



Tubos de Acero de México, S.A.  
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<b>CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE</b> ( DIN EN 10204:2004E - ISO 10474 3.1.B )		Numero: Number:  29796	Pagina/Page:  1
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 21160 -	Lista de Empaque: Packing List: 15524	Fecha/Date: 16 de julio de 2015
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 ASME B 16.9 - 2012		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	T73977	6	RED. CONC. 10 X 8 CED-XS	269	439	38	143					
2	T71380	4	RED. CONC. 10 X 8 CED-XS	302	473	47	147					
3	T76855	10	RED. CONC. 8 X 4 CED-XS	293	482	46	140					
4	T77075	10	RED. CONC. 16 X 8 CED-STD	282	434	31	137					
5	T76855	10	RED. CONC. 8 X 6 CED-XS	293	482	46	140					
6	T77075	5	RED. CONC. 16 X 10 CED-STD	282	434	31	137					

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
CF	T73977	73977	0.310	0.180	0.660	0.013	0.002	0.280	0.070	0.058	0.013	0.040	0.000	0.000
CF	T71380	71380	0.310	0.180	0.650	0.007	0.001	0.280	0.050	0.062	0.015	0.030	0.000	0.000
CF	T76855	76855	0.320	0.180	0.740	0.007	0.001	0.290	0.030	0.073	0.026	0.040	0.000	0.000
CF	T77075	77075	0.320	0.170	0.670	0.006	0.001	0.280	0.050	0.074	0.027	0.040	0.000	0.000
CF	T76855	76855	0.320	0.180	0.740	0.007	0.001	0.290	0.030	0.073	0.026	0.040	0.000	0.000
CF	T77075	77075	0.320	0.170	0.670	0.006	0.001	0.280	0.050	0.074	0.027	0.040	0.000	0.000

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°: 14055063 14028213 15024042 15019045 15024042 15019045

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°: 14055063 14028213 15024042 15019045 15024042 15019045

"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

*Waldo Gallegos*  
**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.

MATERIAL ACCORDING TO NACE MR0175 / ISO 15156-1, 2009 AND NACE MR0103, 2012 ONLY HARDNESS

**FOR03161**