



Tubbs 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:
 26301

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Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	6246 - 6271 -	Lista de Empaque: Packing List:	13649	Fecha/Date:	20 de Septiembre 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, 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
12	T60552	129	CODO B X 90° R.L. CED-STD	302	479	36	144					
13	T60997	51	CODO 6 X 90° R.L. CED-STD	323	486	30	151					
14	T61223	300	CODO 5 X 45° CED-STD	293	489	32	143					
15	T61223	290	CODO 5 X 90° R.L. CED-STD	293	489	32	143					

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	T60552	60552	0.290	0.160	0.650	0.019	0.003	0.280	0.050	0.072	0.019	0.030	0.000	0.000
HF	T60997	60997	0.320	0.180	0.720	0.015	0.002	0.290	0.060	0.072	0.019	0.040	0.000	0.000
HF	T61223	61223	0.310	0.170	0.700	0.016	0.001	0.290	0.040	0.078	0.027	0.030	0.000	0.000
HF	T61223	61223	0.310	0.170	0.700	0.016	0.001	0.290	0.040	0.078	0.027	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) certificate conform to ASTM A106 Grade B N°:

12029473 12048885 12042266 12042268

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-850°C, enfriado al aire. / Formado en frío normalizado a 940°C max. / Tiempo de permanencia 10'. / Inspección Dimensional: Satisfactoria.

Notas: Hot formed forged in a range from 620°C to 850°C, cooled in still air. / Cold formed normalized at 940°C max. / Holding time 10'. / 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 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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