



R & M Forge & Fittings
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MATERIAL TEST REPORT

Date: 09/13/2022

Customer:	PO# 2022-1416	Line Item: 1	R&M S/O#: 45792	
	DESCRIPTION: ROUGH MACHINED 1/4" ALLOWANCE – 250 RMS 18.75" OD X 5.25" THK			
	TAG: JOB# 6252 , 6253			
	HEAT NUMBER: 68916		QTY. Shipped: 2 PCS.	
Spec: ASME SA182 F51 (S31803)	2021 EDITION / LATEST ADDENDA		Mill: ITALFOND (ITALY)	

	C	MN	P	S	SI	NI	CR	MO	CU	V	CB/NB
LADLE PRODUCT	.021	1.51	.025	.0007	.38	5.68	22.11	3.08			
	N	AL	CE	FE	TI	W	SB	SN	AS	CB+TA	J-FACTOR
LADLE PRODUCT	.190										

Mechanical Properties	
YIELD (PSI) 0.2% OFFSET	75,300
TENSILE (PSI)	104,000
ELONG. (%) 2"	41.0
R/A (%)	79.0
HARDNESS	243-242 BHN
CVN (FT/LBS) AVG.	206-227-215 216
LAT. EXP.	.092-.088-.090
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

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 13th day of September 2022



 Beau Christoffersen/Quality Control

CERTIFICATE OF QUALITY AND MATERIAL TESTING

INSPECTION CERTIFICATE N.

AC/ 4122Rev.1

ISSUE DATE : 03/12/21

REVISION DATE : 08/09/22

according to EN 10204.3.1

FIRM :

ORDER : **FF-26389**

ORDER CONFIRMATION: **210450**

HEAT	N. of PCS	MATERIAL DESCRIPTION	MATERIAL GRADE
68916	4	FORGED ROUND GROUND BARS Ø10"	F51/F60

H.T. CONDITION:

HEAT ANALYSIS

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	B
0,021	0,38	1,51	0,025	0,0007	22,11	3,08	5,68	0,271	0,0027
Ca	Al	V	Ti	W	Ta	N	Co	Nb	Fe
	0,009					0,190			

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/F60)

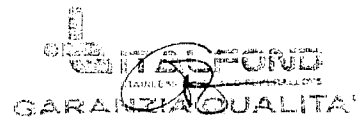
Forging ratio 7,1:1

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
		 GARANZIA QUALITÀ

CERTIFICATE OF QUALITY AND MATERIAL TESTING

ULTRASONIC TEST

INSPECTION CERTIFICATE N.

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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