

LAYISA, S.A. DE C.V.

ORDER
PART. No. _____
REFERENCIA 39290



Tubos de Acero de México S.A.
Carre. Méty-Laredo Km. 24.2
Apartado Postal 43
65550 C. de Flores, Méx.
(52) 61 8305 9500 Int.
(52) 61 8305 9610 Fax.

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

Numero:
Number: 24930
Pagina/Page: 1

Vendido a: Sold to:	Pedido del Cliente No: Customers Order No: 11019-1C984-10882-10888	Lista de Empaque: Packing List: 12860	Fecha/Data: 19 de Septiembre de 2011
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 0175-2003 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 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	T55130	20	TEE RED. 10 X 8 CED-STD	299	472	44	120					
2	T55440	144	CODO 6 X 45° CED-STD	311	474	46	122					
3	T55440	32	CODO 8 X 45° CED-STD	322	482	42	122					
4	T54114	2	CODO 8 X 45° CED-STD	318	480	40	120					
5	T53095	8A	CODO 8 X 45° CED-STD	309	484	41	122					
6	T56076	300	CODO 8 X 45° CED-STD	290	466	42	120					
7	S22920	500	RED. CONC. 4 X 3 CED-STD	292	467	35	125					
8	T55579	36	CODO 10 X 90° R.L. CED-80	295	476	42	122					
9	T50380	34	RED. CONC. 8 X 6 CED-85	314	488	44	128					
10	S45402	332	CODO 2 1/2 X 90° R.L. CED-85	294	456	36	120					
11	S45917	20	CODO 1 1/2 X 90° R.C. CED-STD	351	546	45	151					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb	%N
RF	T55130	55130	0.500	0.178	0.007	0.001	0.270	0.050	0.070	0.019	0.000	0.000	0.000	0.000
RF	T55440	55440	0.500	0.178	0.008	0.001	0.290	0.040	0.060	0.013	0.000	0.000	0.000	0.000
RF	T55440	55440	0.500	0.180	0.009	0.001	0.290	0.050	0.069	0.014	0.000	0.000	0.000	0.000
RF	T54114	54114	0.510	0.180	0.009	0.002	0.280	0.050	0.038	0.011	0.000	0.000	0.000	0.000
RF	T53095	53095	0.510	0.180	0.009	0.001	0.280	0.050	0.061	0.015	0.000	0.000	0.000	0.000
RF	T56076	56076	0.500	0.170	0.009	0.000	0.290	0.050	0.050	0.014	0.000	0.000	0.000	0.000
CF	S22920	22920	0.510	0.180	0.011	0.002	0.290	0.030	0.035	0.010	0.001	0.001	0.000	0.000
RF	T55579	55579	0.510	0.180	0.008	0.002	0.290	0.040	0.080	0.023	0.000	0.000	0.000	0.000
CF	T50380	50380	0.520	0.180	0.011	0.001	0.280	0.060	0.060	0.023	0.000	0.000	0.000	0.000
RF	S45402	45402	0.520	0.180	0.010	0.001	0.290	0.040	0.045	0.020	0.002	0.001	0.001	0.001
RF	S45917	45917	0.570	0.180	0.010	0.001	0.310	0.040	0.024	0.020	0.018	0.001	0.001	0.001

Certificamos que los resultados de los Análisis Químicos y Pruebas Mecánicas son verdaderos y una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima (Tubería Sin Costura) conforme ASTM A108 Grado B con NPS. 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) certis conform to ASTM A108 Grade B NPS. 11034034 11033024 11024647 11022387 11010803 11023927 346722 11028713 10049560 317031 11035673 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-650°C, enfriado al aire. Formado en frío normalizado a 340°C máx. Tiempo de permanencia 10'. Inspección Dimensional Satisfactoria. RF: FORMADO EN CALIENTE/HOT FORMED. CF: FORMADO EN FRIJO/COLD FORMED.

Notes: Hot formed (forged) by a range from 620°C to 650°C, cooled in still air. Cold formed normalized at 340°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 80. 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 80.

101