



Maass Flange Corporation  
6202 Lumberdale Rd.  
Houston TX 77092



ISO 9002  
Certified

Date: 08/18/03

Material Test Certification  
Certificate Conforms to EN 10204/3.1.B/DIN 50049/3.1.B

SOLD CROMINOX, S.A. DE C.V.

TO: PONIENTE 122 NO 419-DSTA  
COL. CRUZ DE SALINA  
C.P. 02340 MEXICO D.F

Cust P.O.# 8116

ORDER#:110586

Item	Qty	Heatcode	Description	Material
1	250	D91499A	2 150 RFSO	SA-182 F316/316L
2	220	D91553A	4 150 RFSO	SA-182 F316/316L
3	102	D91414A	6 150 RFSO	SA-182 F316/316L
4	18	30571	6 150 RFSO	SA-182 F316/316L
5	30	D91554A	8 150 RFSO	SA-182 F316/316L
6	20	31095	10 150 RFSO	SA-182 F316/316L
7	20	32002	12 150 RFSO	SA-182 F316/316L

Item	C	Mn	P	S	Si	Ni	Cr	Mo	N	Cu	Ti	V	Co	Ta	W
1	.020	1.740	.026	.023	.390	10.090	17.000	2.080	.071						
2	.022	1.630	.026	.023	.340	10.120	16.700	2.080	.076						
3	.018	1.690	.023	.027	.370	10.220	16.690	2.100	.077						
4	.020	1.410	.027	.001	.470	10.250	16.150	2.160	.067	.460	.001				
5	.019	1.750	.025	.025	.350	10.230	16.870	2.070	.077						
6	.021	1.500	.026	.010	.440	10.200	16.250	2.170	.058	.360					
7	.024	1.390	.031	.003	.450	10.250	16.850	2.120	.064	.340	.002	.043	.045	.010	.030

Item	Cb	Cb+Ta	Al	Fe	Tensile	Yield	Elong.%	R of A %	BHN	Charpy	Grain
1					80000	44000	62.00	70.00	0		0
2					83000	39000	55.00	63.00	0		0
3					83300	45000	50.00	56.40	159		0
4			.006		83252	48008	68.00	75.00	0		0
5					79000	38000	60.00	71.00	0		0
6					80000	40900	60.00	69.00	151		0
7	.015		.006		79100	36400	55.00	63.00	0		0

Heat Treatment: SOLUTION ANNEALED/MIN. 1925F(1050C)/WATER QUENCHED.

Material Conforms to Specifications A/SA182M-00C and NACE MR 01.75

Notes: MADE IN MEXICO

This is to certify that the material furnished on this report complies in all respects with the specifications indicated for each item. We certify that the above figures are correct in accordance with our records.

Registered to ISO 9002 by Germanischer Lloyd GmbH.

Approved by B. Kelly  
Administrative Ass't.