



Tubos de Acero de Mexico, S.A.
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**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204 2004E - ISO 10474 3.1.B)

Número:
Number:
27388

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Vendido a: Sold to:	TUBERIA Y VALVULAS DEL NORTE, S.A. DE C.V.	Pedido del Cliente No: Customer's Order No:	13191-	Lista de Empaque Packing List:	14185	Fecha/Datã: Date:	17 de Abril de 2013
Especificaciones y Grados / Standard or Specification and Steel Grade	Dimensiones y tolerancias / Dimension and tolerances		Factura/Invoice: Boças / Ends Biselado / Bevelled ends				
Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.76-2003	ASME B 16.9 - 2007						
Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MR0103-2003							

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
12	T56077	1	CODO 2 1/2 X 180° R L. CED-XS	322	473	41	120					
13	S45402	2	CODO 2 1/2 X 45° CED-XS	294	466	36	130					
14	S29808	17	CODO 2 1/2 X 45° CED-XS	292	461	35	124					
15	S33571	22	CODO 2 1/2 X 45° CED-XS	313	487	34	120					
16	T36472	10	TEE RED. 18 X 8 CED-XS	326	498	37	93					

ANÁLISIS 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	T56077	56077	0.300	0.170	0.690	0.013	0.001	0.280	0.050	0.046	0.010	0.030	0.000	0.000
HF	S45402	45402	0.317	0.180	0.740	0.009	0.001	0.290	0.040	0.038	0.010	0.021	0.001	0.001
HF	S29808	29808	0.332	0.190	0.720	0.008	0.001	0.290	0.050	0.060	0.020	0.060	0.001	0.001
HF	S33571	33571	0.340	0.200	0.758	0.010	0.003	0.270	0.030	0.024	0.010	0.016	0.003	0.003
HF	T36472	36472	0.320	0.170	0.760	0.011	0.002	0.280	0.060	0.063	0.026	0.030	0.000	0.000

Certificamos que los resultados de los Análisis Químicos y Pruebas Mecánicas son verídicos 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) parts conform to ASTM A106 Grade B N° 11039211 329136 3508001324 3002244 8032710

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 820°C-880°C, enfriado al aire. / Hot formed fittings in a range from 820°C to 880°C, cooled in air.
 Nota: Formado en frío normalizado a 940°C max. / Cold formed normalized at 940°C max.
 Tiempo de permanencia 10'. / Holding time 10'.
 Inspección Dimensional Satisfactoria. / Visual dimensional check: Satisfactory.

Quality Manager/Jefe de Calidad:
 ING. WALDO CALLEGOS GALVAN

The Products described herein were produced in accordance with the above referenced specification and are furnished with the "R" which is permanently marked to each fitting. The values of hardness for fittings NPS 2 1/2" and smaller are taken from the conversion of hardness Rockwell C 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 C a dureza Brinell HBW mediante la tabla WILSON-DESK CHART 60.

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