Tenaris

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

Numero: Number: 13685

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Vendido a: Sold to: TUVANSA MEXICO

Pedido del Cliente No: Customers Order No: 974, 1069, 1214

Lista de Empaque: Packing List: 7383

Fecha/Date: 11 de Marzo de 2005

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 ed. 02 - Conforme 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

ART. ITEM	COLADA HEAT CODE	CANTIDA QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HB
1	S35369	115	ELLS 5 X 90 L.R. SCH-STD	325	484	50	119
2	T17466	85	ELLS 5 X 90 L.R. SCH-STD	309	482	43	141
3	T18955	200	ELLS 6 X 45 SCH-STD	298	486	41	109
4	T18956	1	ELLS 6 X 45 SCH-STD	293	479	42	116
5	T19194	33	ELLS 8 X 45 SCH-STD	294	459	44	110
6	TIE6	1	ELLS 8 X 45 SCH-STD	299	469	42	139
7	TAU6	20	ELLS 8 X 90 L.R. SCH-20	322	478	40	140
8	T18325	10	CONC. RED. 10 X 8 SCH-STD	307	478	44	139
9	T19909	5	CONC. RED. 10 X 8 SCH-XH	331	483	44	137
10	S24928	10	CONC. RED. 2 X 1 1/2 SCH-XH	340	500	39	141
11	S32237	15	CONC. RED. 3 X 1 1/2 SCH-STD	339	509	50	140

PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C

DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P ANOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S35369	35369	0.294	0.160	0.750	0.011	0.001	0.310	0.020	0.033	0.010	0.015	0.001	0.001
HF	T17466	17466	0.317	0.180	0.670	0.017	0.001	0.270	0.050	0.061	0.047	0.030	0.000	0.000
HF	T18955	18955	0.314	0.170	0.680	0.007	0.002	0.280	0.050	0.074	0.066	0.040	0.000	0.000
HF	T18956	18956	0.310	0.170	0.680	0.009	0.003	0.270	0.050	0.072	0.045	0.040	0.000	0.000
HF	T19194	19194	0.308	0.170	0.670	0.008	0.003	0.260	0.050	0.064	0.045	0.040	0.000	0.000
HF	TIE6	17194	0.308	0.170	0.690	0.010	0.002	0.280	0.040	0.080	0.033	0.040	0.000	0.000
HF	TAU6	13369	0.310	0.170	0.690	0.014	0.001	0.280	0.060	0.054	0.037	0.030	0.000	0.000
CF	T18325	18325	0.318	0.180	0.670	0.009	0.001	0.260	0.060	0.056	0.042	0.030	0.000	0.000
CF	T19909	19909	0.313	0.180	0.680	0.007	0.001	0.280	0.040	0.069	0.025	0.030	0.000	0.000
CF	S24928	24928	0.334	0.190	0.760	0.007	0.001	0.290	0.040	0.030	0.020	0.040	0.001	0.001
CF	S32237	32237	0.341	0.190	0.810	0.010	0.001	0.300	0.030	0.056	0.020	0.021	0.002	0.001

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos e una copia fiel de los certificados enviados por el Fabricante y/o al proveedor de Materia Prima conforme ASTM A106Grado B 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 supplier Raw material cells conform to ASTM A106 Grade B Nº:

238320 04016251 04022940
04023448 04026477 04013251
03017637 04025781 04028893
162086 207936

"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".

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Notas:
Formado en caliente a 700°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 700°C to 940°C, cooled in still air.
Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensionalcheck: Satisfactory
CF: FORMADO EN FRIO/COLD FORMED

Jefe de Aseguramiento de Calidad:
Quality Assurance Coordinator

ING. JOSE MARTINEZ MACIAS

CC-008