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Pos: 1



CERTIFICATE - EN 10204 3.1

CUSTOMER: M/S. VAN LEEUWEN STAINLESS B.V. INDUSTRIEWEG 26 4153 BW BEESD	MANUFACTURER'S SYMBOL 	MTR NO. FRG/27587 - E
		DATE 11.08.2009
		MATERIAL SPECIFICATION ASTM A182/A182M - 07 ASME SA 182 /SA 182M - 07
		GRADE F316/316L
ORDER NO.: 904220 U.C.: NLNL1NL09M051935 DT 2009-05-20		DIMENSIONAL SPECIFICATION ASME B16.5 - 2003
		MATERIAL CONFORMS TO NACE MR0 175 - 2003 STAINLESS STEEL FLANGES

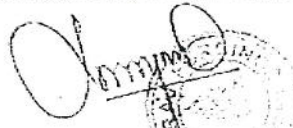
CHEMICAL ANALYSIS														
SL NO	ITEM DESCRIPTION	HEAT NO	CITY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM		
1	1-1/2" BLRF 300#	79283	26	0.026	1.03	0.45	0.012	0.040	16.92	10.08	2.04	770		
2	2" BLRF 150#	80008	225	0.023	1.73	0.48	0.011	0.037	16.80	10.99	2.04	815		
3	4" BLRF 150#	79915	60	0.020	1.76	0.41	0.029	0.036	16.78	10.07	2.03	760		
4	10" BLRF 150#	16504	10	0.020	1.75	0.49	0.012	0.041	16.65	10.08	2.02	710		
5	1" LAP JOINT 150#	79883	30	0.027	1.73	0.47	0.016	0.039	16.64	10.01	2.03	830		
6	6" LAP JOINT 150#	79835	40	0.025	1.71	0.46	0.020	0.040	16.75	10.08	2.03	780		
7	3/4" SORF 150#	79997	160	0.026	1.74	0.41	0.024	0.039	16.78	10.08	2.04	620		
8	1" SORF 150#	79997	275	0.026	1.74	0.41	0.024	0.039	16.78	10.08	2.04	620		

MECHANICAL PROPERTIES								IMPACT TEST			
HEAT NO	ITEM DESCRIPTION	TENSILE STRENGTH (MPa)	YIELD STRENGTH (MPa)	ELONGATION % (L ₀)	REDUCTION OF AREA %	CHARPY VAPOR (AT RT ±0.05°C)				HARDNESS (HV0.1)	
						1	2	3	AUG		
79283	1-1/2" BLRF 300#	525.92	243.37	64.20	71.66	-	-	-	-	143	
80008	2" BLRF 150#	563.02	272.34	61.00	72.11	-	-	-	-	157	
79915	4" BLRF 150#	545.96	261.23	52.40	55.61	-	-	-	-	153	
16504	10" BLRF 150#	593.09	290.93	60.20	70.04	-	-	-	-	163	
79883	1" LAP JOINT 150#	583.20	287.66	61.00	70.39	-	-	-	-	170	
79835	6" LAP JOINT 150#	567.53	276.10	55.80	71.66	-	-	-	-	160	
79997	3/4" SORF 150#	548.95	255.07	52.20	71.66	-	-	-	-	153	
79997	1" SORF 150#	548.95	255.07	52.20	71.66	-	-	-	-	153	

MELTING PROCESS: INDUCTION / AOD (IR) / CG/CAST
HEAT TREATMENT: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION: SATISFACTORY
PMI: NO OBJECTION (NUN, TESTED WITH MOBILE SPECTRO)
INTER GRANULAR CORROSION TEST: PASSED IGC TEST IN ACCORDANCE WITH ASTM A 262 PRACTICE E
MICRO OBSERVATION: NO CARBIDE PRECIPITATION OBSERVED ON GRAIN BOUNDARIES
RADIOACTIVITY TEST: ALL THE ABOVE MATERIAL IS TESTED FOR RADIOACTIVITY AND FOUND WITH IN THE LIMIT OF BACKGROUND RADIATION

CARACTERISTIQUES GARANTIES
 La Société Viraj Forgings Ltd. garantit que les produits objet du présent certificat respectent en leur totalité les prescriptions de l'article 15 de l'Arrêté Ministériel du 24 mars 1978 modifié.
 C_{max} ≤ 0.25%, P_{max} ≤ 0.035%, S_{max} ≤ 0.035%
 Re_{0.2} ≤ 500 N/mm², E_{0.01} ≤ 0.8%, A₅₀ (L₀) ≥ 55%, S_{0.5} ≤ 0.16% en long. R(A-Z) ≥ 1050°C
 WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF IRON ORIGIN




 VIJAY KUMAR PILLAI
 MANAGER - QA