



COGNIE ACCIAI SPECIAL S.p.A.
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 C.F. 02187380987
 V.A.T. 100571320076 - R.E.A. n. AO 58474

Company with management systems ISO
 approved and certified according to ISO 9001.
 ISO/TS 16949 e ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
 (A03) DOCUMENT NUMBER 2016005405
 PAGE 1/2

(A06) CUSTOMER'S ORDER :
 (A07) MANUFACTURER'S WORKS :
 (A05) PRODUCER OF THE DOC :
 (A08) MANUFACTURER'S WORKS ORDER NO. 25204438 /20 (A04) MARK OF THE MANUFACTURER : COGNIE
 THE CERTIFIED PRODUCTS ARE COMPLYING TO THE PURCHASE ORDER

INTERNAL SPEC :
 (B01) PRODUCT :
 (B03) SURFACE FINISH :
 (B04) PRODUCT DELIVERY CONDITION :
 (B09) PRODUCT DIMENSIONS (mm) :
 (B02) GRADE :
 (B07) IDENTIFICATION HEAT NO. :
 (B06) MARKING OF THE PRODUCT :
 STOCKBARRER2
 SPE ROUGHPEELED
 1X Hot finished
 RS SOLUTION (ANNEALING)
 133,350
 A1S1 316/316L EN1.4401/4404
 502219
 1.4404
 TECHNICAL RULE :
 ROUND BARS TOLERANCE : + 1,500 - 0,0000
 ADZ000
 (B10) LENGTH (mm)
 INTERNAL GRADE :
 (B07) IDENTIFICATION LOT NO. :
 TEST PIECE N. :
 04000 /06000
 F316L IMCO
 275950
 595

THE PRODUCT IS CONFORMING TO THE CONTRACT AGREEMENT AND TO THE RULE AD2000-MERKBLATT W0/W2.
 REFERENCE NORMS: EN 10088-3(05), EN 10272(07), ASTM A276(08)/ASME SA276(10), ASTM A479(11)/ASME SAA479(10), ASTM A193(08) B8M CLASSE
 ID, ISO1516-3/NACE MR0175(09), NACE MR0103(07),
 REFERENCE NORMS FOR CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES: ASTM A182(10)/ASME SA182(10),
 ASTM A484 DOES NOT APPLY FOR SIZE AND LENGTH TOLERANCES.
 WATERMARK IN COMPLIANCE WITH THE NORSEK M-630 MDS S01
 STEELMARKING EAF + AOD
 HOT ROLLED
 REDUCTION RATIO 3,5

(C71) CHEM. COMP. - LADLE ANALYSIS ACCORDING ASTM E1019-A751-E1086-E415-A590
 Control lot No. - Weight : 020000612675

C	0,027	0,37	1,80	0,030	0,026	0,079	16,88	2,07	10,05	0,41
Si										
Mn										
P										
S										
N										
Cr										
Mo										
Ni										
Cu										

HARDNESS TEST IN AS DELIVERED CONDITION
 Control lot No. - Weight : 020000612725
 SPECIFICATION
 ENISO6506
 3.180 KG
 HARDNESS TEST HB TESTING METHOD : 10/3000

IMPACT TEST IN AS DELIVERY CONDITION
 Control lot No. - Weight : 020000612725
 SPECIFICATION
 (C40) TYPE OF TEST PIECE
 (C03) TEST TEMPERATURE °C
 MEASUREMENT UNIT

242	244	242	239	246	231	249	249	249	248
248	233								

 EN ISO 148-1-KV2
 KV
 20
 U
 (C02) DIRECTION OF THE TEST PIECE: L

CHEKED HY	COGNIE GROUP
16 FEB 2016	
10136906	



COGNE ACCIAI SPECIALI S.p.a.

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Company with management systems ISO
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ISO/TS 16949 e ISO 14001.

INSPECTION CERTIFICATE 3.1 (EN 10204:2004)
(A03) DOCUMENT NUMBER 2016005406
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TENSILE TEST IN AS DELIVERY CONDITION

Control lot No. - Weight :020000612725 - 3.180 KG
SPECIFICATION EN-ISO6892-1

(C02) DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	RM MPA	RP02 MPA	A5 %	Z %	RP1 MPA
OBTAINED	614	271	68,9	81,2	317
	631	283	71,0	78,1	330
	596	282	72,0	80,4	328
	615	278	71,4	82,9	319

GRAIN SIZE

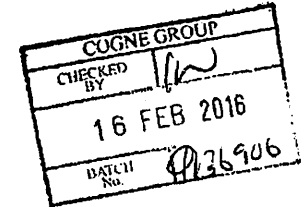
Control lot No. - Weight :020000612725 - 3.180 KG
SPECIFICATION ASTME112 --
OBTAINED 3 5

