



Tubos de Acero de México, S.A.  
Carr. Mty-Laredo Km. 24.2  
Apalado Post. 13  
(65550) C. de Flores, N.L. México  
(52) 81 8305 9600 tel  
(52) 81 8305 9620 fax

<b>CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)</b>		Numero: Number:	Pagina/Page:
		28451	1
Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANKER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	6863 - 6880 - 6902
Especificaciones y Grados / Standard or Specification and Steel Grade		Lista de Empaque: Packing List:	14 81 6
Seamless Fittings according to ASTM A 234 WPB-10 Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB		Fecha/Date: 7 de abril de 2014	
Dimensiones y tolerancias / Dimension and tolerances		Bocas / Ends Biselado / Bevelled ends	
		ASME B 16.9 - 2007	

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	T7538	111	TEE 4 CED-XS	308	471	42	116					
2	T6402	189	TEE 4 CED-XS	306	478	41	145					
3	T64661	87	CODO 2 1/2 X 45° CED-STD	359	502	37	163					
4	S32031	23	RED. CONC. 2 X 1 1/2 CED-STD	385	521	50	102					
5	S33132	119	RED. CONC. 2 X 1 1/2 CED-STD	339	481	35	102					
6	S23751	3	RED. CONC. 2 X 1 1/2 CED-STD	345	511	29	120					
7	T65719	20	RED. CONC. 12 X 10 CED-STD	327	492	42	141					
8	T68864	4	TEE RED. 8 X 4 CED-STD	309	466	36	144					
9	T62024	2	CODO 10 X 45° CED-80	301	470	38	137					
10	T62067	2	TEE 10 CED-80	305	473	40	146					
11	S25633	500	CODO 2 X 45° CED-XS	316	491	30	174					

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	T7538	7538	0.300	0.170	0.700	0.005	0.001	0.270	0.030	0.041	0.008	0.020	0.000	0.000
HF	T6402	6402	0.300	0.170	0.710	0.005	0.001	0.310	0.020	0.058	0.009	0.020	0.000	0.000
HF	T64661	64661	0.310	0.180	0.680	0.015	0.001	0.290	0.030	0.040	0.017	0.030	0.000	0.000
CF	S32031	32031	0.350	0.200	0.800	0.010	0.001	0.300	0.030	0.024	0.020	0.018	0.001	0.001
CF	S33132	33132	0.309	0.170	0.740	0.012	0.002	0.270	0.030	0.000	0.040	0.017	0.001	0.001
CF	S23751	23751	0.340	0.180	0.800	0.009	0.001	0.300	0.060	0.040	0.030	0.025	0.001	0.002
CF	T65719	65719	0.310	0.180	0.660	0.005	0.002	0.270	0.040	0.062	0.014	0.040	0.000	0.000
HF	T68864	68864	0.300	0.170	0.670	0.007	0.001	0.290	0.050	0.054	0.017	0.030	0.000	0.000
HF	T62024	62024	0.310	0.180	0.660	0.010	0.001	0.290	0.060	0.075	0.026	0.040	0.000	0.000
HF	T62067	62067	0.330	0.190	0.670	0.008	0.001	0.300	0.060	0.066	0.032	0.040	0.000	0.000
HF	S25633	25633	0.330	0.190	0.740	0.012	0.003	0.280	0.040	0.040	0.010	0.016	0.002	0.002

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°:  
14010208 13052025 13025344 8025038 219017 412884  
13047573 14001013 12065238 12073168 12088144  
"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'.	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'.	<p style="text-align: center;">   <b>Quality Manager/Jefe de Calidad:</b>  <b>ING. WALDO GALLEGOS GALVAN</b> </p>	<p>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.</p> <p>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.</p> <p>MATERIAL ACCORDING TO NACE MR0175 / ISO 15156-2, 2009 AND NACE MR0103, 2010 ONLY HARDNESS</p>
HF: FORMADO EN CALIENTE/HOT FORMED	CF: FORMADO EN FRIO/COLD FORMED		FOR03161