

Order : SNL-01417427

Index : 181107BA800

Ref. :

Artikel: 3" S 10S WNF 150 316(L) \* RF

Levering: 0085461752/000320

Hoeveelh: 31 ST

Charge: CH-8935

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APPROVED

date 03-01-2019

RAIB

signature

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# CHANDAN STEEL LIMITED (GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001 : 2015 CERTIFICATE No. 04 100 011022

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L/c. No.: NLHM0017736

L/c.Date: 25.07.2018 OF ABN AMRO BANK N.V., AMSTERDAM.

WORKS: Plot No. 35, G. I. D. C., Umbergaon

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## 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/ 00740-11/2018-19 Date of Issue : 28.09.2018 P.O. No. : 3483521 Invoice No. & Date : EXP/ 00740/2018-19 Dtd.28.09.2018						
ITEM DESCRIPTION													
STAINLESS STEEL FORGED & FULLY MACHINED FLANGES													
SR NO.	Article No.	Heat No.	Pcs	Box No.	Wt.Kgs	Grade	Size Description	Process Route					
19	158451	CH-8919	105	22	87.15	1.4401/1.4404/F316/316L	1" SORF 150 LBS	Electric Induction Melting, A.O.D. Refining Continuous Casting & Hot Forging.					
22	158737	CH-8935	211	22&25	1057.11	1.4401/1.4404/F316/316L	3" WNRF 150 LBS 10S						
28	158888	CH-8725	26	6	130.52	1.4401/1.4404/F316/316L	2" WNRF 600LBS S-80S						
-	-	-	-	-	-	-	-						
CHEMICAL COMPOSITION (Weight %)													
SR NO.	Article No.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	OTHERS
19	158451	0.026	0.31	1.65	0.032	0.020	16.75	2.04	10.05	-	-	0.068	-
22	158737	0.022	0.46	1.61	0.037	0.006	16.70	2.03	10.08	-	-	0.062	-
28	158888	0.030	0.53	1.77	0.040	0.007	16.70	2.07	10.09	-	-	0.070	-
MECHANICAL PROPERTIES													
SR NO.	Article No.	HEAT TREATMENT BATCH NO.	Yield Strength (N/mm <sup>2</sup> )		Tensile Strength N/mm <sup>2</sup> (R <sub>m</sub> )	% EL	% RA	Hardness (B.H.N.)	Charpy (V) Impact Test (2mm) at 20° C (Joules) Sample Size - 10 x 10 x 55mm				
			0.2% (R <sub>0.2</sub> )	1% (R <sub>0.1</sub> )					I	II	III	Avg.	
19	158451	F2/018/2486	291	336	595	58	71	171-175	158	165	169	164	
22	158737	F2/018/2655	299	334	592	50	71	167-171	175	171	173	173	
28	158888	F2/018/2254	291	332	599	59	76	174-178	163	168	173	168	
-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	

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.
- Micro Structure Reveals Austenitic grains with annealing twins and is free from carbide precipitation ( At 500 X ).
- Inter-Granular Corrosion Test (ASTM A262 - 15 (Pr.E)):- Satisfactory.
- The material conforms to EN 10222 - 5 - 2017, ASTM A 182 - 17, ASME Section II, Part A-SA 182 - 17 & Dimension confirms to ASME B16.5 - 13 Specification.
- The material hardness conforms to NACE MR0175/ISO 15156-3:2015 & NACE MR0103-2015.
- 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).
- 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  
WORKS INSPECTOR

APPROVED

date 03-01-2019

RAIB

signature