

Tenaris

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: 24456	Pagina/Page: 1 DE 1
Vendido a: Sold to: PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 5960	Lista de Empaque: Packing List: 12592	Fecha/Date: 29 de Marzo de 2011
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234, 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 / Beveled 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	S44010	920	CODO 3 X 90° R.I. CED-STD	350	524	31	142					
2	T50878	80	CODO 3 X 90° R.I. CED-STD	357	503	35	122					
3	T50463	1	CODO 16 X 45° CED-STD	319	494	33	96					
4	T50768	1	CODO 16 X 45° CED-STD	336	499	41	122					
5	T51525	16	CODO 16 X 45° CED-STD	327	489	43	124					
6	T52028	44	CODO 12 X 45° CED-STD	327	490	43	122					
7	T51310	2	CODO 12 X 45° CED-STD	329	484	34	132					
8	T52029	21	CODO 12 X 45° CED-STD	318	490	42	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	S44010	44010	0.340	0.200	0.750	0.011	0.001	0.300	0.030	0.020	0.010	0.010	0.002	0.002	
HF	T50878	50878	0.300	0.180	0.650	0.014	0.001	0.290	0.040	0.050	0.014	0.030	0.000	0.000	
HF	T50463	50463	0.320	0.180	0.700	0.010	0.002	0.280	0.060	0.054	0.022	0.030	0.000	0.000	
HF	T50768	50768	0.320	0.190	0.680	0.013	0.001	0.290	0.050	0.046	0.018	0.030	0.000	0.000	
HF	T51525	51525	0.320	0.190	0.680	0.014	0.002	0.280	0.040	0.063	0.016	0.030	0.000	0.000	
HF	T52028	52028	0.310	0.180	0.670	0.013	0.002	0.290	0.030	0.080	0.021	0.040	0.000	0.000	
HF	T51310	51310	0.310	0.180	0.650	0.009	0.001	0.280	0.050	0.054	0.026	0.030	0.000	0.000	
HF	T52029	52029	0.300	0.170	0.670	0.012	0.001	0.290	0.040	0.059	0.022	0.030	0.000	0.000	

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima (Tuberia 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) certis conform to ASTM A106 Grade B N°:

11007340 10055648 10053787 10059870 10049515 11006328
10042610 11006328

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.

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/NOT FORMED CP: FORMADO EN FRIO/COLD FORMED

Notes:
Hot formed fittings in a range from 620°C to 980°C, cooled in air, Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory

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.

CC-008