



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

Numero Number: 25528
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Forma de Acceso de Material
Access to Material Form
Requisito para el
Requirement for the
Forma de Acceso de Material
Access to Material Form

Vendido a: TUVANSA MONTERREY
Pedido del Cliente No: 11826
Lista de Empaque: 13181
Fecha/Date: 7 de Marzo de 2012
Sold to:
Customers Order No:
Packing List:
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	TS1308	28	CODO 14 X 90° R L. CEB-STD	278	477	34	103					
2	TS1308	99	CODO 14 X 90° R L. CEB-STD	289	482	34	88					
3	TS1307	76	CODO 14 X 90° R L. CEB-STD	286	486	34	105					
4	TS1308	17	CODO 14 X 90° R L. CEB-STD	320	484	37	105					
5	TS1309	4	CODO 14 X 90° R L. CEB-STD	314	484	42	120					
6	TS2243	54	TEE WED 4 X 4 CEB-STD	385	498	31	126					
7	TS6718	28	CODO 10 X 45° CEB-NS	381	471	35	106					
8	TS2243	76	CODO 10 X 45° CEB-NS	431	467	36	101					
9	TS2243	27	CODO 10 X 90° R L. CEB-NS	382	478	34	88					

ANALISIS QUIMICO / CHEMICAL ANALYSIS													
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./OTHER PIPE	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HP	TS1308	51308	0.310	0.180	0.010	0.014	0.001	0.260	0.050	0.053	0.023	0.000	0.000
HP	TS1308	51308	0.300	0.190	0.010	0.013	0.003	0.260	0.050	0.063	0.030	0.000	0.000
HP	TS1307	51307	0.310	0.180	0.010	0.011	0.001	0.270	0.040	0.049	0.020	0.000	0.000
HP	TS1308	51308	0.310	0.190	0.010	0.011	0.001	0.285	0.040	0.050	0.022	0.000	0.000
HP	TS1309	51309	0.300	0.170	0.010	0.013	0.001	0.280	0.050	0.051	0.012	0.000	0.000
HP	TS2243	52243	0.310	0.180	0.010	0.012	0.001	0.280	0.040	0.052	0.022	0.000	0.000
HP	TS6718	56718	0.300	0.170	0.010	0.010	0.001	0.270	0.060	0.070	0.016	0.000	0.000
HP	TS2243	52243	0.320	0.170	0.010	0.014	0.001	0.300	0.080	0.054	0.025	0.000	0.000
HP	TS2243	52243	0.310	0.180	0.010	0.013	0.001	0.290	0.040	0.060	0.023	0.000	0.000

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o uno como fin de los certificados enviados por el fabricante y/o proveedor de Material Prima (Tuberia Sin Costura) conforme ASTM A108 Grado B sin Nb.
We certify that results 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) parts conform to ASTM A108 Grade B Nb.
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The material of this certificate has number mentioned above in compliance with the requirements specified in the order.

Notes: Forwelded fittings are forged from 625°C to 880°C, cooled in air.
Hot formed fittings are forged from 625°C to 880°C, cooled in air.
Cold formed from 420°C to 540°C max.
Cold formed from 420°C to 540°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 Rockwell B to Brinell Brinell HBW by means of table WILSON DESK CHART RC.
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 RC.
FORM3161