



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

Número:
Number: 22529

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Tubbs 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

Vendido a: PROVEEDORA DE MATERIALES ANKER, S.A.
Sold to: DE C.V.

Pedido del Cliente No: 5386 - 5382 -
Customers Order No:

Lista de Empaque: 11466
Packing List:

Fecha/Date: 8 de Junio de 2009

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
12	S31159	13	CODO 4 X 90° R.C. CED-STD	312	489	31	135					
13	S22176	11	CODO 4 X 90° R.C. CED-STD	292	457	32	102					
14	S32307	24	CODO 4 X 90° R.C. CED-STD	240	426	36	101					
15	T40546	2	RED. CONC. 14 X 10 CED-STD	256	472	30	108					
16	T41223	30	CODO 8 X 90° R.C. CED-STD	338	506	41	120					
17	S43766	43	RED. CONC. 4 X 3 CED-STD	341	501	40	124					
18	S22475	7	RED. CONC. 4 X 3 CED-STD	324	504	34	116					

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	S31159	31159	0.350	0.200	0.790	0.014	0.001	0.280	0.040	0.039	0.010	0.014	0.001	0.000
HF	S22176	22176	0.310	0.180	0.720	0.008	0.001	0.310	0.030	0.008	0.010	0.010	0.001	0.002
HF	S32307	32307	0.320	0.180	0.720	0.012	0.002	0.290	0.050	0.043	0.010	0.029	0.001	0.000
CF	T40546	40546	0.310	0.180	0.670	0.009	0.001	0.290	0.050	0.058	0.009	0.030	0.000	0.000
HF	T41223	41223	0.300	0.170	0.660	0.011	0.002	0.270	0.050	0.068	0.010	0.030	0.000	0.000
CF	S43766	43766	0.350	0.200	0.820	0.011	0.001	0.290	0.030	0.062	0.020	0.023	0.002	0.001
CF	S22475	22475	0.330	0.190	0.800	0.009	0.001	0.260	0.030	0.028	0.010	0.020	0.001	0.001

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°: 462047 378589 469041 8043402 8059874 311696 380958

"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-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.