

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

Car. 453 Bq. 5.º
Car. 453 Bq. 5.º
Apartado Postal 41
de Flores, N.L. Mex.
021 229 989 1100 tel
021 229 989 1120 fax

Vendido a: **PIESA ANAHUAC Y CIA. S. A. DE C. V.** Pedido del Cliente No: **897-937-100004** Lista de Empaque: **7.283** Fecha/Date: **20 de Enero de 2005**

Sold to: **PIESA ANAHUAC Y CIA. S. A. DE C. V.** Customer Order No: **897-937-100004** Dimensiones y tolerancias / Dimension and tolerancias

Especificaciones y Grados / Standard or Specification and Steel Grade **ASME B 16.9 and ASME B 16.28 edition 2001**

Shamsira Filings according to ASTM A 214-97, A214-02 / ASME A54 224 WRB - **ASME B 16.9 and ASME B 16.28 edition 2001**

MAE MR 0176 ed. 02 - Conform to ASME B Ed. 2001

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 HARDNESS HB	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules
1	BMS	20	ELLS 1 1/2" X 45°	334	514	50	124	1	1	1	
2	S17667	13	ELLS 4" X 90° L.R.	356	516	50	135				
3	S22039	20	ELLS 6" X 90° S.R.	339	488	29	128				
4	S24684	100	ELLS 2" X 90° L.R.	337	493	39	128				
5	S25296	126	ELLS 1 1/2" X 90° L.R.	349	491	35	122				
6	S31802	150	ELLS 3" X 90° L.R.	369	523	50	133				
7	S32021	20	ELLS 2" X 90° S.R.	385	521	50	130				
8	S32021	100	ELLS 2" X 45°	385	521	50	130				
9	S33411	37	ELLS 1" X 90° L.R.	354	495	50	135				
10	S33415	25	ELLS 4" X 90° S.R.	347	500	51	126				
11	S33640	50	ELLS 4" X 45°	347	494	51	129				

PROCESO PROCESS	COLADA HEAT CODE	COLADAMENT M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS											
			%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Ni	%V	%Nb		
HR	BMS	43300	0.325	0.180	0.770	0.016	0.000	0.300	0.040	0.040	0.020	0.020	0.003	0.001
HR	S17667	31766	0.327	0.180	0.780	0.012	0.001	0.280	0.040	0.047	0.020	0.022	0.001	0.001
HR	S22039	22039	0.334	0.190	0.760	0.012	0.001	0.310	0.030	0.050	0.020	0.030	0.001	0.001
HR	S24684	24684	0.333	0.190	0.740	0.007	0.001	0.290	0.040	0.030	0.040	0.020	0.001	0.001
HR	S25296	25296	0.324	0.180	0.790	0.010	0.002	0.290	0.030	0.040	0.010	0.020	0.001	0.001
HR	S31802	31802	0.320	0.180	0.770	0.009	0.002	0.320	0.030	0.034	0.010	0.014	0.001	0.001
HR	S32021	32021	0.338	0.190	0.820	0.009	0.001	0.300	0.020	0.031	0.030	0.010	0.001	0.001
HR	S32031	32031	0.338	0.190	0.820	0.009	0.001	0.300	0.020	0.031	0.030	0.010	0.001	0.001
HR	S33411	33411	0.324	0.180	0.730	0.011	0.002	0.300	0.080	0.034	0.010	0.024	0.001	0.001
HR	S33415	33415	0.339	0.180	0.820	0.014	0.001	0.300	0.050	0.065	0.020	0.033	0.001	0.001
HR	S33640	33640	0.324	0.180	0.800	0.011	0.001	0.300	0.030	0.022	0.010	0.021	0.001	0.001

Certificamos que los resultados de los analisis Quimicos y Pruebas Mecanicas son veridicos o bien copia fiel de los utilizados enviados por el fabricante o el proveedor de Material Prima conforme ASTM A 106, excepto lo que se indica en el presente certificado.

The 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 data conform to ASTM A 106 Grade B 1P.

Material Data:
 2005337 207936 152468
 161655 165671 207944
 207945 207945 218557
 218551 218577

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: **Heat treated straight to a temp. from 700°C to 900°C, cooled in still air.**
Heat treated straight to a temp. from 700°C to 900°C, cooled in still air.

Formado en caliente a 700°C-900°C, enfriado al aire.
 Formed in still atmosphere at 900°C max.

Tempo de procesamiento: 10'
 Holding time: 10'

Inspección: Dimensional, Metalografía.
 Visual dimensional and metalography.

Formado en caliente y enfriado.
 Formed in still atmosphere.

Jefe de Aseguramiento de Calidad:
Quality Assurance Coordinator
ING. JOSE MARRINEZ MACIAS

CC-008

