



# Riga

## Ténaris Group

### CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE

(DIN EN 10204 3.1.B - ISO 10474 3.1.B)

Vendido A: **TUBERIA Y VALVULAS DEL NORTE, S.A. DE C.V.**  
Pedido del cliente No: **92, 93, 94**  
Customers Order No: **92, 93, 94**

Sold to: **TUBERIA Y VALVULAS DEL NORTE, S.A. DE C.V.**  
Dimensiones y tolerancias / Dimension and tolerances  
ASME B 16.9 and ASME B 16.28 edition 2001

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

Lista de empaque: **5838** Fecha/Date: **MARZO 17 de 21**

Bocas / Ends  
Biselado / Bevelled ends

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ART. ITEM	COLADA HEAT CODE	CANTIDAD 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	PR AV
1	PJ5	200	CODO 4 X 45 CED STD	359	490	41	129	N/A	N/A	N/A	N/A	N/A
2	OT5	684	CODO R.L. 4 X 90 CED STD	361	496	41	135	N/A	N/A	N/A	N/A	N/A
3	PJ5	116	CODO R.L. 4 X 90 CED STD	359	490	41	129	N/A	N/A	N/A	N/A	N/A
4	FF5	272	CODO R.L. 4 X 90 CED XS	316	469	41	137	N/A	N/A	N/A	N/A	N/A
5	JU5	228	CODO R.L. 4 X 90 CED XS	315	476	37	131	N/A	N/A	N/A	N/A	N/A
6	BP5	40	CODO 5 X 45 CED STD	363	558	31	132	N/A	N/A	N/A	N/A	N/A
7	MDS	10	CODO 6 X 45 CED STD	316	486	42	133	N/A	N/A	N/A	N/A	N/A
8	OSS	32	CODO 6 X 45 CED STD	330	498	40	136	N/A	N/A	N/A	N/A	N/A
9	PNS	18	CODO 6 X 45 CED STD	344	510	39	131	N/A	N/A	N/A	N/A	N/A

### 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	PJ5	24113	0.3290	0.190	0.760	0.008	0.001	0.310	0.030	0.040	0.010	0.020	0.001	0.001
HF	OT5	24114	0.3180	0.180	0.740	0.008	0.001	0.310	0.030	0.040	0.020	0.020	0.001	0.001
HF	PJ5	24113	0.3290	0.190	0.760	0.008	0.001	0.310	0.030	0.040	0.010	0.020	0.001	0.001
HF	FF5	21247	0.3250	0.180	0.770	0.008	0.001	0.290	0.030	0.060	0.020	0.030	0.001	0.001
HF	JU5	22137	0.3230	0.180	0.750	0.010	0.001	0.300	0.040	0.060	0.020	0.030	0.001	0.001
HF	BP5	48155	0.3250	0.180	0.770	0.010	0.002	0.290	0.030	0.076	0.020	0.026	0.001	0.001
HF	MDS	98138	0.3320	0.190	0.690	0.008	0.003	0.270	0.050	0.080	0.046	0.040	0.000	0.000
HF	OSS	99244	0.2960	0.160	0.690	0.014	0.004	0.280	0.050	0.060	0.024	0.030	0.000	0.000
HF	PNS	99520	0.3220	0.170	0.750	0.012	0.005	0.280	0.070	0.069	0.029	0.040	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 con N°.

We certify that result of chemical analysis and mechanical test are true and copy of the test certificate issued by the manufacturer and/or supplier Raw material certs N°:

158104 149632 152475  
140461 02015554 03000283  
03000839

Notas: Formado en caliente a 780°C-940°C, enfriado al aire. Formado en frío normalizado a 940°C max. Holding time 10'.

Notas: Hot formed fittings in a range from 780°C to 940°C. Cooled in still air. Cold formed normalized at 940°C max. Holding time 10'.

Inspeccion Dimensional: Satisfactoria. Visual dimensional check: Satisfactory.  
HF FORMADO EN CALIENTE/HOT FORMED CF FORMADO EN FRIO/COLD FORMED

Gerente de Aseguramiento de Calidad: **ING. JOSE MARTINEZ MACIAS**  
Quality Assurance Manager: