
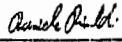
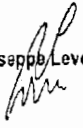
 ASOFORGE <small>Steels for the future</small>		INSPECTION CERTIFICATE / Werkzeugnis Acc. To EN 10204 - ISO 9001		MADE IN ITALY mod. Q.P9.02.b - rev.6	
ASOForge srl, Via Verginello 29/31 Castegnato BS(ITALY) - Tel. 030/6841011 Fax. 030/6841012			Certificate Nr./Zeugnis Nr. 5968/2020		Rev. 0
CUSTOMER					
Cliente / Kunde Client Order Nr. Ordine Nr. / Bestell Nr. P06069					
ASO ORDER Ordine Aso / Auftrags Nr. 8200747					
REFERENCE STANDARDS Standard di Riferimento / Referenzstandards			SS1 rev. 5.3 - 2016 éd. / ASTM A276, A479, A182/SA 182, ASTM A262 Practice E, A484, ASME SA479, SA193/A193 B8M CL1, SAE AMS-QQ-S-763B, AMS 5653, AMS 5648, NACE MR0175-ISO 15156, NACE MF0103, ASTM A320/A320M, ASME SA320/SA320M		
Client Item / Artikel Nr. 197		Heat N° / Schmelze 115692		STEEL GRADE / Stahl F316 / F316L - UNS S31600 - UNS S31603	
CONDITION Trattamento / Waermebehandlung Solution Annealing					
Melting process / Schmelzprozess Steel produced by electric furnace and refine in AOD / Elektrotlichtbogenofen und Ausbau in der AOD-Konverter					
Chemical Analysis / Chemische Analyse					


 ASONEXT <small>Steel for the future</small>		CERTIFICATO DI ANALISI CHIMICA E METALLOGRAFICA <small>Chemical analysis and metallographic certificate. Certificat d'analyse chimique et metallographique. Werkzeuzeugnis über die chemische Analyse und metallographische</small>		Azienda con sistema di gestione certificato secondo ISO 9001: ISO 14001: OHSAS 18001.		Manuale QAS Rev: 0 Date: 01/10/2020													
CLIENTE: ASOFORGE S.R.L. UNIPERSONALE <small>Purchaser / Client / Besteller</small>		ORDINE N. 8313486 <small>Purchase order no. / Commande nr. / Bestellnr.</small>		ORDINE ASON N. 9201708 <small>ASO order confirmation no. / ASO ordre de réception nr. / Bestellnummer</small>															
DOCUMENTO DI CONTROLLO TIPO 3.1 3.2 2.2 (EN 10204) <small>Document Control Type / Type de document de contrôle / Typensatz / Dokument</small>		STATO DI FORNITURA: <input checked="" type="checkbox"/> LINGOTTI GREZZI <small>Delivery supply condition / Etat de fourniture / Lieferbedingung</small>																	
ACCIAIO PRODOTTO AL FORNO ELETTRICO ED AFFINATO IN AOD - Steel produced by electric furnace and refined in AOD - Acier produit au four électrique et affiné en AOD - Edelstahl hergestellt und Ausbau in der AOD-Konverter																			
COLATA N. 115692 <small>Heat no. / Gussnr. Nr. / Schmelznr.</small>		ACCIAIO F316L <small>Steel / Acier / Stahl</small>		SPECIFICA/NORMA SS1 REV.5.3 <small>Designated steel / Acier designé / Vorkennzeichnung des Stahls</small>															
PROFILO 8500 <small>Size / Section / Profil</small>		PEZZI n. 2 <small>Parts number / Nombre de pièces / Anzahl Stücke</small>		<input type="checkbox"/> ACCIAIO DEGASATO SOTTOVUOTO <small>Not degassed steel / Acier non dégazé / Nicht Vakuumstahl</small>		<input checked="" type="checkbox"/> ACCIAIO NON DEGASATO <small>Not degassed steel / Acier non dégazé / Nicht Vakuumstahl</small>													
ANALISI CHIMICA - Chemical analysis - Analyse chimique - Chemische Zusammensetzung																			
C	Mn	Si	P	S	Cu	Cr	Ni	Mo	Sn	Al	V	Nb	Ti	B	As	Sb	Co	Ce	
0.013	1.78	0.34	0.032	0.025	0.44	16.65	10.26	2.08	0.008	0.005	0.060	0.031	0.003	0.0027	0.005	0.0030	0.132		
ANALISI GAS <small>Gas analysis / Analyse des gaz / gas analysis</small>		HIDROGENIO <small>ppm. / hydrogène</small>	OROGENIO <small>ppm. / oxygène</small>	AZOTO <small>ppm. / azote</small>	Ca <small>ppm.</small>	W <small>ppm.</small>	Zr <small>ppm.</small>	Pb <small>ppm.</small>	Bi <small>ppm.</small>	Ta <small>ppm.</small>	Al sol. <small>ppm.</small>	B sol. <small>ppm.</small>	Pcm <small>ppm.</small>	Xf <small>ppm.</small>	Jf <small>ppm.</small>	Pre <small>ppm.</small>	Di <small>ppm.</small>		
				680	0.0007	0.060													
TEMPRABILITA' JOMINY UNI EN ISO 642 <small>Temp. / Température</small>		mm HRC	1,5	3	5	7	9	10	11	13	15	20	25	30	35	40	45	50	
GRANO AUSTENITICO: SCALA ASTM E-112= 3,5 <small>Grain size chart / Grain à mesurer que indique / Prüfungskorngrößen-Längsschnitt</small>		Durezza HRC <small>HRC hardness</small>	INCLUSIONI NON METALLICHE: SCALA <small>non metal inclusion chart / non metal inclusion chart / Prüfungskorngrößen-Längsschnitt</small>																
NOTE: metallurgical examination - 1100023 - ASTM A276, A479, A182/SA182, A262 Practice E, A484, ASME SA479, SA 193/A193 - No wetting spiral have been performed. The material is verified to be free of radioactive contamination. - Radioactivity Co.60⁶⁰, 1 Bq/g.		RESPONSABILE GARANZIA DI QUALITA' <small>Quality Service - Responsable service Qualité - Qualitätssicherung</small> DANIELE RINALDI 		STABILIMENTO DI Ospiateo Italy 04-12-2020 Certificato 5968 / 2020 Revisione / Revisions / Revisione 0															

