



**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204:2004E - ISO 10474 3.1.B)

Número:
Number: 23325
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Iubbs de Acero de México, S.A.
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Vendido a: Sold to: PROVEEDORA DE MATERIALES AN CER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 5654 - 5617 -	Lista de Empaque: Packing List: 11910	Fecha/Date: 6 de Abril de 2010
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234M WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234M Grade WPB, NACE MR0103-2003	Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2007 and ASME B 16.28 - 1994		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	T41975	4	CODO 14 X 45° CED-STD	330	496	43	118					
2	T38541	4	CODO 14 X 45° CED-STD	299	486	43	120					
3	T47708	13	CODO 10 X 45° CED-STD	317	485	40	120					
4	T42699	4	TEE RED. 8 X 6 CED-STD	331	522	32	98					
5	S31051	10	CODO 3 X 90° R.C. CED-XS	297	473	33	133					
6	T47436	10	TEE 12 CED-XS	370	494	49	120					
7	S31050	10	CODO 1 1/2 X 45° CED-STD	367	534	32	130					

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	T41975	41975	0.300	0.170	0.690	0.008	0.001	0.270	0.050	0.069	0.019	0.030	0.000	0.000
HF	T38541	38541	0.300	0.170	0.670	0.007	0.001	0.280	0.050	0.072	0.013	0.040	0.000	0.000
HF	T47708	47708	0.300	0.170	0.670	0.012	0.002	0.300	0.040	0.078	0.014	0.030	0.000	0.000
HF	T42699	42699	0.350	0.190	0.840	0.018	0.001	0.320	0.040	0.062	0.023	0.020	0.000	0.000
HF	S31051	31051	0.340	0.200	0.750	0.008	0.001	0.280	0.030	0.030	0.010	0.021	0.001	0.000
HF	T47436	47436	0.300	0.170	0.650	0.010	0.003	0.290	0.060	0.068	0.021	0.030	0.002	0.000
HF	S31050	31050	0.330	0.190	0.760	0.007	0.002	0.270	0.030	0.023	0.010	0.013	0.001	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°: 8062571 8012244 10006118 9007734 457123 9066421 457348

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°: 8062571 8012244 10006118 9007734 457123 9066421 457348

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.

Notes:
Formado en caliente a 620°C-980°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

Notes:
Hot formed fittings in a range from 620°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


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.