



Tubos de Acero de Minocci, S.A.
 Carr. Mty-Laredo Km 24.2
 Apartado Postal 43
 (65550) C. de Flores, N.L. Méx
 (52) 81 8305 9600 tel.
 (52) 81 8305 9630 fax.

**CERTIFICADO DE CALIDAD
 INSPECTION CERTIFICATE**
 (DIN EN 10204:2004E - ISO 10474 3.1.B)

Numero:
 Number:
 24769

Pagina/Page:
 1

Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	6000 - 5996	Lista de Empaque: Packing List:	12772	Fecha/Date:	22 de Julio 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	Dimensiones y tolerancias / Dimension and tolerances	ASME B 16.9 - 2007 and ASME B 16.28 - 1994		Factura/Invoice: Bocas / Ends Biselado / Bevelled ends		
Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MR0103-2003							

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	S42774	1368	CODO 4 X 90° R.L. CED-STD	325	505	33	140					
2	S42775	226	CODO 4 X 90° R.L. CED-STD	333	489	31	140					
3	S42236	2	CODO 4 X 90° R.L. CED-STD	323	489	32	108					
4	S42831	360	CODO 3 X 90° R.L. CED-STD	338	508	32	122					
5	T54713	2	CODO 10 X 45° CED-STD	306	482	39	122					
6	T52716	48	CODO 10 X 45° CED-STD	320	492	40	122					
7	T51310	3	CODO 12 X 45° CED-STD	329	484	34	132					
8	T54971	6	CODO 12 X 45° CED-STD	318	486	43	128					
9	T50961	1	CODO 12 X 45° CED-STD	325	482	36	129					
10	T52716	160	CODO 10 X 90° R.L. CED-STD	320	492	40	122					
11	S38130	1000	CODO 1 1/4 X 90° R.L. CED-STD	347	489	39	118					

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
HP	S42774	42774	0.320	0.180	0.750	0.012	0.002	0.300	0.040	0.024	0.010	0.015	0.002	0.002
HP	S42775	42775	0.300	0.170	0.730	0.010	0.001	0.300	0.030	0.029	0.010	0.020	0.002	0.002
HP	S42236	42236	0.330	0.190	0.760	0.011	0.001	0.290	0.040	0.031	0.020	0.035	0.002	0.002
HP	S42831	42831	0.330	0.190	0.800	0.012	0.002	0.320	0.020	0.014	0.010	0.009	0.001	0.002
HP	T54713	54713	0.310	0.180	0.660	0.008	0.002	0.280	0.030	0.072	0.015	0.040	0.000	0.000
HP	T52716	52716	0.320	0.180	0.680	0.010	0.002	0.300	0.040	0.072	0.028	0.050	0.000	0.000
HP	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
HP	T54971	54971	0.310	0.180	0.670	0.007	0.003	0.270	0.060	0.048	0.023	0.030	0.000	0.000
HP	T50961	50961	0.310	0.180	0.660	0.011	0.003	0.270	0.030	0.056	0.027	0.040	0.000	0.000
HP	T52716	52716	0.320	0.180	0.680	0.010	0.002	0.300	0.040	0.072	0.028	0.050	0.000	0.000
HP	S38130	38130	0.313	0.180	0.710	0.009	0.001	0.280	0.030	0.043	0.020	0.022	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°:
 11001303 11001303 10053798 11001313 11022889
 10060272 10053692 11021788 10038655 10060272 258860
 "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

Notas: 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.

CC-008