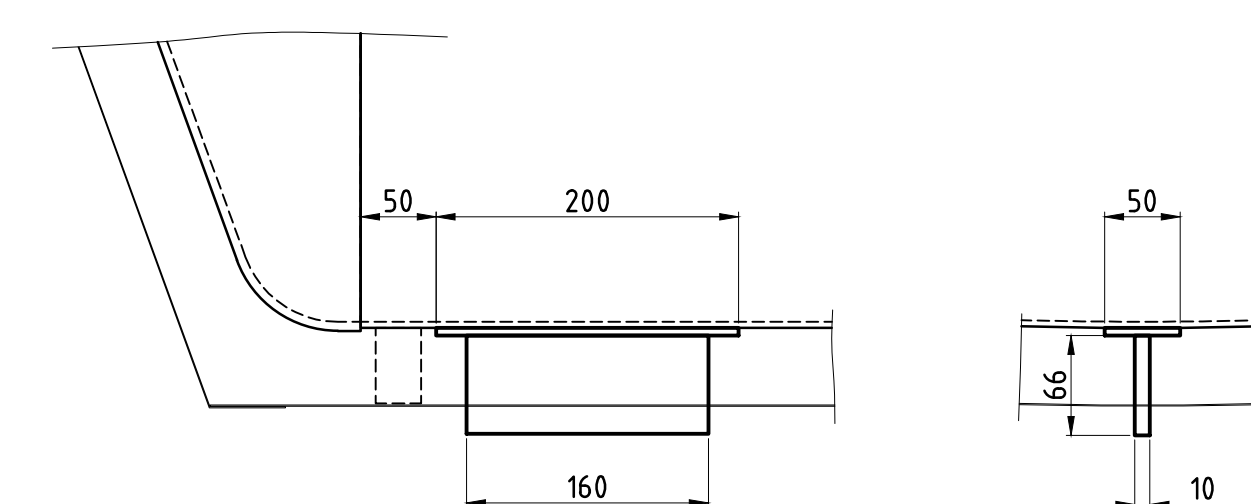
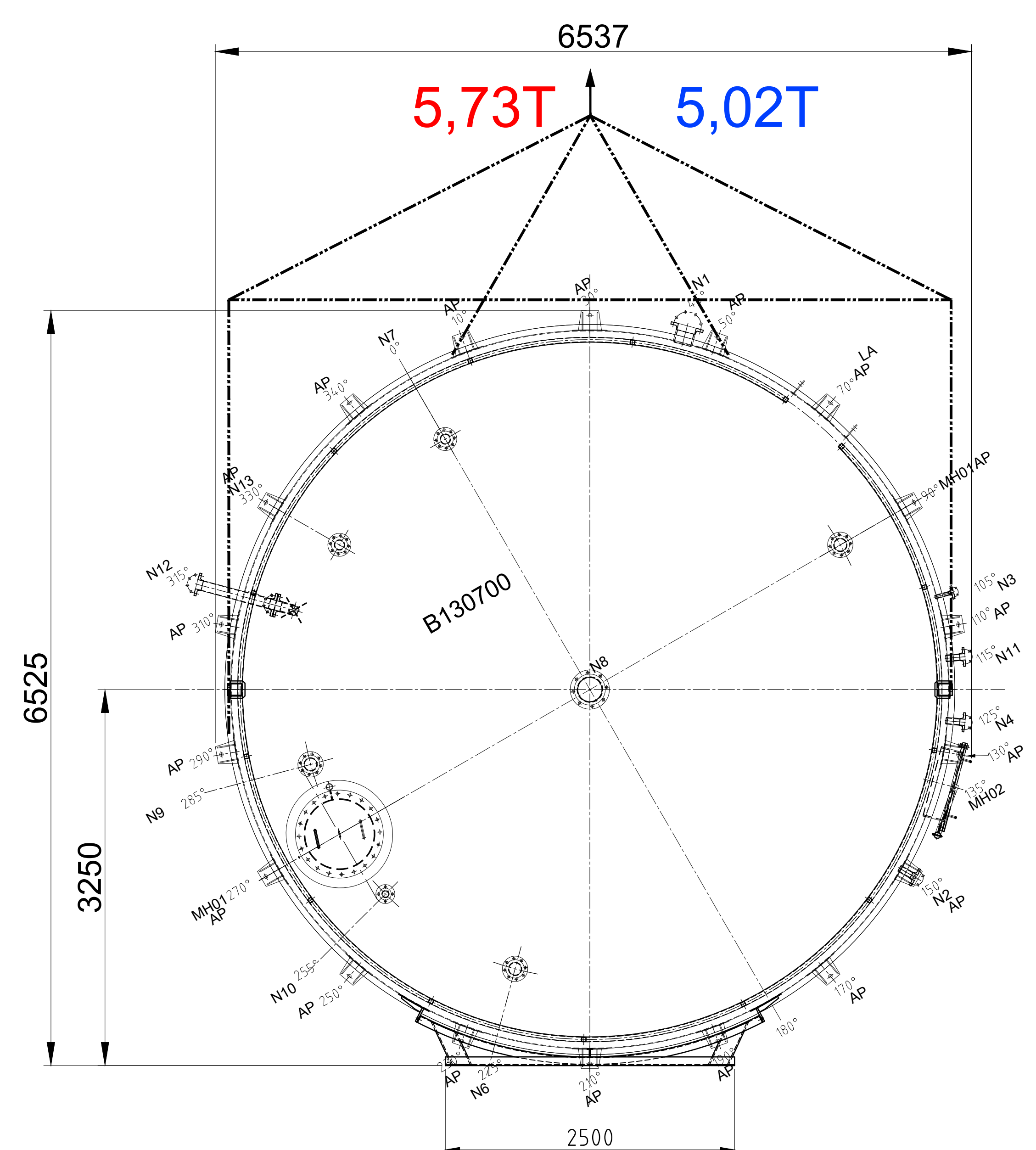
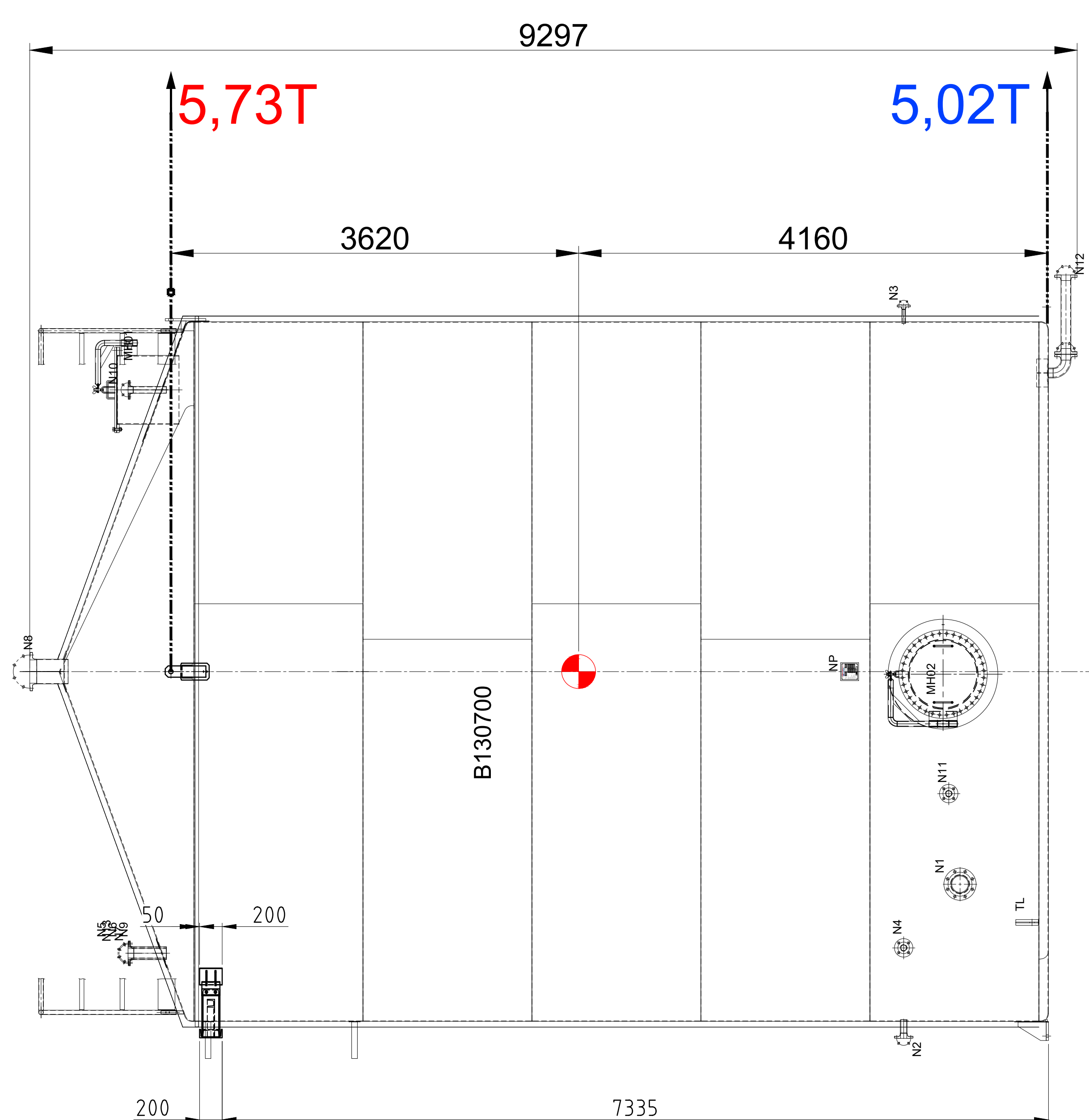
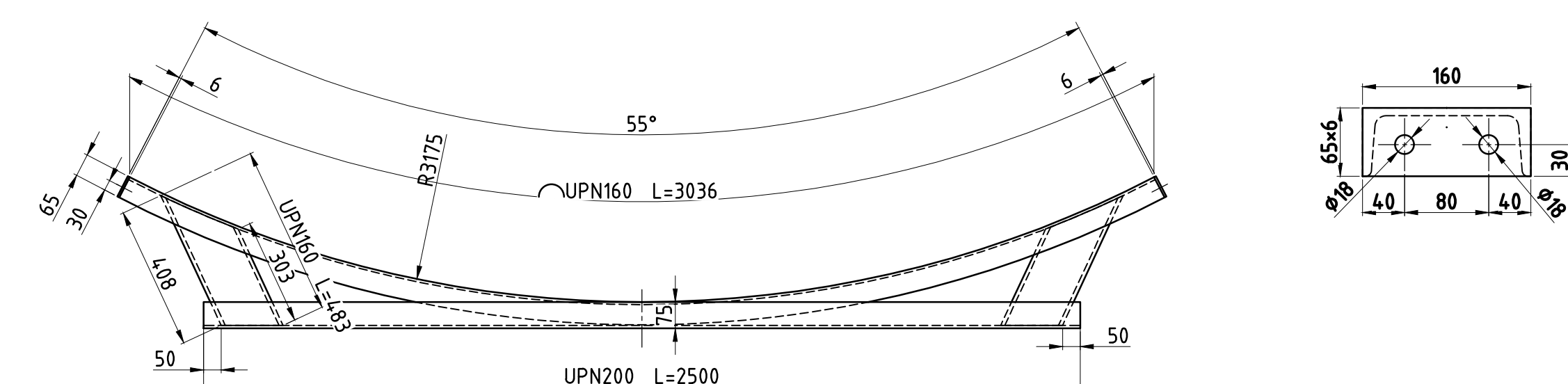
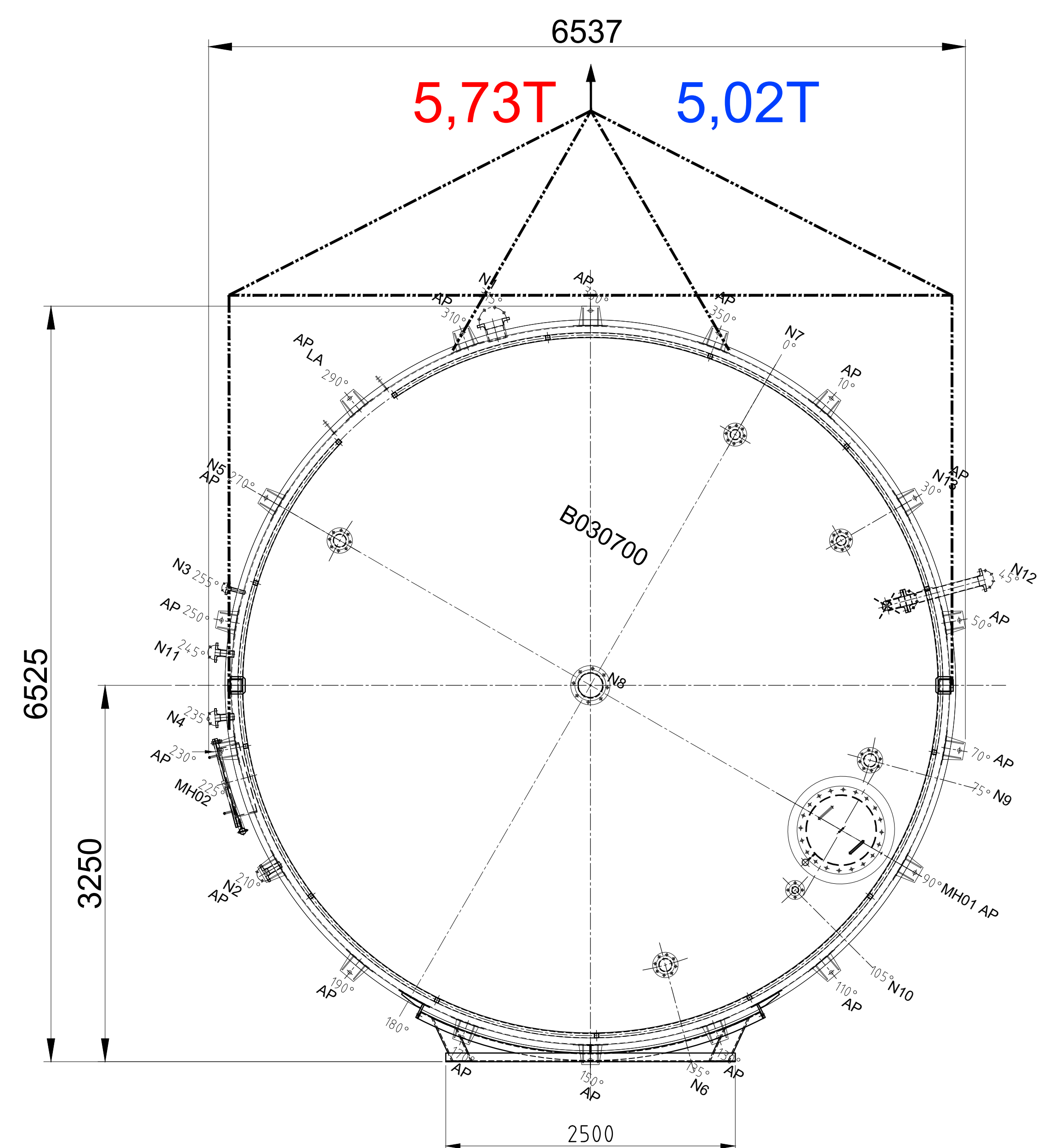
