



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: 26595	Pagina/Page: 2
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 14222	Lista de Empaque: Packing List: 13794	Fecha/Date: 22 de Noviembre 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
12	T5013	80	CODO 4 X 45° CED-STD	329	497	32	141					
13	T4465	50	CODO 3 X 45° CED-STD	380	504	30	148					
14	S46244	100	CODO 2 X 45° CED-STD	280	475	30	135					
15	T59834	36	CODO 8 X 90° R.L. CED-XS	273	464	37	155					
16	T61866	13	CODO 10 X 45° CED-STD	326	496	34	146					
17	T62024	4	CODO 10 X 45° CED-STD	338	498	35	148					
18	T61178	9	CODO 10 X 45° CED-STD	277	456	38	152					
19	T58642	10	CODO 10 X 45° CED-STD	250	453	38	102					
20	T61866	10	CODO 10 X 90° R.L. CED-STD	326	496	34	146					
21	T62024	36	CODO 10 X 90° R.L. CED-STD	338	498	35	148					
22	T60552	59	CODO 4 X 90° R.L. CED-XS	342	481	40	157					

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	T5013	5013	0.310	0.170	0.810	0.004	0.002	0.320	0.020	0.039	0.007	0.020	0.000	0.000
HF	T4465	4465	0.340	0.190	0.830	0.006	0.001	0.340	0.010	0.038	0.006	0.020	0.000	0.000
HF	S46244	46244	0.330	0.190	0.740	0.012	0.000	0.290	0.050	0.035	0.020	0.020	0.002	0.002
HF	T59834	59834	0.310	0.170	0.730	0.011	0.001	0.280	0.040	0.075	0.019	0.040	0.000	0.000
HF	T61866	61866	0.310	0.170	0.740	0.014	0.001	0.280	0.030	0.049	0.015	0.030	0.000	0.000
HF	T62024	62024	0.310	0.170	0.670	0.010	0.001	0.290	0.060	0.076	0.026	0.040	0.000	0.000
HF	T61178	61178	0.300	0.170	0.700	0.017	0.002	0.300	0.040	0.051	0.020	0.030	0.000	0.000
HF	T58642	58642	0.300	0.170	0.670	0.014	0.001	0.310	0.050	0.054	0.013	0.030	0.000	0.000
HF	T61866	61866	0.310	0.170	0.740	0.014	0.001	0.280	0.030	0.049	0.015	0.030	0.000	0.000
HF	T62024	62024	0.310	0.170	0.670	0.010	0.001	0.290	0.060	0.076	0.026	0.040	0.000	0.000
HF	T60552	60552	0.300	0.170	0.650	0.018	0.003	0.280	0.050	0.065	0.019	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°:
12071871 12052103 11058859 12020685 12066084 12065699
12038068 12004239 12066084 12065699 12030466
"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.
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