



Tubos de Acero de México, S.A.  
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<b>CERTIFICADO DE CALIDAD</b> <b>INSPECTION CERTIFICATE</b> (DIN EN 10204:2004E - ISO 10474 3.1.B)	Numero: Number: 25847	Pagina/Page: 1	Fecha/Date: 28 de Mayo de 2012
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Vendido a: Sold to: <b>PLESA ANAHUAC Y CIA. S.A. DE C.V.</b>	Pedido del Cliente No: Customers Order No: 12701 - 12886	Lista de Empaque: Packing List: 13378	Fecha/Date: 28 de Mayo de 2012
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.76-2003 Conform to ASME II Ed. 2001 ASME SA-234, Grado WPB, NACE MR0103-2003		Dimensiones y tolerancias / Dimension and tolerances <b>ASME B 16.9 - 2007</b>	
		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	GANTIDAD 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	T56072	40	CODO 4 X 45° CED-STD	305	481	30	140					
2	T60764	20	CODO 8 X 45° CED-STD	326	484	36	143					
3	T59630	2	CODO 16 X 90° R.I. CED-STD	253	471	39	138					

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	T56072	60551	0.340	0.200	0.740	0.009	0.001	0.290	0.050	0.059	0.010	0.025	0.001	0.002
HF	T60764	60551	0.310	0.170	0.660	0.016	0.001	0.300	0.060	0.075	0.031	0.040	0.000	0.000
HF	T59630	59630	0.330	0.190	0.650	0.010	0.001	0.270	0.050	0.058	0.023	0.040	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) cuts conform to ASTM A106 Grado B N°:

12030082 12027519 12025132 11933963 11939229 12018667  
 11935788 11952253 11952253 12023604 11961966

Esta 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.

Nota: Formado en caliente a 820°C-980°C, enfriado al Air Formed in hot furnace at 840°C max. Tiempo de permanencia 10". Inspección Dimensional: Satisfactoria. HF: FORMADO EN CALIENTE/HOT FORMED	Nota: Hot formed fittings in a range from 820°C to 980°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	 <b>Quality Manager / Jefe de Calidad:</b> <b>ING. WALDO GALLEGOS GALVAN</b>	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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