

<b>CERTIFICADO DE CALIDAD</b> <b>INSPECTION CERTIFICATE</b> ( DIN EN 10204:2004E - ISO 10474 3.1.B )	Número: Number:	Página/Page:
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Vendido a: Sold to:	Pedido del Cliente No: Customers Order No:	Lista de Empaque: Packing List:	Fecha/Date:	11518 9 de Julio de 2009
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234M WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234M Grade WPB, NACE MR0103-2003		Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2007 and ASME B 16.28 - 1994		Factura/Invoice: Bocas / Ends Biselado / Bevelled ends

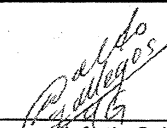
DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION				PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S28891	228	CODO 4 X 90° R.L. CED-STD	495	762	32	117					
2	S32859	49	CODO 6 X 90° R.L. CED-STD	316	453	34	109					
3	S21394	69	CODO 2 X 90° R.L. CED-STD	321	478	29	133					
4	S31051	150	CODO 2 X 90° R.L. CED-STD	333	501	30	114					
5	S29142	31	CODO 2 X 90° R.L. CED-STD	295	464	30	129					
6	S21173	2	CODO 4 X 90° R.L. CED-XS	308	464	33	104					
7	S20540	18	CODO 4 X 90° R.L. CED-XS	309	486	37	106					
8	S22161	3	CODO 4 X 90° R.L. CED-XS	338	490	38	105					
9	S33739	70	CODO 4 X 90° R.L. CED-XS	299	465	35	111					
10	S31158	4	CODO 4 X 90° R.L. CED-XS	284	461	33	128					
11	S31761	1	CODO 4 X 90° R.L. CED-XS	300	483	33	130					

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	S28891	28891	0.320	0.180	0.730	0.011	0.003	0.260	0.040	0.024	0.010	0.028	0.001	0.000
HF	S32859	32859	0.340	0.200	0.750	0.013	0.002	0.270	0.040	0.065	0.010	0.035	0.001	0.002
HF	S21394	21394	0.310	0.180	0.720	0.011	0.001	0.260	0.030	0.036	0.010	0.021	0.001	0.001
HF	S31051	31051	0.320	0.190	0.730	0.009	0.001	0.260	0.030	0.025	0.010	0.012	0.001	0.001
HF	S29142	29142	0.320	0.180	0.760	0.009	0.002	0.280	0.040	0.050	0.020	0.024	0.001	0.001
HF	S21173	21173	0.328	0.200	0.720	0.010	0.004	0.270	0.020	0.016	0.010	0.016	0.001	0.001
HF	S20540	20540	0.320	0.180	0.770	0.013	0.001	0.280	0.050	0.038	0.010	0.022	0.001	0.001
HF	S22161	22161	0.330	0.200	0.710	0.010	0.001	0.290	0.030	0.017	0.010	0.010	0.001	0.001
HF	S33739	33739	0.340	0.200	0.740	0.010	0.001	0.290	0.040	0.038	0.010	0.017	0.001	0.000
HF	S31158	31158	0.330	0.200	0.740	0.011	0.001	0.280	0.030	0.037	0.010	0.012	0.001	0.000
HF	S31761	31761	0.320	0.180	0.750	0.008	0.001	0.260	0.040	0.040	0.010	0.022	0.001	0.000

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°: 443255 479795 373275 458124 458124 369592 365216 380137 482835 462048 462048

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°: 443255 479795 373275 458124 458124 369592 365216 380137 482835 462048 462048

"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	Notes: 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	<p>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.</p> <p>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.</p>
 <b>Quality Manager / Jefe de Calidad:</b> <b>ING. WALDO GALLEGOS GALVAN</b>		<b>CC-008</b>