TENSILE TEST

Control lot No. - Weight :020000612725 - 3.180 KG
SPECIFICATION ASTM A370-E8-0.5" SPEC

(C02) DIRECTION OF THE TEST PIECE: L

MEASUREMENT UNIT	TS KSI	YS KSI	RA %	EL %
OBTAINED	91	41	81,2	4,0 D
	91	40	81,6	73,5
	92	41	82,7	75,6
	91	40	80,3	75,1
				74,9



CORROSION TEST ACCORDING TO ASTM A262/02A Practice.E EN ISO 3651-2: SATISFACTORY.
 VISUAL INSPECTION OF SURFACE AND DIMENSIONAL CONTROL ACCORDING TO EN 10221 CLASS 4 AND EN 10060: SATISFACTORY.
 ULTRASONIC TEST ACCORDING TO EN 10308 Class 3, equivalent to ASTM A388 FBH 8 (DIAM <=400) or to EN10228-4 Class 3 equivalent to ASTM A388 FBH11 (DIAM >400): SATISFACTORY.
 ANTIMIX TEST WITH PORTABLE SPECTROMETER: SATISFACTORY.
 NO WELDING REPAIR ON THE MATERIAL.
 FREE FROM RADIOACTIVE CONTAMINATION.
 THE PRODUCT SATISFIES CE DIRECTIVES: 2011/65 - 2000/53 2002/95(RoHS) 2003/11 - 2005/618 AND PED 97/23/EC.
 THE MATERIAL IS FREE OF ANY MERCURY, MERCURY COMPOUNDS AND OR RADIUM CONTAMINATION AT TIME OF SHIPMENT AND WAS PRODUCED WITHOUT USING OZONE DEPLETING SUBSTANCES OF CLASS I AND II.
 MARKING: SYMBOL OF THE MANUF. WORK, MATERIAL, N., CAST N., LOT N., RECEIVING AGENT STAMP
 DOCUMENT ISSUED IN AGREEMENT WITH TUEV BAYERN(11.1972) WAVING OF COUNTERSIGNING (SEE TUEV BAYERN LETTER DATED 17.01.80).
 QUALITY SYSTEM CERTIFIED BY I.G.Q ACCORDING TO UNI EN ISO 9001:2008 - ISO/TS 16949:2009 (THE LAST ONE ONLY FOR HOT ROLLED-PEELED-GROUND, STAINLESS STEEL BARS AND ATOMIZED METALLIC POWDERS).
 ALL THE NORMS MENTIONED ARE INTENDED IN THEIR LATEST REVISION AT THE DATE OF ISSUE OF THIS DOCUMENT.
 THE PRODUCT IS CONFORMING TO THE REQUIREMENTS AND COMPLIES WITH GRADE F316L ACCORDING TO ASTM A182 REGARDING CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES.
 (Z02) INSPECTOR'S STAMP 00

(Z01) DATE 20.01.2016

POLLASTRELLI ANDREA FC (WORKS INSPECTOR) - ELECTRONICALLY GENERATED CERTIFICATE

Customer Address
M2M MACHINING LIMITED
15-4216 64TH AVENUE SE
CALGARY
ALBERTA
T2C 2B3
CANADA



Beeley Wood Works, Beeley Wood Lane
Sheffield S6 1ND

Tel: - 0114 2312271 Fax: - 0114 2324983

Cert No.	79003
Abbey Order No.	79003 item 1
Customer Order No.	2016-645
Date	24 May 2016

CERTIFICATE OF ANALYSIS AND TEST

Material	Cast No.		C	Mn	P	S	Si	Ni	Cr	Mo	N
ASTM A182-15 F316 / ASTM A479 316 NORSOK MDS S01 REV. 5	502219	Min						10.0	16.0	2.0	
	Mill	RESULT	.027	1.80	.030	.026	.37	10.09	16.88	2.07	.079
	COGNE	Max	.035	2.0	.045	.030	1.0	14.0	18.0	3.0	.10
	Melt Method										
	EAF + AOD	Min									
		RESULT									
	Max										

Heat Treatment / Testing	RESULTS	Specification	0.2% PROOF STRESS	TENSILE	ELONG.	R OF A	HARDNESS	IMPACTS (JOULES)
			Mpa	Mpa	%	%	HBW	TESTED AT -46°C
SOLUTION ANNEALED TO STANDARD		205 Min	515 Min	35 Min	50 Min			Info
	271	577	52.1	51	182	102 90 88		
						Lateral Expansion		
						N/A		

Additional Testing / Information

Representing

MACHINED TO:
1 Off - 5.25" Dia. x 3.25" Thick

This material is supplied within the scope of our approval to BS EN ISO 9001: 2008

For and on behalf of
Abbey Forged Products Ltd

Signed _____
Authorised Signature