



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)**

Numero:  
Number:

Pagina/Page:

30486

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Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANKER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	7754 - 7762 -	Lista de Empaque: Packing List:	15951	Fecha/Date:	12 de agosto de 2016
Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM A 234 WPB-13e Conform to ASME II Ed. 2013 ASME SA-234, Grade WPB			Dimensiones y tolerancias / Dimension and tolerances		Factura/Invoice: Bocas / Ends Biselado / Bevelled ends	
ASME B 16.9 - 2012							

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. %Z"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	T8766	62	CODO 4 X 45° CED-STD	327	491	39	157					
2	S41566	300	CODO 2 X 90° R.L. CED-STD	316	496	37	120					
3	T5012	200	CODO 2 1/2 X 90° R.L. CED-STD	360	514	36	164					
4	T7534	50	CODO 2 1/2 X 45° CED-STD	343	490	37	120					
5	S74455	88	CODO 1 1/2 X 90° R.L. CED-STD.	372	535	47	116					
6	T8432	11	CODO 3 X 90° R.C. CED-KS	312	480	39	146					
7	S36056	37	CODO 1 1/2 X 180° R.L. CED-STD	370	513	47	126					
8	S28476	63	CODO 1 1/2 X 180° R.L. CED-STD	388	512	48	126					
9	S74455	100	CODO 1 1/2 X 45° CED-STD	372	535	47	116					

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	T8766	8766	0.310	0.190	0.690	0.012	0.002	0.270	0.020	0.037	0.006	0.020	0.000	0.000
HF	S41566	41566	0.320	0.190	0.730	0.011	0.002	0.260	0.050	0.030	0.010	0.020	0.002	0.001
HF	T5012	5012	0.330	0.190	0.820	0.003	0.000	0.310	0.010	0.036	0.009	0.020	0.000	0.000
HF	T7534	7534	0.300	0.170	0.720	0.008	0.001	0.260	0.020	0.041	0.008	0.020	0.000	0.000
HF	S74455	74455	0.320	0.180	0.750	0.017	0.001	0.280	0.050	0.050	0.002	0.024	0.001	0.001
HF	T8432	8432	0.310	0.180	0.700	0.005	0.002	0.290	0.030	0.024	0.008	0.010	0.000	0.000
HF	S36056	36056	0.320	0.170	0.760	0.012	0.001	0.270	0.050	0.050	0.020	0.025	0.001	0.001
HF	S28476	28476	0.330	0.180	0.760	0.014	0.002	0.270	0.050	0.050	0.030	0.082	0.001	0.001
HF	S74455	74455	0.320	0.180	0.750	0.017	0.001	0.280	0.050	0.050	0.002	0.024	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.

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°.

15019101 16019890 12068280 14041057 16011034 14040217  
15013895 13041605 16011034

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 820°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

Notas:  
Hot formed fittings in a range from 820°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 FRIOCOLD 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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