

Test Certificate

EN 10204 3.1

Customer	PROVEEDORA DE MATERIALES ANGER, S.A DE C.V.,- 330	Certificate No.	5955
P.O.No		Certificate Date	06/11/2015
P.O.Date	19/10/2015	Inspection By	AEL
Material Spec.	ASTM A234 Gr. WPB ED.2013 ADD.2011	Dimensional Standard	ASME B16.9 ED2012

Sr No	Party Code	Size (Inch)	Item	Sch	Qty	ID No.	HT	Hardness (BHN)	Remarks
1		6 X 5	CONCENTRIC REDUCER	STD	158	E124	SR	150-158	
2		2-1/2	90 Deg. LR ELBOW	STD	1085	E108	HF	148-160	
3		10	90 Deg. LR ELBOW	STD	180	E144	HF	152-154	
4		8	90 Deg. LR ELBOW	STD	180	E171	HF	150-158	
5		12 X 8	CONCENTRIC REDUCER	STD	31	E064	SR	148-150	
6		3	TEE	XH	250	E099	SR	150-160	
7		6	TEE	XH	60	EC94	SR	152-164	
8		8 X 5	CONCENTRIC REDUCER	STD	50	E062	SR	154-150	
9		2-1/2	90 Deg. LR ELBOW	STD	15	E156	HF	156-162	

ID NO.	Chemical Composition (%)														Physical Properties(Product)			
	C	Mn	P	S	SI	Cu	Ni	Cr	Mo	Cb	Ti	Nb	V	C.E	UTS MPa	0.2% Proof Stress Mpa	EL %	RA %
E156	0.2050	0.4960	0.0160	0.0100	0.2180	0.0050	0.0020	0.0190	0.0010	-	-	-	0.0010	0.292	500.65	319.22	20.32	-
E168	0.2050	0.5500	0.0020	0.0030	0.3120	0.0070	0.0110	0.0220	0.0030	-	-	-	0.0010	0.303	444.34	309.35	30.74	-
E171	0.1920	0.5020	0.0020	0.0110	0.3290	0.0040	0.0030	0.0300	0.0020	-	-	-	0.0010	0.283	493.37	331.26	22.18	-
E144	0.2160	0.4110	0.0070	0.0030	0.2190	0.0110	0.0340	0.0580	0.0010	-	-	-	0.0050	0.300	439.15	290.25	25.60	-
E124	0.2100	0.4400	0.0160	0.0070	0.2300	0.0100	0.0620	0.0890	0.0010	-	-	-	0.0020	0.307	480.00	277.00	27.20	-
E062	0.2200	0.4800	0.0130	0.0070	0.2100	0.0400	0.0100	0.0200	0.0020	-	-	-	0.0010	0.308	447.00	321.00	32.70	-
E064	0.1700	0.5000	0.0140	0.0070	0.2500	0.0060	0.0120	0.0210	0.0010	-	-	-	0.0030	0.260	481.00	297.00	34.68	-
E099	0.2000	0.4700	0.0160	0.0080	0.2400	0.0200	0.0100	0.0200	0.0050	-	-	-	0.0010	0.286	438.00	318.00	24.38	-
E094	0.1900	0.4900	0.0150	0.0050	0.2400	0.0100	0.0200	0.0200	0.0050	-	-	-	0.0010	0.279	472.00	240.00	30.56	-

Heat Treatment

Heat Treatment Code	Heat Treatment Particulars
HF	Hot formed at 620°C to 980°C and subsequently cooled in still air.
SR	Stress Relieved at 675°C & subsequently cooled in still air.

REMARKS: 1) Material was manufactured, sample tested and inspected in accordance with indicated specifications and was found to meet the requirements. (2) Test Specimens :- Transverse (3) Starting Material :- Carbon Steel Seamless Pipe ASTM A106 Gr. B ED.2013 (4) No weld repair was performed. (5) Material Conforms to NACE MR0175-2007 / NACE MR103-2007 Only Hardness.

MARKING DETAILS: COMPANY LOGO, SIZE, SCH., MATERIAL GRADE, HEAT NO., COUNTRY OF ORIGIN

We hereby certify that the products enlisted above have been supplied in accordance with the purchaser's requirement and the test results mentioned above are correct.


 Engineer (Quality Assurance).