TÜV SÜD ISO 9001 : 2000

TÜV NORD

APPROVED MANUFACTURER AD 2000 WO PED 97/23/EC

VIRAJ

INSPECTION CERTIFICATE & MILL TEST REPORT - EN 10204 3.1

CUSTOMER :

MANUFACTURER'S SYMBOL	
MTR NO.	FRG / 27830 - G
DATE	24.07.2009
MATERIAL SPECIFICATION	ASTM A182/A182M- 09
	ASME SA182/SA182M - 09
GRADE	F316/316L
DIMENSIONAL SPECIFICATION	ASME B16.5 2009
MATERIAL CONFORMS TO NACE MR 0175 - 2003 & NACE MR 0103 - 2005	
STAINLESS STEEL FORGED FLANGES	

ORDER NO. : - L25980 / ATL

CHEMICAL ANALYSIS

SL NO	ITEM DESCRIPTION			HEAT NO	QTY	%C	%Mn	%Si	%S	%P	%Cr	%Ni	%Mo	N2 PPM		
1	18"	SORF	150#	80591	5	0.020	1.73	0.45	0.024	0.039	16.58	10.08	2.04	755		
2	2"	SORF	150#	80261	400	0.020	1.72	0.47	0.010	0.040	16.63	10.08	2.02	760		
3	2-1/2"	SORF	150#	18034	30	0.021	1.71	0.41	0.010	0.042	16.78	10.04	2.03	760		
4	3"	SORF	150#	17735	100	0.023	1.76	0.45	0.015	0.035	16.60	10.04	2.02	750		
5	3"	SORF	300#	17035	20	0.028	1.81	0.41	0.018	0.039	16.59	10.04	2.03	720		
6	4"	SORF	150#	80261	120	0.020	1.72	0.47	0.010	0.040	16.63	10.08	2.02	760		
7	4"	SORF	300#	80244	25	0.025	1.71	0.43	0.012	0.038	16.81	10.02	2.02	780		
8	1-1/2"	SWRF S40	150#	79997	25	0.026	1.74	0.41	0.024	0.039	16.78	10.08	2.04	620		

MECHANICAL PROPERTIES

HEAT NO	ITEM DESCRIPTION			TENSILE STRENGTH (Mpa)	YIELD STRENGTH (Mpa)	ELONGATION % Lo=4D	REDUCTION OF AREA %	IMPACT TEST CHARPY V-NOTCH AT RT (JOULES) 1	2	3	AVG	HARDNESS (Rbw)
80591	18"	SORF	150#	522.06	253.32	61.80	68.52	-	-	-	-	152
80261	2"	SORF	150#	551.31	255.47	54.80	70.79	-	-	-	-	156
18034	2-1/2"	SORF	150#	521.35	224.02	60.20	74.38	-	-	-	-	153
17735	3"	SORF	150#	542.21	265.05	56.40	69.02	-	-	-	-	150
17035	3"	SORF	300#	519.51	234.38	65.00	72.11	-	-	-	-	143
80261	4"	SORF	150#	551.31	255.47	54.80	70.79	-	-	-	-	156
80244	4"	SORF	300#	535.27	255.55	56.60	72.99	-	-	-	-	154
79997	1-1/2"	SWRF S40	150#	548.95	255.07	52.20	71.66	-	-	-	-	153

MELTING PROCESS	: INDUCTION / AOD (IRS) / CONCAST
HEAT TREATMENT	: SOLUTION ANNEALED AT 1050°C AND WATER QUENCHED
DIMENSIONAL INSPECTION	: CONFORM WITH THE SPECIFICATION (100% INSPECTED)
SURFACE INSPECTION	: SATISFACTORY
INTER GRANULAR CORROSION TEST	: PASSED IGC TEST IN ACCORDANCE WITH ASTM A262 PRACTICE E
PMI	: [illegible] (100% TESTED WITH MOBILE SPECTRO)
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

PLEASA ANALIZAR ESTA DE 6

CONTROL DE CALIDAD

FECHA 26 Ene 2010

C000190

Enrique Ruiz

WORKS INSPECTOR