



# CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.

Wadsley Bridge, Sheffield, S6 1LL, England

**CD23198**

CO8557.8

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Purchaser - Besteller - Acheteur  ASA Alloys Div of CSM ULC 20 Challenger Crescent Sherwood Park Alberta T8H 2R1 Canada	Inspection Certificate: Abnahmegrunderzeugnis: Certificat de reception:	DIN 50040 3.1 EN 10204	Cert No: Zeugnis Nr.: Cert No:	135040-a	Date: Datum: Date:	12/06/13
	Customer Order No. Kundenbestellnummer: No. de Commande Client:	PO29778	Product Description - Beschreibung des Erzeugnisses - Description du Produit: 15in Dia. x 8000lbs 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 15158			
	Our Order No. Unsere Auftr. Nr.: notre Comm. No:	50632  W130667/00	8212 LB 3725 Kgs.			

## Chemical Analysis - Chemische Analyse - Analyse Chimique

Cast No Schmelznummer No. de Cuiuse	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N									
CD23198	.028	.47	1.46	.033	.011	16.62	2.06	10.4	.37	.21	.065									

## Heat Treatment - Wärmebehandlung - Traitement Thermique

Solution annealed @ 1060 C for 5 hours & Water Quenched

## Mechanical Properties - Mechanische Eigenschaften - Caracteristiques Mechaniques

Test No Probe Nr No. d'Essai	Test dimension Probeabmessung Dimension		Proof Stress Streckgrenze Limite d'Elasticite 0.2% 1.0%	Tensile strength Zugfestigkeit Resistencia a la traccion	Elong % Bruchdehnung % Allongement % Lo 50 40	Red of Area % Bruchdehnung % Striction %	Impact Kerbschlagzähigkeit Resilience	Hardness Harte Durete
245418	15"	L	41.4 ksi	80 ksi	67 %	78 %	143 HB	

### Remarks - Bemerkungen - Remarques

Ultrasonically tested and found satisfactory  
 Intergranular corrosion test to ASTM A262:E satisfactory  
 Grain size to ASTM E112 - 1  
 Material produced by ELG Carrs Stainless Steels in the United Kingdom



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