

MATERIAL TEST REPORTS

Customer: PROVEEDORA DE MATERIALES ANGER SA DE C.V.
 ALFONSO REYES 4050 NTE COL DEL NORTE 64500
 MONTERREY NUEVO LEON

Order No: PO 222	Dated: APR. 18, 2008	Works No. 2008-117
Material: ASTM A105	Standard: ANSI B16.5	Invoice No.: GL08B058-3

A. Content of the delivery

Items No.	Quantity	Description	Size	Heat No
1	10	150-RF-SO	16"	811
2	60	150-RF-SO	20"	439
3	10	150-RF-SO	24"	439
4	500	150-WN-RF-STD	2-1/2"	077
5	756	150-WN-RF-STD	3"	077
6	72	150-WN-RF-STD	5"	077
7	12	150-WN-RF-STD	8"	077
8	16	150-WN-RF-STD	14"	421
9	300	150-BL-RF	1-1/2"	454
10	20	150-BL-RF	14"	421
11	15	150-BL-RF	16"	421

B. Chemical analysis

Heat No	C %	Mn %	P %	S %	Si %	Cr %	Ni %	Mo %
811	0.18	0.66	0.021	0.015	0.25	0.01	0.01	0.01
439	0.18	0.66	0.017	0.014	0.22	0.01	0.01	0.01
077	0.17	0.71	0.019	0.020	0.23	0.01	0.01	0.01
421	0.19	0.67	0.021	0.013	0.21	0.01	0.01	0.01
454	0.18	0.67	0.022	0.014	0.21	0.01	0.01	0.01

Heat No	V %	Cu %	Nb %	Ti %
811	0.01	0.01	0.01	0.01
439	0.01	0.01	0.01	0.01
077	0.01	0.01	0.01	0.01
421	0.01	0.01	0.01	0.01
454	0.01	0.01	0.01	0.01

C. Mechanical properties tests

Heat No	Yield Strength (N/mm ²)	Tensile Strength (N/mm ²)	Elongation (%)	Reduction (%)	Hardness (HB)
811	295	505	31	60	139
439	285	490	30	60	137
077	295	500	31	62	138
421	290	505	32	61	139
454	290	495	31	62	137

D. Visual and dimensional inspection: without complaint

E. The goods are manufactured according to a quality management system approved and registered to ISO 9002

Inspection Date APR. 18, 2008

Work Inspector

