



CD23177

C085573

# CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.

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Purchaser - Besteller - Acheteur  ASA Alloys Div of CSM ULC 20 Challenger Crescent Sherwood Park Alberta T8H 2R1 Canada	Inspection Certificate: Abnahmeprüfzeugnis: Certificat de réception:	DIN 50049 3.1 EN 10204	Cert No: Zeugnis Nr: Cert No	134990-a	Date: Datum: Date:	20/06/13
	Customer Order No: Kundenbestellnummer: No. de Commande Client.	P029532	Product Description - Beschreibung des Erzeugnisses - Description du Produit: 7.5in Dia. x 4400lbs Electric Melt & Vacuum Degassed Stainless Steel Solution Annealed Forged ASA 4404/316L EN 10088-3:5 ASTM A182-09a, A276-08a, A479-10 F316/F316L 316/316L ASME SA182-LE, SA276-LE, SA479-LE F316/F316L 316/316L NACE MR0175-09/ISO 15156			
	Our Order No: Unsere Auftr.-Nr: notre Comm. No.	50833  W138678/00	4390 LB 1991 Kgs.			

## Chemical Analysis - Chemische Analyse - Analyse Chimique

Case No Schmelznummer No. de Coulée	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N								
GD23177	.030	.31	1.37	.036	.014	16.94	2.09	10.19	.35	.18	.051								

## Heat Treatment - Wärmebehandlung - Traitement Thermique

Solution annealed @ 1080 C for 3 hours & Water Quenched

## Mechanical Properties - Mechanische Eigenschaften - Caractéristiques Mécaniques

Test No Probe Nr No. d'Essai	Test dimension Probestabmessung Dimension	Proof Stress Streckgrenze Limite d'Elasticité	Rp	Tensile strength Zugfestigkeit Resistance a la traction	Rm	Elong % A Bruchdehnung % Allongement %	Red of Area % Bruchsehnung % Striction %	Impact Kerbschlagzähigkeit Resilience	Hardness Harta Dureta
		0.2%	1.0%			Lo 5D 4D			
242338	210MM	L	34.2 ksi	78.5 ksi		72 %	77 %		147 HB

## Remarks - Bemerkungen - Remarques

Ultrasonically tested and found satisfactory  
 Intercrystalline corrosion test to ASTM A262:E satisfactory  
 Grain size to ASTM E112 - 3  
 Material produced by ELG Carrs Stainless Steels in the United Kingdom



Certificate No. FM 13615



Reg No 04 701 606

The material detailed has been manufactured and tested in accordance with the Quality Assurance system ISO 9001:2008 and the requirements of the specification/ order.

Signed: *C Ryall*

Chris Ryall - Quality Manager

Approved signatory for  
 ELG Carrs Stainless Steels

