



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

INDUSTRIAL GROUP OF AMERICA, S.A.
Sociedad Unida con CA S de RL
Boulevard Avenida 13
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Vendido a: **TUVANSA MEXICO**
 Especificaciones y Grados / Standard or Specification and Steel Grade: **ASME B 16.9 - 2001 ASME SA-234, Grade WB8**
 Dimensiones y tolerancias / Dimension and tolerances: **ASME B 16.9 - 2001 and ASME B 16.28 - 1994**
 Pedido del Cliente No.: **MEX0000388 -**
 Customers Order No.: **16590**
 Lista de Empaque: **8454**
 Packing List: **Bocas / Ends**
 Fecha/Date: **4 de Septiembre de 2006**

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C			
				ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPATURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HB	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S26222	13	CODO 6 X 90° R. C. CED-STD	307	467	41	138				
2	S44822	7	CODO 6 X 90° R. C. CED-STD	309	481	50	135				
3	S43766	61	CODO 2 1/2 X 90° R. I. CED-STD	320	503	33	142				
4	S45187	339	CODO 2 1/2 X 90° R. I. CED-STD	313	486	29	145				
5	S43766	100	CODO 5 X 90° R. I. CED-STD	320	503	33	142				

PROCESO PROCESS	COLADA HEAT CODE	COLADAYHEAT M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS												
			%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb		
HF	S26222	26222	0.301	0.170	0.730	0.007	0.001	0.270	0.020	0.030	0.010	0.020	0.001	0.001	0.001
HF	S24822	24822	0.311	0.180	0.740	0.007	0.001	0.290	0.020	0.000	0.010	0.020	0.001	0.000	
HF	S43766	43766	0.351	0.200	0.810	0.012	0.001	0.280	0.030	0.058	0.020	0.022	0.001	0.001	
HF	S45187	45187	0.310	0.180	0.710	0.011	0.002	0.280	0.030	0.032	0.010	0.019	0.001	0.002	
HF	S43766	43766	0.351	0.200	0.810	0.012	0.001	0.280	0.030	0.058	0.020	0.022	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 y/o el proveedor de Materia Prima (Tuberia San Calural conforma ASTM A106 Grado B con N°
 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°
 1.65684 1.61658 313950 321654 313950

Notes:
 Formado en caliente a 820°C-880°C, enfriado al aire, Formado en frío normalizado a 940°C max
 Heat formed temp range a range from 820°C to 880°C, cooled in air, air.
 Cold formed normalizer at 940°C max
 Tiempo de permanencia 10' Holding time 10'
 Inspección Dimensional Satisfactoria Visual dimensional check Satisfactory
 HF FORMADO EN CALIENTE/ HF FORMED CF FORMADO EN FRODO/ CF 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.

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.

Jefe de Calidad:
 Quality Manager:
 ING. JOSE MARTINEZ MACIAS
 CC-008