



Tubos de Acero de México, S.A.
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CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)		Numero: Number: 25432	Pagina/Page: 1
Vendido a: Sold to: PROVEEDORA DE MATERIALES ANCEP, S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 6170-6117-6153	Lista de Empaque: Packing List: 13130	Fecha/Date: 15 de Febrero de 2012
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MR0103-2003	Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2007	Factura/Invoice: Bocas / Ends Biselado / Bevelled ends	

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION				PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S48017	396	CODO 3 X 90° R.L. CED-STD	334	508	30	104					
2	T58293	43	RED CONC. 10 X 8 CED-STD	317	490	41	100					
3	T57395	2	CODO 6 X 90° R.L. CED-XS	323	479	44	103					
4	T52744	15	CODO 6 X 90° R.L. CED-XS	331	497	41	122					
5	S49296	200	CODO 1 1/2 X 90° R.L. CED-STD	357	511	51	130					
6	T58243	6	CODO, 10 X 45° CED-XS	291	467	36	101					
7	T56665	10	RED. CONC. 12 X 10 CED-STD	330	487	41	122					
8	T55897	4	TEE 10 CED-STD	291	475	34	96					
9	T56718	80	TEE 6 CED-STD	280	482	36	107					
10	T55440	20	RED. CONC. 6 X 4 CED-XS	333	495	39	126					
11	T51311	3	CODO 12 X 45° SHC-80	303	477	35	111					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S48017	48017	0.330	0.180	0.770	0.010	0.001	0.300	0.050	0.032	0.020	0.019	0.002	0.002
CF	T58293	58293	0.300	0.170	0.670	0.006	0.002	0.280	0.060	0.052	0.016	0.030	0.000	0.000
HF	T57395	57395	0.310	0.170	0.700	0.009	0.002	0.270	0.040	0.067	0.021	0.030	0.000	0.000
HF	T52744	52744	0.340	0.190	0.770	0.010	0.000	0.300	0.040	0.067	0.035	0.040	0.000	0.000
HF	S49296	49296	0.320	0.180	0.750	0.009	0.002	0.280	0.040	0.029	0.020	0.054	0.001	0.002
HF	T58243	58243	0.320	0.170	0.760	0.014	0.001	0.300	0.060	0.054	0.015	0.030	0.000	0.000
CF	T56665	56665	0.310	0.180	0.670	0.010	0.001	0.280	0.050	0.072	0.026	0.030	0.000	0.000
HF	T55897	55897	0.300	0.170	0.680	0.013	0.001	0.320	0.050	0.059	0.014	0.030	0.000	0.000
HF	T56718	56718	0.310	0.180	0.670	0.009	0.000	0.280	0.040	0.073	0.016	0.030	0.000	0.000
CF	T55440	55440	0.000	0.180	0.770	0.009	0.001	0.280	0.050	0.061	0.015	0.030	0.010	0.000
HF	T51311	51311	0.310	0.180	0.660	0.011	0.001	0.270	0.040	0.062	0.027	0.040	0.000	0.000

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecánicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima (Tubería Sin Costura) conforme ASTM A106 Grado B con N°.

We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or supplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B, N°.

11058107 12002317 11054423 11052519 11061966 11061770
12062323 11048475 11044305 11034215 10043843

Este material cumple con los requerimientos especificados en la orden.
The material of this certificate heat number mentioned above is in compliance with the requirements specified in the order.

Notas: Formado en caliente a 620°C-980°C, enfriado al aire. Formado en frío normalizado a 540°C max. Tiempo de permanencia 10'. Inspección Dimensional: Satisfactoria. HF: FORMADO EN CALIENTE/HOT FORMED	Notas: Hot formed fittings in a range from 620°C to 980°C, cooled in still air. Cold formed normalized at 540°C max. Holding time 10'. Visual dimensional check: Satisfactory. CF: FORMADO EN FRIO/COLD FORMED	 Quality Manager / Jefe de Calidad: ING. WALDO GALLEGOS GALVAN	The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting. The values of hardness for fittings NPS 2 1/2" and smaller ones obtain from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60. Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.
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