



Tubos de Acero de México, S.A.
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CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN.10204:2004E - ISO 10474 3.1.B)		Número: Number: 22678	Página/Page: 1 DE 1
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Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANKER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	5463 -	Lista de Empaque: Packing List:	11558	Fecha/Date:	4 de Agosto de 2009
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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
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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	S32307	68	CODO 2 1/2 X 90° R.L. CED-STD	314	486	31	122					
13	T41352	4	CODO 10 X 45° CED-STD	307	489	37	116					
14	S22585	3	RED. CONC. 3 X 2 CED-STD	314	484	32	117					
15	S28475	7	RED. CONC. 3 X 2 CED-STD	331	502	30	110					
16	S31050	80	CODO 1 1/4 X 90° R.L. CED-STD	367	534	32	130					
17	S22585	80	RED. CONC. 2 1/2 X 2 CED-STD	339	499	32	124					
18	T41224	30	RED. CONC. 6 X 4 CED-STD	317	487	36	112					
19	S45402	10	CODO 2 1/2 X 90° R.L. CED-XS	294	466	36	130					
20	S31052	15	CODO 2 X 90° R.C. CED-XS	326	495	31	120					

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	S32307	32307	0.330	0.190	0.710	0.012	0.002	0.260	0.050	0.039	0.010	0.028	0.001	0.001
HF	T41352	41352	0.300	0.170	0.680	0.010	0.002	0.290	0.030	0.054	0.008	0.030	0.000	0.000
CF	S22585	22585	0.310	0.170	0.750	0.011	0.000	0.260	0.040	0.025	0.010	0.022	0.001	0.002
CF	S28475	28475	0.340	0.180	0.820	0.009	0.001	0.300	0.050	0.058	0.020	0.036	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
CF	S22585	22585	0.310	0.170	0.760	0.011	0.001	0.270	0.040	0.027	0.010	0.022	0.001	0.002
CF	T41224	41224	0.310	0.180	0.670	0.014	0.002	0.280	0.050	0.056	0.017	0.030	0.000	0.000
HF	S45402	45402	0.320	0.180	0.740	0.010	0.001	0.290	0.040	0.045	0.020	0.022	0.001	0.001
HF	S31052	31052	0.320	0.180	0.740	0.009	0.001	0.260	0.040	0.035	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°: 468317 8049280 386215 443252 479680 383521 8048841 317311 458095 "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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