

MATERIAL TEST CERTIFICATE

Dimension Standard: ASME B16.9-01

Material Standard: ASTM A234-02a WPB NACE MR 0175-02

ITEM	DESCRIPTION	SIZE	QTY (PCS)	HEAT NO.	CHEMICAL COMPOSITION (%)											
					C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Nb	CE
1	CON REDUCER SCH40 WPB	12 X 10	20	707	0.30 Max.	0.10 Min.	0.29-1.06	0.050 Max.	0.058 Max.	0.40 Max.	0.40 Max.	0.15 Max.	0.40 Max.	0.08 Max.	0.02 Max.	0.50 Max.
2	CON REDUCER SCH40 WPB	16 X 14	1	307	0.210	0.280	0.550	0.015	0.005	0.010	0.290	0.010	0.120	0.020	0.009	0.33
3	CON REDUCER SCH40 WPB	20 X 16	6	603	0.200	0.280	0.570	0.028	0.014	0.017	0.090	0.060	0.120	0.030	0.007	0.33
4	CON REDUCER SC-180 WPB	20 X 10	1	432	0.190	0.250	0.540	0.015	0.005	0.017	0.130	0.040	0.150	0.020	0.005	0.31
5	CON REDUCER SC-180 WPB	2 X 1	100	046	0.190	0.270	0.520	0.008	0.015	0.017	0.100	0.005	0.170	0.010	0.008	0.30
6	CON REDUCER SC-180 WPB	2 X 1 1/2	100	046	0.190	0.270	0.520	0.008	0.015	0.019	0.100	0.005	0.170	0.010	0.008	0.30
7	CON REDUCER SC-180 WPB	3 X 2	50	957	0.180	0.240	0.530	0.007	0.008	0.014	0.210	0.006	0.100	0.030	0.003	0.30
8	CON REDUCER SC-180 WPB	4 X 2	50	893	0.180	0.280	0.490	0.018	0.008	0.022	0.080	0.006	0.120	0.010	0.008	0.28
9	CON REDUCER SC-180 WPB	4 X 3	50	893	0.180	0.280	0.490	0.018	0.008	0.017	0.012	0.007	0.150	0.030	0.006	0.28
10	CON REDUCER SC-180 WPB	6 X 4	70	901	0.180	0.250	0.500	0.011	0.008	0.050	0.090	0.006	0.130	0.010	0.007	0.29

MECHANICAL PROPERTIES

ITEM	DESCRIPTION	SIZE	QTY (PCS)	HEAT NO.	TENSILE STRENGTH Min. 415 Mpa	YIELD STRENGTH Min. 240 Mpa	EL2IN (%) Min. 30%	HARDNESS (HB) 197 Max.	NOTES
2	CON REDUCER SCH40 WPB	16 X 14	1	307	480	305	31	< OR = 187	
3	CON REDUCER SCH40 WPB	20 X 16	6	603	475	205	33	< OR = 187	
4	CON REDUCER SCH40 WPB	20 X 10	1	432	490	280	30	< OR = 187	
5	CON REDUCER SC-180 WPB	2 X 1	100	046	445	344	30	< OR = 187	
6	CON REDUCER SC-180 WPB	2 X 1 1/2	100	046	445	344	30	< OR = 187	
7	CON REDUCER SC-180 WPB	3 X 2	50	957	480	330	35	< OR = 187	
8	CON REDUCER SC-180 WPB	4 X 2	50	893	445	285	36.5	< OR = 187	
9	CON REDUCER SC-180 WPB	4 X 3	50	893	445	285	36.5	< OR = 187	
10	CON REDUCER SC-180 WPB	6 X 4	70	901	477	282	37.5	< OR = 187	

HOT FORMED 620-980°C AND COOLED IN STILL AIR
 $C_{total} + Ni + C + Mo = < OR = 1.00\%$
 $C + Mo = < OR = 0.32\%$

We hereby certify that the products described herein has been manufactured in compliance with ASTM A234 WPB and ANSI B16.9 and that the test results shown herein are correct.

QUALITY MANAGER

