

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

Número:  
Number:

22425

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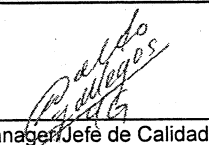
1 DE 1

Tubos de Acero de México, S.A.  
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(65550) C. de Flores, N.L. Méx.  
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Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANKER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	5343 - 5344 - 5349	Lista de Empaque: Packing List:	11410	Fecha/Date:	27 de Abril 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
1	S31103	264	CODO 3 X 90° R.L. CED-STD	304	510	29	116					
2	S29506	48	CODO 2 X 45° CED-STD	293	467	30	122					
3	T41487	20	CODO 10 X 90° R.L. CED-STD	259	478	34	101					
4	T43376	21	CODO 14 X 90° R.L. CED-XS	301	461	47	120					
5	T20345	168	CODO 1 X 90° R.L. CED-STD	344	500	49	118					
6	T41314	8	CODO 12 X 90° R.L. CED-XS	311	478	35	119					
7	S45280	33	CODO 1 1/4 X 90° R.L. CED-STD	357	511	28	122					
8	S31050	112	CODO 1 1/4 X 90° R.L. CED-STD	367	534	32	130					
9	T42161	7	TEE RED. 6 X 4 CED-XS	271	458	38	107					
10	T40571	1	TEE RED. 6 X 4 CED-XS	306	481	44	111					
11	T41032	2	TEE RED. 6 X 4 CED-XS	296	467	38	124					

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	S31103	31103	0.320	0.180	0.750	0.009	0.001	0.290	0.050	0.056	0.010	0.040	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°: 460632 458002 9002232 9012580 0 8054891 329135 457348 8063632 8039770 8069002  "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".
HF	S29506	29506	0.320	0.180	0.730	0.008	0.002	0.300	0.040	0.051	0.030	0.030	0.003	0.001	
HF	T41487	41487	0.300	0.170	0.670	0.011	0.000	0.270	0.040	0.057	0.007	0.030	0.000	0.000	
HF	T43376	43376	0.310	0.180	0.670	0.016	0.003	0.290	0.040	0.055	0.013	0.030	0.000	0.000	
HF	T20345	20345	0.340	0.169	0.900	0.010	0.002	0.250	0.044	0.021	0.033	0.025	0.000	0.000	
HF	T41314	41314	0.300	0.170	0.660	0.011	0.003	0.280	0.060	0.060	0.010	0.030	0.000	0.000	
HF	S45280	45280	0.323	0.180	0.730	0.010	0.001	0.300	0.050	0.055	0.020	0.048	0.001	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	
HF	T42161	42161	0.290	0.170	0.670	0.012	0.002	0.290	0.030	0.046	0.008	0.020	0.000	0.000	
HF	T40571	40571	0.300	0.170	0.690	0.009	0.004	0.280	0.040	0.057	0.009	0.030	0.000	0.000	
HF	T41032	41032	0.310	0.180	0.670	0.007	0.001	0.270	0.040	0.063	0.007	0.030	0.000	0.000	

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.
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