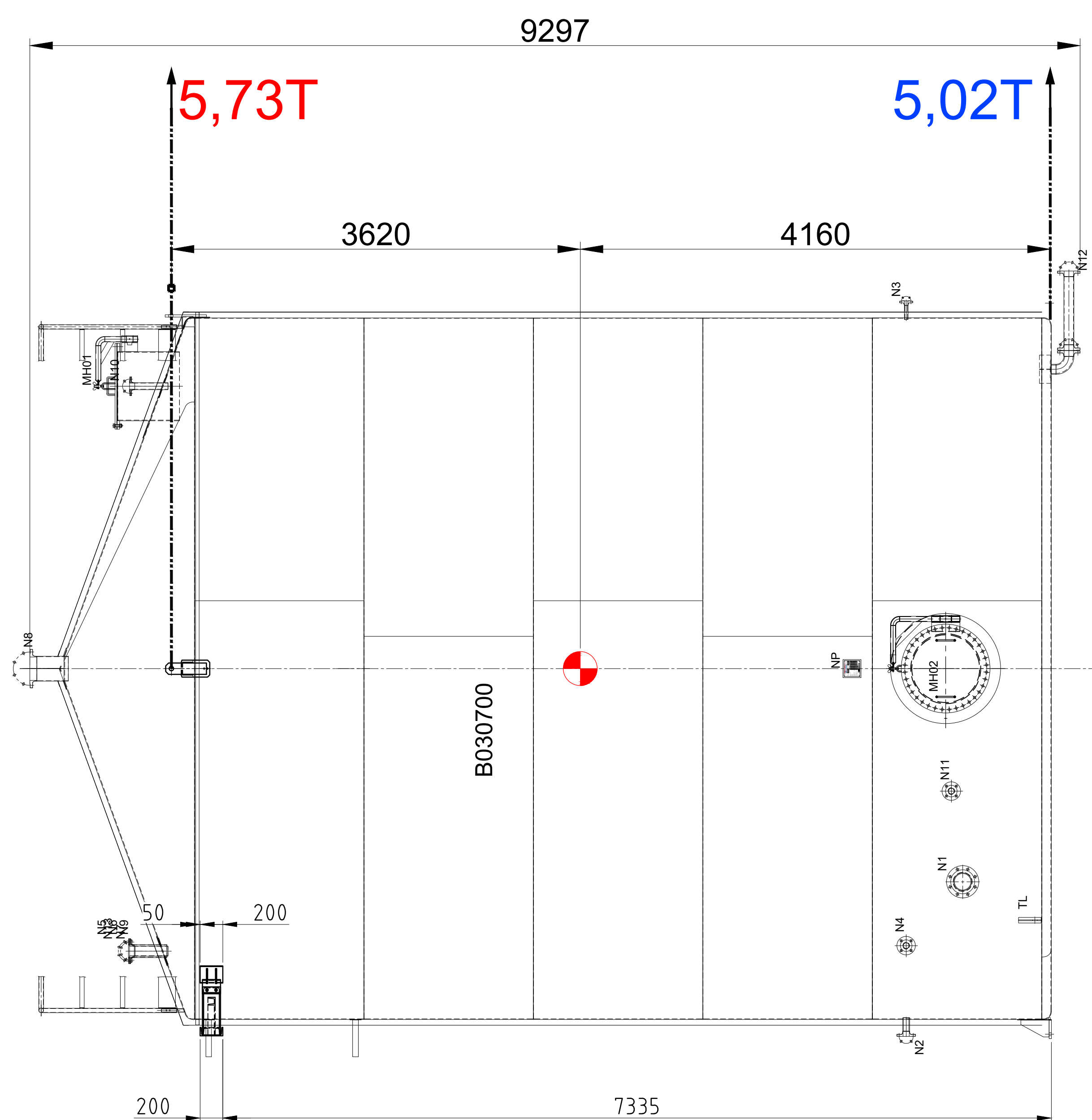
DRAWINGS

5685B - BIODIESEL ARGENT II BV
1 x Vert. St. Steel Tanks B130700
Cap. ca 212,8m³ /242m³



POS. NUMBER	DN	PN	DESCRIPTIONS
N1	1	150	16 Outlet product
N2	1	50	16 Temperature transmitter
N3	1	25	40 Sample connection
N4	1	50	16 Spare
N5	1	100	16 Inlet product 1
N6	1	100	16 Inlet product 2
N7	1	80	16 Spare
N8	1	200	10 Vent connection
N9	1	100	16 Level transmitter radar
N10	1	50	16 Level switch HH
N11	1	50	16 Level switch LL
N12	1	80	16 Drainage
N13	1	80	16 Spare
MH01	1	600	...
MH02	1	600	...
			Manhole on top
			Manhole bolted with davit
LL	2		Lifting lug
NP	1		Nameplate
AP	8		Anchor
EL	1		Earthing lug
RA	1		Railing
LA	1		Ladder





POS.	DWG.NR.	NUMBER	DESCRIPTION	MAT.	DIMENSIONS
			Tanks B130700 & B130701		ORDERNR.: 5685
			TRANSPORT		REF. NR.: B030700 B130701
			DRW.: N.R	DATE: 30/11/21	SCALE: 1/30
			BIODIESEL ARGENT H2 BV		
			