



CD22859

CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.
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074651

Purchaser - Besteller - Acheteur ASA Alloys Div of CSM ULC 20 Challenger Crescent Sherwood Park Alberta T8H 2R1 Canada	Inspection Certificate: Abnahmeurkunde: Certificat de reception:	DIN 50049 3.1 EN 10204	Cert No: Zeugnis Nr: Cert No:	133199	Date: Datum: Date:	04/02/13	
	Customer Order No: Kundenbestellnummer: No. de Commande Client:	1028693	Product Description - Beschreibung des Erzeugnisses - Description du Produit 18.75in Dia. x 8000 lbs Electric Melt & Vacuum Degassed Stainless Steel Solution Annealed Forged ASA 4404/316L EN 10088 3.6 AS 1M A102-09a, A278-00a, A479-10 F316/F316L 316/316L ASME SA182-LC, SA276-LE, SA479-LE F316/F316L 316/316L NACE MR0175-LE/ISO 15156				
	Our Order No: Unsere Auftr.-Nr. notre Comm. No:	49886 W136267/00	14497 LB 6576 Kgs.				

Chemical Analysis - Chemische Analyse - Analyse Chimique																						
Test No Schmelznummer No. de Cantine	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N											
CD22859	.023	.37	1.45	.035	.010	17.02	2.02	10.33	.35	.18	.042											

Heat Treatment - Wärmebehandlung - Traitement Thermique	Solution annealed @ 1080 C for 5 hours & Water Quenched
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Mechanical Properties - Mechanische Eigenschaften - Caracteristiques Mechanique													
Test No Probe Nr No. d'Essai	Test dimension Probenmessung Dimension		Proof Stress Streckgrenze Limite d'Elasticite		Tensile strength Zugfestigkeit Resistance a la traction	Elong % A Biegeschwächung % Allongement %	Red of Area % Bruchschwächung % Striction %	Impact Kerbschlagzähigkeit Resilience				Hardness Harte Duroin	
			0.2%	1.0%				J	J	J	RT		
230842	18.75"	L	260 MPa	292 MPa	530 MPa	66 %	70 %					138 HB	1
230842	18.75"	Tr	252 MPa	285 MPa	530 MPa	65 %		262 J	241 J	250 J	RT		

Remarks - Bemerkungen - Remarques

Ultrasonically tested and found satisfactory
 Intercrystalline corrosion test to ASTM A262:E satisfactory
 Intercrystalline corrosion test to BS EN ISO 3851-2 Satisfactory
 Grain size to ASTM E112 - 2
 Macrostructure see attached sheet.



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*
 Christyall - Quality Manager



Approved signatory for
 ELG Carrs Stainless Steels