



Tubos de Acero de México, S.A.
Carr. Mty-Laredo Km 24.2
Apartado Postal 43
(65550) C. de Flores, N.L. Méx.
(52) 81 8305 9600 tel
(52) 81 8305 9620 fax

CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)		Numero: Number: 25325	Pagina/Page: 1
Vendido a: Sold to: PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 5960 - 5996 -	Lista de Empaque: Packing List: 13077	Fecha/Date: 23 de Enero 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	TS1307	30	CODO 14 X 90° R.L. CED-STD	306	486	34	105					
2	TS1308	61	CODO 14 X 90° R.L. CED-STD	278	477	34	103					
3	TS1305	53	CODO 14 X 90° R.L. CED-STD	289	482	34	89					
4	TS2829	93	TEE 8 CED-STD	305	468	31	126					
5	TS4971	35	TEE 8 CED-STD	284	468	47	118					

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	TS1307	51307	0.310	0.180	0.660	0.012	0.001	0.280	0.040	0.049	0.020	0.030	0.000	0.000
HF	TS1308	51308	0.310	0.180	0.660	0.014	0.001	0.280	0.040	0.055	0.024	0.030	0.000	0.000
HF	TS1305	51305	0.300	0.170	0.660	0.011	0.001	0.260	0.050	0.062	0.030	0.030	0.000	0.000
HF	TS2829	52829	0.310	0.180	0.670	0.012	0.001	0.280	0.040	0.056	0.022	0.030	0.000	0.000
HF	TS4971	54971	0.300	0.170	0.670	0.008	0.003	0.270	0.050	0.048	0.023	0.030	0.000	0.000

Certificamos que los resultados de los Análisis Químicos 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°:
10041364 10041848 10040737 11015913 11025978

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.

<p>Notas:</p> <p>Formado en caliente a 620°C-960°C, enfriado al aire. Formado en frío normalizado a 940°C max. Tiempo de permanencia 10". Inspección Dimensional: Satisfactoria. HF: FORMADO EN CALIENTE/HOT FORMED</p>	<p>Notas:</p> <p>Hot formed fittings in a range from 620°C to 960°C, cooled in still air. Cold formed normalized at 940°C max. Holding time 10". Visual dimensional check: Satisfactory. CF: FORMADO EN FRIO/COLD FORMED</p>	<p><i>Waldo Gallegos Galvan</i></p> <p>Quality Manager / Jefe de Calidad: ING. WALDO GALLEGOS GALVAN</p>	<p>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.</p>
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