Tenaris

Tubos de Acero de México, S.A.
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CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE
(DIN EN 10204 3.1.B - ISO 10474 3.1.B)

Numero: Number:	Pagina/Page:
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Vendido a: Sold to: TUVANSA MEXICO

Pedido del Cliente No: Customers Order No: 207 210 300

Lista de Empaque: Packing List: 8197

Fecha/Date: 9 de Mayo de 2006

Especificaciones y Grados / Standard or Specification and Steel Grade
Seamless Fittings according to ASTM A 234-97, A234-02 / ASME A/SA 234 WPB -
NACE MR 01.75-2003 - Conform to ASME II Ed. 2001

Dimensiones y tolerancias / Dimension and tolerances
ASME B 16.9 and ASME B 16.28 edition 2001

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	CANTIDA QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HB	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	T27435	25	CONC. RED. 10 X 8 SCH-XH	304	467	45	116					
2	T27406	15	CONC. RED. 12 X 10 SCH-STD	318	471	46	116					
3	T27406	20	CONC. RED. 12 X 8 SCH-STD	318	471	46	116					
4	T18736	7	CONC. RED. 14 X 12 SCH-STD	271	485	36	106					
5	T22751	1	CONC. RED. 14 X 12 SCH-STD	311	480	33	118					
6	T25720	4	CONC. RED. 14 X 12 SCH-STD	320	499	34	118					
7	T27030	8	CONC. RED. 14 X 12 SCH-STD	307	478	45	106					
8	T17749	2	CONC. RED. 14 X 8 SCH-STD	321	476	46	139					
9	T24927	3	CONC. RED. 14 X 8 SCH-STD	339	498	42	124					
10	T25279	5	CONC. RED. 14 X 8 SCH-STD	325	483	44	126					
11	S43382	30	CONC. RED. 4 X 2 SCH-XH	305	473	41	126					

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	T27435	27435	0.300	0.160	0.670	0.009	0.002	0.270	0.070	0.076	0.038	0.030	0.000	0.000
CF	T27406	27406	0.302	0.170	0.680	0.009	0.001	0.260	0.040	0.064	0.021	0.030	0.000	0.000
CF	T27406	27406	0.302	0.170	0.680	0.009	0.001	0.260	0.040	0.064	0.021	0.030	0.000	0.000
CF	T18736	18736	0.346	0.190	0.800	0.013	0.004	0.300	0.050	0.061	0.030	0.040	0.000	0.000
CF	T22751	22751	0.328	0.180	0.680	0.015	0.002	0.270	0.090	0.077	0.043	0.040	0.000	0.000
CF	T25720	25720	0.330	0.190	0.670	0.010	0.002	0.290	0.080	0.070	0.024	0.050	0.000	0.000
CF	T27030	27030	0.322	0.180	0.700	0.011	0.002	0.300	0.050	0.084	0.032	0.050	0.000	0.000
CF	T17749	17749	0.329	0.180	0.760	0.013	0.003	0.290	0.040	0.086	0.035	0.030	0.000	0.000
CF	T24927	24927	0.341	0.190	0.750	0.010	0.004	0.280	0.040	0.128	0.036	0.040	0.000	0.000
CF	T25279	25279	0.321	0.180	0.710	0.009	0.000	0.280	0.060	0.065	0.020	0.040	0.000	0.000
CF	S43382	43382	0.327	0.190	0.710	0.012	0.002	0.290	0.040	0.045	0.030	0.021	0.001	0.001

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante o/o el proveedor de Materia Prima conforme ASTM A106GradeB con Nº:
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 suplier Raw material certs conform to ASTM A106 Grade B Nº:

06007157	06005325	06005325
05003959	05013501	05029062
06003925	04020133	05024766
05025945	301928	

"Este material cumple con los requerimientos especificados en la orden".
"The material of this certificate heat number mentiones above is in compliance with the requirements specified in the order".

Notas:
Formado en caliente a 750°C-940°C, enfriado al aire; Formado en frio 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 750°C to 940°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

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.

Jefe de Aseguramiento de Calidad:
Quality Assurance Coordinator

ING. JOSE MARTINEZ MACIAS

CC-008