

**BGH Edelstahl Siegen GmbH**

BGH Edelstahl Siegen GmbH Industriestraße 9 57076 Siegen

**ASA Alloys Inc.**  
**20 Challenger Crescent**  
**T8H 2R1 Sherwood Park, Alberta**  
**Kanada**
**Zeugnis-Nr. 402543 Rev.2 06.04.2021**  
**Certificate no.**  
**No. de certificat**

 Bescheinigung über Werkstoffprüfung nach DIN EN 10204  
 Certificate of material tests according to DIN EN 10204 **3.1**  
 Certificat des essais des matériaux selon DIN EN 10204

 Die Lieferung entspricht den vereinbarten Lieferbedingungen.  
 Delivery in accordance with the agreed terms of delivery.  
 La livraison correspond aux conditions de livraison convenues.

 Zeichen des Lieferwerkes Stempel des Werkstoffverständigen  
 Trade mark Inspector's stamp  
 Signe du fournisseur Poinçon de l'inspecteur

 Kunden-Bestell-Nr. **P049165**  
 Customer order no.  
 Cde. no. du client

 BGH-Auftrags-Nr. **814388-001-01**  
 BGH works no.  
 BGH référence


Erzeugnisform Product		Stab, rund, geschmiedet, geschält Round bars, forged, peeled									
Werkstoff / Quality		UNS S31603 - Type 316/316L									
Anforderungen Requirements		ASTM A 479 /A479M -19 ANSI/NACE MR 0175 /ISO15156-3 2015 ANSI/NACE MR 0175/ISO15156-1 2015									
Besichtigung und Maßnachprüfung Inspection and dimensional control Inspection et contrôle de dimension ohne Beanstandung without objection				Erschmelzung/Nachbehandlung Melting process/secondary refining Mode d'élaboration/traitement ultérieur E - AOD/LF				Verwechslungsprüfung (spectroanalytisch) Identification test (spectral-analysis) examination d'identification (analyse spectrale) ohne Beanstandung without objection			
Pos. Item Poste	Anzahl Quantity Quantité	Abmessung Dimension Dimensions						Gewicht Weight Poids	Schmelz-Nr. Heat-No. No. de coulée		
1	3	596.9 mm dia. x 1897 - 1900 mm (23.50" dia.)						12720 kg	732218		
Schmelze Heat %	C	Si	Mn	P	S	Cr	Mo	Ni			
732218	0,016	0,43	1,89	0,030	0,0010	17,00	2,04	11,17			
Wärmebehandlungszustand Condition of heat treat		lösungsgeglüht solution annealed									
Probe-Nr. Test-No.	Lage Loc.	Temp. °C	Rp0,2 N/mm <sup>2</sup>		Rm N/mm <sup>2</sup>	A4 %	Z %	Kerbschlagarbeit Impact value	Probenform Shape of test piece	Härte Hardness	
Soll/Req.	L	RT	>=170		>=485	>=30	>=40				
740R1	L	RT	283		573	56,7	75				
<p>Grain size acc. ASTM E 112: 3</p> <p>The UT examination according to ASTM A 745 / ASME SA-745, QL 4 was done: without objection</p> <p>Visual surface control was done: without objection</p> <p>Radioactivity inspection without objection, the measured value is below the detection limit of 0.1 Bq/g.</p>											
Anlagen Encl. Annexe				Siegen, den Place and date Lieu et date				Abnahmebeauftragter Inspector representative Inspecteur de réception			
Hardness Testing Report - 292648				18.09.2020				<b>Langer</b>			
Das Zeugnis wurde maschinell erstellt und ist auch ohne Unterschrift gültig.						This certificate was generated by data system and it is valid without signature as well. Ce certificat a été établi sur système informatique et est valable sans signature aussi.					

AWS

CLIENT: **ASA ALLOYS INC.**  
**#100, 112 Strathmoor Drive**  
**Sherwood Park, Alberta T8H 2B7**

DATE: **March 23, 2021**  
INVOICE #:  
JOB #:  
P.O. #: **PO49165**

EQUIPMENT OWNER: **ASA ALLOYS INC.**  
LOCATION: **ASA ALLOYS INC.**

WORK ORDERS: **37905**

### TECHNIQUE DETAILS

PROCEDURE #: **HTP-01, Rev.1**  
TEST METHOD: **ASTM A1038-2017**  
ACCEPTANCE STANDARD: **NACE MR0175**

### EQUIPMENT

Manufacturer: **BAQ** Type: **alphadur mini** Serial #: **ADM-1423**  
Last Calibration: **Jul-07-2020** Calibration Due: **Jul-07-2021**

**SURFACE CONDITION:**  Bare Metal  Ground  Machined  Blasted  Painted  Welded  Loose Scale Removed  
MATERIAL TYPE: **316 SS** MATERIAL THICKNESS: SURFACE TEMP:

### ITEMS TESTED

Ultrasonic contact impedance hardness testing was performed on the following.

#### Qty 1 - 316 SS bar stock

LOCATION	CN #	HEAT #	REMARKS	Accept	Reject
As per attached photos	402543	732218	BGH Edelstahl GmbH	✓	

### TEST RESULTS & COMMENTS

All readings were within the acceptable limit of < 237 BHN.

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**SIGNATURES** \* Client representative's signature indicates acceptance of the reports and results. Nortech Advanced NDT Ltd. is liable for examination costs only.

**CLIENT REPRESENTATIVE\* (PRINT/SIGN) /**

**Technician (PRINT)** Murray Nethery

**CGSB:**

**CGSB REG#:** 9638

**SNT-TC-1A:**

**Technician (SIGN)**



**Bar OD**



Comments	Accept	Reject
Area 1: 222 BHN (20 HRC)	✓	
Area 2: 216 BHN (18 HRC)	✓	
Area 3: 198 BHN (15 HRC)	✓	

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**Technician (PRINT)** Murray Nethery

**CGSB:**

**CGSB REG#:** 9638

**SNT-TC-1A:**

**Technician (SIGN)**

**Bar radius**



Comments	Accept	Reject
Area 4: 176 BHN (<15 HRC)	✓	

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**CLIENT REPRESENTATIVE\* (PRINT/SIGN) /**

**Technician (PRINT)** Murray Nethery

**CGSB:**

**CGSB REG#:** 9638

**SNT-TC-1A:**

**Technician (SIGN)**