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218221



VIRAJ Forgings

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MILL TEST CERTIFICATE - EN 10204 3.1

CUSTOMER : M/S: PIPING SERVICE STEUER NEDERLAND BV LEEGHWATERSTRAAT 111 3364 AE SLIEDRECHT NEDERLAND				MANUFACTURER'S SYMBOL 		MTR NO. FRG/27700 - B							
						DATE 15.06.2009							
						MATERIAL SPECIFICATION ASTM A182/A182M-07 ASME SA182/SA182M - 07							
						GRADE F316/316L							
						DIMENSIONAL SPECIFICATION ASME B16.5 2003							
						MATERIAL CONFORMS TO NACE MR0175 - 2003							
						STAINLESS STEEL FORGED FLANGES							
ORDER NO.: 09_05_222 / EV				CHEMICAL ANALYSIS									
SL NO	ITEM DESCRIPTION	HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM	
1	1" BLRF 150#	79883	100	0.027	1.73	0.47	0.016	0.039	16.54	10.01	2.03	830	
2	1" BLRF 300#	79997	50	0.025	1.74	0.41	0.024	0.039	16.78	10.08	2.04	620	
3	1/2" BLRF 150#	79883	100	0.027	1.73	0.47	0.016	0.039	16.54	10.01	2.03	830	
4	1/2" BLRF 300#	80008	75	0.023	1.75	0.46	0.011	0.037	16.80	10.09	2.04	815	
5	10" BLRF 150#	16504	10	0.020	1.75	0.49	0.012	0.041	16.65	10.08	2.02	710	
6	12" BLRF 150#	16885	5	0.019	1.83	0.40	0.013	0.039	16.70	10.07	2.04	800	
7	2" BLRF 150#	79908	75	0.021	1.89	0.45	0.026	0.039	16.57	10.07	2.03	780	
* 8	2" BLRF 600#	80021	25	0.026	1.78	0.45	0.029	0.038	16.60	10.08	2.03	850	
MECHANICAL PROPERTIES						IMPACT TEST							
HEAT NO	ITEM DESCRIPTION	TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % (Low4D)	REDUCTION OF AREA %	CHARPY V-NOTCH 10x10mm (JOULES) 20°C			HARDNESS (BHN)				
						1	2	3	AVG				
79883	1" BLRF 150#	583.20	287.68	61.60	70.39	-	-	-	170				
79997	1" BLRF 300#	548.95	255.07	61.60	71.65	-	-	-	153				
79883	1/2" BLRF 150#	583.20	287.68	61.60	70.39	-	-	-	170				
80008	1/2" BLRF 300#	563.62	272.34	61.00	72.11	-	-	-	157				
16504	10" BLRF 150#	593.09	290.93	60.20	76.04	-	-	-	163				
16885	12" BLRF 150#	564.02	275.06	51.40	69.51	-	-	-	150				
79908	2" BLRF 150#	594.83	302.49	51.20	69.02	-	-	-	172				
80021	2" BLRF 600#	527.18	252.04	61.00	72.95	-	-	-	149				
MELTING PROCESS		: INDUCTION / AOP (IRS) / CONCAST											
HEAT TREATMENT		: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED											
DIMENSIONAL INSPECTION		: CONFORM WITH THE SPECIFICATION (100% INSPECTED)											
SURFACE INSPECTION		: SATISFACTORY											
PMI		: NO OBJECTION (100% TESTED WITH MOBILE SPECTRO)											
INTER GRANULAR CORROSION TEST		: PASSED IGC TEST IN ACCORDANCE WITH ASTM A262 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											
WE CERTIFY THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE ORDER/CONTRACT AND IS OF INDIAN ORIGIN.													
STEUER NEDERLAND B.V. 1-1 QA/QC Dept. 22435 A. Goedel							 WORKS INSPECTOR						

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