

C155264
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CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.
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Purchaser - Besteller - Acheteur	Inspection Certificate: Abnahmeprüfzeugnis: Certificat de reception:	DIN 50049 3.1 EN 10204	Corl No: Zeugnis Nr: Corl No:	145910	Date: Datum: Date:	28/04/16
	Customer Order No: Kundenbestellnummer: No. de Commande Client:	P04220	Product Description - Beschreibung des Erzeugnisses - Description du Produit: 19.125in Dia. x 10000 lbs Electric Melt & Vacuum Degassed Stainless Steel Solution Annealed Forged SS1 REV 5 316/316L/F316/F316L 16986 LB 7705 Kgs.			
	Our Order No: Unsere Auftr.-Nr: notre Comm. No:	55171 W148434/00	ASTM A276-13a, A479-14, A182-14b, A484-14a, A193-14 B8M CL1 ASME SA182, ASME SA479, ASME SA193 B8M CL1, SAE AMS-QQ-S-763B AMS 5653, AMS 5648, NACE MR0175, ISO 15156-3, NACE MR0103			

Chemical Analysis - Chemische Analyse - Analyse Chimique													
Cast No Schmelznummer No. de Coulee	C	S	Mn	P	S	Cr	Mo	Ni	Cu	N	Co		
CD25643	.021	.29	1.26	.039	.025	16.86	2.08	10.22	.37	.047	.20		

Heat Treatment - Wärmebehandlung - Traitement Thermique: Solution annealed @ 1940 F for 5Hrs and water quenched

Mechanical Properties - Mechanische Eigenschaften - Caracteristiques Mechanique												
Test No Probe Nr No. d'Essai	Test dimension Probenabmessung Dimension	Proof Stress Streckgrenze Limite d'Elasticite	0.2%	1.0%	Tensile strength Zugfestigkeit Resistance a la traction	Elong % A Bruchdehnung % Allongement %	Le 5D	4D	Red of Area % Bruchdehnung % Striction %	Z	Impact Kerbschlagzähigkeit Resilience	Hardness Harte Durete
MR5327	19.125"	L	286 MPa	303 MPa	534 MPa	60 %	67 %	78 %				131 HB

Remarks - Bemerkungen - Remarques

Ultrasonically tested to ASTM A388 and found satisfactory
Intercrystalline corrosion test to ASTM A262:E satisfactory
Intercrystalline corrosion test to ASTM A262:A satisfactory
Grain size to ASTM E112 - Avg 2.5
Microstructure and macrostructure see attached sheet.
No welding performed
No contact with Mercury or radioactive elements
***Nominal Size = 19.0" Dia ***
Material produced by ELG Carrs Stainless Steels in the United Kingdom
Hot Working Reduction + 2.76:1

This report is a copy of original mill certificate and verifies that the product meets the requirements as originally ordered by Energy Steel Products.

DATE: 4/29/16 VERIFIED BY: [Signature]

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

