



CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.
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Purchaser - Besteller - Acheteur	DIN 50049 3.1 EN 10204	Cert No: Zeugnis Nr: 139199	Date: Datum: 09/07/14
ASA Alloys Div of CSM ULC 20 Challenger Crescent Shenwood Park Alberta T8H 2R1 Canada	Customer Order No: Kundebestellnummer: No. de Commande Client: P032403	Product Description - Beschreibung des Erzeugnisses - Description du Produit: 9in Dia. x 13200 lbs 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 15156	
Our Order No: Unsere Auftr.-Nr: notre Comm.-No: 52363 W143023/00	Inspection Certificate: Abnahmeprüfzeugnis: Certificat de reception:		

Chemical Analysis - Chimische Analyse - Analyse Chimique

Cast No Schmelznummer No. de Coulée	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N						
CD24056 B	.009	.39	1.28	.033	.011	16.72	2.08	10.11	.37	.19	.043						

Heat Treatment - Wärmebehandlung - Traitement Thermique

Solution annealed @ 1060 C for 4hrs and water quenched

Mechanical Properties - Mechanische Eigenschaften - Caractéristiques Mécaniques

Test No Probe Nr No. d'Essai	Test dimension Probabmessung Dimension	Proof Stress Streckgrenze Limite d'Elasticite 0.2%	Tensile strength Zugfestigkeit Resistance a la traction	Elong % Bruchdehnung % Allongement % Lo 5D 4D	Red of Area % Bruchreinschnürung % Striction %	Impact Kerbschlagzähigkeit Resilience	Hardness Harte Durete
MN2820A	9"	33.5 ksi	75 ksi	60.5 %	80 %		141 HB

Remarks - Bemerkungen - Remarques

Ultrasonically tested to ASTM A388 and found satisfactory
Intercrystalline corrosion test to ASTM A262: E satisfactory
Grain size to ASTM E112 - Avg 0
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

