

CD24492 - 13.125"



CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.
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Purchaser - Besteller - Acheteur ESP Specialty Steel Products 7404 Railhead Lane Houston TX 77086 USA	Inspection Certificate: Abnahmeprüfzeugnis: Certificat de réception: DIN 50049 · 3.1 EN 10204	Cert No: Zeugnis Nr: Cert No: 140885	Date: Datum: Date: 08/10/14
Customer Order No: Kundenbestellnummer: No. de Commande Client: P03382	Product Description - Beschreibung des Erzeugnisses - Description du Produit: 13.125in Dia. x 8800lbs Electric Melt & Vacuum Degassed Stainless Steel Solution Annealed Forged SS1 REV 5 316/316L/F316/F316L ASTM A276, A479, A182/SA182, A484, ASME SA479, SA193/A193 B8M CL1 SAE AMS-QQ-S-763B, AMS 5853, AMS 5648, NACE MR0175, NACE MR 0103		
Our Order No: Unsere Auftr.-Nr. notre Comen. No: 53090 W144372/00			

Chemical Analysis - Chemische Analyse - Analyse Chimique													
Cast No Schmelznummer No. de Coulee	C	SI	Mn	P	S	Cr	Mo	NI	Cu	N	Co		
CD24492	.016	.35	1.49	.040	.025	18.85	2.09	10.42	.36	.072	.17		

Heat Treatment - Wärmebehandlung - Traitement Thermique Solution annealed @ 1940 F for 4 hours & Water Quenched

Mechanical Properties - Mechanische Eigenschaften - Caracteristiques Mechanique										
Test No Probe Nr No. d'Essai	Test dimension Probabmessung Dimension	L	Proof Stress Rp		Tensile strength Rm Zugfestigkeit Resistance à la traction	Elong % A		Red of Area % Z Bruchdehnung % Striction %	Impact Kerbschlagzähigkeit Resilience	Hardness Härte Dureté
			0.2%	1.0%		Lo5D	4D			
282524	13.125"	L	283 MPa	319 MPa	560 MPa	59 %	69 %	78 %		142 HB

Remarks - Bemerkungen - Remarques

Ultraasonically tested to ASTM A388 and found satisfactory
 Inter-crystalline corrosion test to ASTM A262:E satisfactory
 Inter-crystalline corrosion test to ASTM A262:A satisfactory
 Grain size to ASTM E112 - 3
 Microstructure and macrostructure see attached sheet.
 No welding performed
 No contact with Mercury or radioactive elements
 Nominal Size = 13" dia
 Material produced by ELG Carrs Stainless Steels in the United Kingdom
 Hot Working Reduction - 6.12:1

This report is a copy of the original
 Mill certificate and verifies that
 the product meets the requirements
 as originally ordered by
 ESP Specialty Steel Products
 Date 10/29/14 Verified

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