



# CARRS STAINLESS STEELS

A Division of ELG Heniel Metals Ltd.  
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C145635

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	145047	Date: Datum: Date	25/01/16
	Customer Order No: Kundenbestellnummer: No de Commande Client:	P036683	Product Description - Beschreibung des Erzeugnisses - Description du Produit 23.5in Dia. x 10000 lbs Electric Melt & Vacuum Degassed Stainless Steel Solution Annealed Forged ASA 1.4404/316L EN 10088-3:5 EN10272-07 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 QQS 763F			
	Our Order No. Unsere Auftr.-Nr. notre Comm. No.	54766  W147789/00	10011 LB 4541 Kgs.			

Chemical Analysis - Chemische Analyse - Analyse Chimique													
Case No Schweißzeugnisnummer No. de Coultre	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N		
CD25519	.016	.33	1.29	036	.009	16.73	2.07	10.21	.39	.20	.051		

Heat Treatment - Wärmebehandlung - Traitement Thermique	Solution annealed @ 1060 C for 5 hours & Water Quenched
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Mechanical Properties - Mechanische Eigenschaften - Caractéristiques Mécaniques												
Test No Probe Nr No. d'Essai	Test dimension Probendimension Dimension	Proof Stress Streckgrenze Limite d'Elasticité 0.2%	Rp 1.0%	Tensile strength Zugfestigkeit Résistance à la traction	Elong % A Bruchdehnung % Allongement % L <sub>50</sub> 4D	Red of Area % Z Bruchflächenminderung % Striction %	Impact Kerbschlagzähigkeit Résistance				Hardness Härte Dureté	
MR2697	23.5"	L	273 MPa	324 MPa	543 MPa	64 %	74 %					128 HB
MR2898	23.5"	Tr	297 MPa	339 MPa	559 MPa	60 %	64 %					
MR2698	10X10MM	Tr					220 J	209 J	201 J	RT		

Remarks - Bemerkungen - Remarques

Ultrasonically tested to ASTM A388 and found satisfactory  
 Intergranular corrosion test to ASTM A262E satisfactory  
 Intergranular corrosion test to BS EN ISO 3651-2 Satisfactory  
 No welding performed  
 No contact with Mercury or radioactive elements  
 Macrostructure see attached sheet  
 Approved to PED 97/23/EC TUV cert issued No 13595-01  
 Material in accordance with ASME Sec II Part A :04/Addenda 08  
 Material in accordance with EN10272/EN10222-3  
 Hardness Rockwell B = 70

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:   
 Chris Ryall - Quality Manager  
 Approved signatory for ELG Carrs Stainless Steels