



R & M Forge & Fittings

6455 Wesco Way

Houston, TX 77041

(713) 896 - 4081 (713) 896 - 6206

www.rmforge.com

MATERIAL TEST REPORT

Date: 03/05/2021

Customer:	PO# 2021-1221	Line Item: 1	R&M S/O#: 44929
	DESCRIPTION: ROUGH MACHINED 1/4" ALLOWANCE - 250 RMS 19.0" OD X 5.50" THK		
	TAG: JOB# 1605, 1606, 1607		
	HEAT NUMBER: 67006	QTY. Shipped: 2 PCS.	
Spec: ASME SA182 F51 (S31803)	2019 EDITION / LATEST ADDENDA	Mill: ITALFOND (ITALY)	

	C	MN	P	S	SI	NI	CR	MO	CU	V	CB/NB
LADLE	.02	1.51	.024	.0006	.37	5.63	22.08	3.07			
PRODUCT											
	N	AL	CE	FE	TI	W	SB	SN	AS	CB+TA	J-FACTOR
LADLE	.191										
PRODUCT											

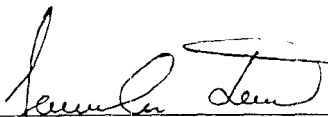
Mechanical Properties	
YIELD (PSI)	66,500
0.2% OFFSET	
TENSILE (PSI)	102,400
ELONG. (%) 2"	45.0
R/A (%)	80.0
HARDNESS	255-253
CVN (FT/LBS)	203-190-200
AVG.	197.667
LAT. EXP.	.100-.090-.092
SHEAR (%)	100-100-100
CVN TEMP.	-40F

Heat Treatment
SOLUTION ANNEALED @ 1922F FOR 5 HOURS / WATER QUENCHED

Requirements & Other Results
EAF AOD
PER NACE MR0175
CVN @ -40F PER UHA-51
.015 MIN LATERAL EXPANSION
PER EN 10204 3.1
FERRITE CONTENT: 58%

COMMENTS:
 THIS PRODUCT HAS NOT COME IN CONTACT WITH MERCURY OR MERCURY COMPOUNDS. NO WELDING PERFORMED.
CERTIFICATION OF CONFORMANCE
 THIS IS TO CERTIFY THAT THE ITEMS DESCRIBED ON THIS DOCUMENT ARE IN FULL CONFORMANCE WITH ALL REQUIREMENTS OF YOUR PURCHASE ORDER AND MATERIAL SPECIFICATIONS.

We hereby certify that all test results and process information contained herein are correct and true as contained in the records of the company.
 This 5th day of March 2021



 Janela Lian Tan/Quality Assurance

ANS



Tel. (+39).(030).6829911
 Fax. (39).(030).6820616
 Via Industriale, 1 - 25021 BAGNOLO MELLA (BS) ITALY

CERTIFICATE OF QUALITY AND MATERIAL TESTING

INSPECTION CERTIFICATE N. ACI 3293 DATE : 04/11/2020
 according to EN 10204.3.1

FIRM :
 ORDER : ORDER CONFIRMATION: 209229

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
67006	3	FORGED ROUND GROUND BARS Ø16"	F51/F60

H.T. CONDITION:

HEAT ANALYSIS

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	B
0,016	0,37	1,51	0,024	0,0006	22,08	3,07	5,63		
Ca	Al	V	Ti	W	Ta	N	Co	Nb	Fe
						0,191			

Steelmaking process E.A.F. + A.O.D. refining
 No welding performed on material
 Material free from Mercury contamination
 Material inspected with a gamma spektrometer and with no radioactive contamination beyond the limits provided
 for by the EU-Radiation Protection 122-part 1, when relevant, especially Co-60 < 0,1 Bq/g
 Chemical analysis according to your order and ASTM A182 (F51)
 Forging ratio 3,8:1
 Issued in agreement with TÜV Süd Industrie Service GmbH (March 1995)
 QMS approved according to PED 2014/68/EU, Annex I, Para. 4.3 by Notified Body 0036
 Certification no. DGR-0036-QS-W 55/2002/MUC
The delivered products comply with the standards, specifications and requirements of the order.

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. Quality Assurance



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CERTIFICATE OF QUALITY AND MATERIAL TESTING

ULTRASONIC TEST

INSPECTION CERTIFICATE N.

UT/ **3293**

DATE : 04/11/2020

according to EN 10204.3.1

FIRM :

ORDER :

ORDER CONFIRMATION: **209229**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
67006	3	FORGED ROUND GROUND BARS Ø16"	F51/F60

H.T. CONDITION :

ULTRASONIC TEST REPORT

EQUIPMENT	:	KRAUTKRAMER USM 36
CALIBRATION METHOD	:	BACK WALL ECHO
COUPLANT	:	GEL
KIND OF PROBE	:	B2S
SURFACE CONDITION	:	Ground
TESTING PROCEDURE	:	ASTM A388
ACCEPTANCE CRITERIA	:	ASME VIII Div.2 Par. 3.3.4
RESULT	:	No recordable indications found

SURVEYORS	CUSTOMER INSPECTION	ITALFOND S.p.A. NDE Inspector
		ISO 9712-UT PT Lev. 2 SNT-TC 1A / UT PT Lev. II STEFANO TEDOLDI