Statement confirming that all the operation have been performed in accordance with the Quality manual Rev. 00 dated 01/10/2020 /
 Erklärung, die bestätigt, dass alle Operationen in Übereinstimmung mit dem Quality manual Rev. 00 dated 01/10/2020 durchgeführt wurden
 (ASO-Qualitäts-Handbuch)

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 ASOFORGE Steeled for the future	INSPECTION CERTIFICATE / Werkzeugeignis Acc. To EN 10204 - ISO 9001		MADE IN ITALY mod. Q.P9.02.b - rev.6
			CERT. TYPE 3.1
ASOFORGE srl, Via Verginello 29/31 Castegnato BS(ITALY) - Tel. 030/6841011 Fax. 030/6841012		Certificate Nr./Zeugnis Nr. 5968/2020	Rev. 0
CUSTOMER Cliente / Kunde			
Client Order Nr. Ordine Nr. / Bestell Nr.		P06069	
ASO ORDER Ordine Aso / Auftrags Nr.		8200747	
REFERENCE STANDARDS Standard di Riferimento / Referenzstandards		SS1 rev. 5.3 - 2016 ed. / ASTM A276, A479, A182/SA 182, ASTM A262 Practice E, A484, ASME SA479, SA193/A193 B8M CL1, SAE AMS-QQ-S-763B, AMS 5653, AMS 5648, NACE MR0175-ISO 15156, NACE MR0103, ASTM A320/A320M, ASME SA320/SA320M	
Client Item / Artikel Nr.	Heat N° / Schmelze	STEEL GRADE / Stahl	CONDITION Trattamento / Waermebehandlung
19"	115692	F316 / F316L - UNS S31600 - UNS S31603	Solution Annealing

VDH: Visual, Dimensional and Surface Hardness / Visibilitaet, Dimension Oberflaechen Haerte

Bar Nr	Nominal section ["]	Real section ["]	Length[mm]	Weight [Kg]	Forging Reduction	Hardness test (HB)
						140 - 241
6	19"	19,21"	5030	7490	3,14:1	164 - 162

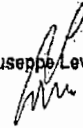
Material must be of European origin. According to ISO 9001:2008 - ISO 9002 - 1987 EN 29002 1987 Approval.
STAINLESS STEEL FORGED ROUND BARS

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 LLC
 Date 3-5-21 Verified [Signature]


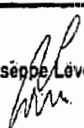
No Welding Performed, Mercury Free, Radioactivity Co.60 < 0,1 Bq/g. VISUAL INSPECTION: Satisfactory. Free from cracks, 100% anti-mix-test, free from toxic contamination. Mercury free. According to NACE MR0103. "Emesso in accordo con TUV di Monaco (Giugno 2011)"

Ingot type / Blockart Polygonal 11000	Country of origin / Ursprungsland ITALY
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Material description / Materialbeschreibung Forged steel bar

