

# MATERIAL TEST CERTIFICATE

Dimension Standard: ASME B16.9-01

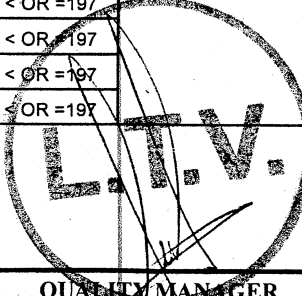
Material Standard: ASTM A234-02a WPB NACE MR 0175-03

ITEM	DESCRIPTION	SIZE	QTY (PCS)	HEAT NO.	CHEMICAL COMPOSITION (%)											
					C	Si	Mn	P	S	Cr	Ni	Mo	Cu	V	Nb	CE
					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.	.50 Max.
1	RED. TEE SCH40 WPB	12X6	10	123	0.240	0.310	0.410	0.010	0.017	0.040	0.070	0.030	0.090	0.008	0.002	0.33
2	RED. TEE SCH40 WPB	12X8	10	123	0.240	0.310	0.410	0.010	0.017	0.040	0.070	0.030	0.090	0.008	0.002	0.33
3	RED. TEE SCH40 WPB	12X10	10	123	0.240	0.310	0.410	0.010	0.017	0.040	0.070	0.030	0.090	0.008	0.002	0.33
4	RED. TEE SCH40 WPB	14X10	5	124	0.210	0.300	0.430	0.009	0.015	0.040	0.060	0.040	0.080	0.004	0.003	0.31
5	RED. TEE SCH40 WPB	14X12	5	124	0.210	0.300	0.430	0.009	0.015	0.040	0.060	0.040	0.080	0.004	0.003	0.31
6	RED. TEE SCH80 WPB	3X2	100	112	0.250	0.240	0.380	0.009	0.016	0.030	0.050	0.030	0.080	0.003	0.005	0.33
7	RED. TEE SCH80 WPB	4X2	100	113	0.200	0.250	0.460	0.007	0.013	0.050	0.070	0.040	0.070	0.006	0.004	0.31
8	RED. TEE SCH80 WPB	4X3	100	113	0.200	0.250	0.460	0.007	0.013	0.050	0.070	0.040	0.070	0.006	0.004	0.31
9	RED. TEE SCH80 WPB	6X3	120	115	0.220	0.270	0.420	0.008	0.011	0.040	0.080	0.050	0.050	0.007	0.002	0.32
10	RED. TEE SCH80 WPB	6X4	120	115	0.220	0.270	0.420	0.008	0.011	0.040	0.080	0.050	0.050	0.007	0.002	0.32

## MECHANICAL PROPERTIES

ITEM	DESCRIPTION	SIZE	QTY (PCS)	HEAT NO.	TENSILE STRENGTH Min. 415 Mpa	YIELD STRENGTH Min. 240 Mpa	EL2IN (%) Min. 30%	HARDNESS (HB)	NOTES
								197 Max.	
1	RED. TEE SCH40 WPB	12X6	10	123	487	374	35	< OR =197	HOT FORMED 620-980°C AND COOLED IN STILL AIR  Cu+Ni+Cr+Mo = <OR =1.00%  Cr+Mo = < OR =0.32%
2	RED. TEE SCH40 WPB	12X8	10	123	487	374	35	< OR =197	
3	RED. TEE SCH40 WPB	12X10	10	123	487	374	35	< OR =197	
4	RED. TEE SCH40 WPB	14X10	5	124	450	378	36	< OR =197	
5	RED. TEE SCH40 WPB	14X12	5	124	450	378	36	< OR =197	
6	RED. TEE SCH80 WPB	3X2	100	112	487	378	39	< OR =197	
7	RED. TEE SCH80 WPB	4X2	100	113	486	375	38	< OR =197	
8	RED. TEE SCH80 WPB	4X3	100	113	486	375	38	< OR =197	
9	RED. TEE SCH80 WPB	6X3	120	115	488	376	35	< OR =197	
10	RED. TEE SCH80 WPB	6X4	120	115	488	376	35	< OR =197	

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.

  
 L.T.V.  
 QUALITY MANAGER