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	INSPECTION CERTIFICATE / Werkzeugeignis Acc. To EN 10204 - ISO 9001		MADE IN ITALY mod. Q.Pg.02.b - rev.6	
			CERT. TYPE 3.1	
ASOForge srl, Via Verginello 29/31 Castegnato BS(ITALY) - Tel. 030/6841011 Fax. 030/6841012		Certificate Nr./Zeugnis Nr. 5968/2020		Rev: 0
CUSTOMER				
Cliente / Kunde Client Order Nr. Ordine Nr. / Bestell Nr.				
P06069				
ASO ORDER				
Ordine Aso / Auftrags Nr. 8200747				
REFERENCE STANDARDS				
Standard di Riferimento / Referenzstandards SS1 rev. 5.3 - 2016 ed. 7 ASTM A276, A479, A182/SA 182, ASTM A262 Practice E, A484, ASME SA479, SA193/A193 B8M CL1, SAE AMS-QQ-S-763B, AMS 5853, AMS 5848, NACE MR0175-ISO 15156, NACE MR0103, ASTM A320/A320M, ASME SA320/SA320M				
Client Item / Artikel Nr.		Heat N° / Schmelze		STEEL GRADE / Stahl
19"		115692		F316 / F316L - UNS S31600 - UNS S31603
CONDITION Treatment /				
Waermebehandlung				
Heat Treatment / Waermebehandlung Heating Temperature 1050°C, Holding time 8h:49min. Cooling in Water				
Furnace temperature monitoring by thermocouple: method A (atmosphere). Furnace calibration according to API 6A Annex M.				
Mechanical Properties / Mechanische Eigenschaften				
Mechanical testing on a plontongation from the forged bar after quality heat treatment				
Test One - bar size		19"		
Tensile test / Zugversuch		Lot nr. / Fertigungsauftr Nr.		Direction
Temperature		Rm [Mpa]	Rp 0.2% [Mpa]	Z [%]
Required	20°C	> 515	> 205	> 30
Obtained		519	220	56
Impact test /		Lot nr. / Fertigungsauftr Nr.		Direction and
Schlagbiegeversuch				position
Temperature		Kv [joule]	Kv Av. [joule]	Hard. / HB
Required	20°C	inf.	inf.	
Obtained		102 - 97 - 99	99,33	153 - 153 - 152
Remarks / Notes / Anmerkungen:				
According to ASTM A182				
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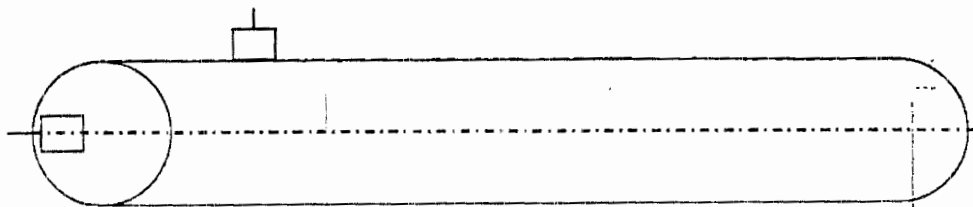
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	INSPECTION CERTIFICATE / Werkzeugnis Acc. To EN 10204 - ISO 9001		MADE IN ITALY mod. Q.P9.02.b - rev.6
			CERT. TYPE 3.1
ASOForge srl, Via Verginello 29/31 Castegnato BS(ITALY) - Tel. 030/6841011 Fax. 030/6841012		Certificate Nr./Zeugnis Nr. 5968/2020	Rev. 0
CUSTOMER Cliente / Kunde			
Client Order Nr. Ordine Nr. / Bestell Nr.		P06069	
ASO ORDER Ordine Aso / Auftrags Nr.		8200747	
REFERENCE STANDARDS Standard di Riferimento / Referenzstandards		SS1 rev. 5.3 - 2016 ed. / ASTM A276, A479, A182/SA 182, ASTM A262 Practice E, A484, ASME SA479, SA193/A193 B8M CL1, SAE AMS-QQ-S-763B, AMS 5653, AMS 5648, NACE MR0175-ISO 15156, NACE MR0103, ASTM A320/A320M, ASME SA320/SA320M	
Client Item / Artikel Nr.	Heat N° / Schmelze	STEEL GRADE / Stahl	CONDITION Trattamento / Waermebehandlung
19"	115692	F316 / F316L - UNS S31600 - UNS S31603	Solution Annealing

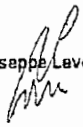
Ultrasonic Inspection / Ultraschallprüfung

Reference Standard / Referenzstandards	ASTM A388 (6,4mm F.B.H. max)		
Test method / Ausführungsverfahren	DGS / AVG	Instrument / Ausrüstung	USN60
Test technique / Prüftechnik	pulse - echo - method	Reference block / Testkörper	V1
Transducers / Prüfkopftyp	31S	Test frequency / Prüffrequenz	1 Mhz
Surface condition / Oberflächenzustab	Machined	Testing scope / Prüfumfang	100% of the surface
Sensitivity / Empfindlichkeit	6,4mm F.B.H.	Coupling / Kupplung	Couplant 333
Qualification operator / Prüfer. Controleur	UT 2 level - EN ISO 9712	Test result / Beachtung	Conform to : ASTM A388
Indications detect / Hinweise gefunden	Bar Nr. 6, No indications detect		

Bar Sketch - Stabform



The content is correct and accurate, all test results are in compliance with the material specification.
"Vedi Allegato Certificato di Analisi chimica e metallografica Nr 5968/2020" / "See annex Certificate of chemical analysis and metallographic Nr 5968/2020".

21/01/2021 Issued / Date	Castellino Giuseppe Level II UNI EN ISO 9712  Werksachverständiger / Quality Control	Only for Cert. 3.2 Stamp and Signature Surveyor
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