

**CERTIFICATE OF TEST**
 Certification Date  
17-MAY-2017
**CUSTOMER ORDER NUMBER**

203285

 EARLE M. JORGENSEN COMPANY  
6201 LUMBERDALE  
HOUSTON TX 77092

 Invoice Number  
T222137
**CUSTOMER PART NUMBER**

510636

**SOLD TO:** B & T OILFIELD PRODUCTS
 7801 SCHOON ST UNIT C  
ANCHORAGE AK 99515
**SHIP TO:**

B &amp; T OILFIELD PRODUCTS

 117 SPINNER DR  
BROUSSARD LA 70518

 Description: 17-4 HR RT BAR - COND DBL H1150 - NACE MR0175  
4 RD X 12' R/L  
HEAT: 265905  
ITEM: 510636  
Line Total: 17.4 FT
**Specifications:**

ASTM A564 13

NACE MR0103 12

ASTM A388

NACE STD MR0175

AMS 5643U

EN 10204 3.1

ISO 15156-3 09

API 6A PSL3

**CHEMICAL ANALYSIS**

C	MN	P	S	SI	CR	NI	MO
0.04	0.51	0.027	0.025	0.49	15.72	4.34	0.18

  

CU	N	CB	TA	CBTA
3.33	0.03	0.27	0.001	0.27

RCPT: R219840

VENDOR: VALBRUNA STAINLESS

COUNTRY OF ORIGIN : ITALY

**MECHANICAL PROPERTIES**

DESCRIPTION	YLD STR PSI	ULT TEN PSI	%ELONG IN 02 IN	%RED IN AREA	HARDNESS RC
DBL H1150	122800.0	139500.0	21.3	62.7	31

  

DESCRIPTION	YLD STR	ULT TEN	%ELONG	%RED IN AREA	HARDNESS RC
SURFACE					32

**IMPACT TEST**

TYPE	TEMP	ORNT	UOM ft-lbs SMPL#1	#2	#3	AVG	% SHEAR	LAT EXPN	DESCRIPTION
CHARPY	-75 F	LONG	54.0	56.0	50.0	53.3			10MMx10MM

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

Material did not come in contact with mercury while in our possession.

SHANE LU

Manager, Quality Assurance

# CERTIFICATE OF TEST



Page 02 of 02

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Description: 17-4 HR RT BAR - COND DBL H1150 - NACE MR0175  
4 RD X 12' R/L Line Total: 17.4 FT  
HEAT: 265905 ITEM: 510636

MATERIAL IS FREE FROM MERCURY CONTAMINATION  
NO WELD REPAIR PERFORMED ON MATERIAL  
THERMAL TREATMENT: OK  
MACRO: OK

## COMMENTS

MELT PRACTICE: EF/AOD  
REDUCTION RATIO: 5:1 MINIMUM  
TENSILE SPECIMEN SIZE .505"  
TEST PIECE IS A PROLONGATION OF THE BAR  
HEAT TREATMENT:  
SOLUTION ANNEALED @ 1900 DEG F FOR 6.25 HOURS - AIR COOLED  
TO BELOW 90 DEG F  
ANNEAL FURNACE MONITORED BY ATMOSPHERIC THERMOCOUPLES  
HARDENED @ 1150 DEG F FOR 4 HOURS - AIR COOLED TO BELOW 90 DEG F  
HARDENED @ 1150 DEG F FOR 4 HOURS - AIR COOLED TO BELOW 90 DEG F  
AGING FURNACE MONITORED BY CONTACT SURFACE THERMOCOUPLES  
PASSED UT TEST PER ASTM A388 ACCEPTANCE LEVEL API 6A PSL3  
HEAT TREAT LOT NUMBER: 265905/0055/0058  
LATERAL EXPANSION: 23/32/30  
DELTA FERRITE: 0.4%  
YIELD TAKEN AT 0.2% OFFSET  
MATERIAL MELTED IN ITALY MANUFACTURED IN THE USA

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SHANE LU

Manager, Quality Assurance

**VALBRUNA**

SLATER STAINLESS, INC.

2400 TAYLOR STREET WEST - PO BOX 630  
FORT WAYNE IN 46802 USA  
PHONE 260.434.2800 - FAX 260.434.2801**Product Certification Report**Report Number: **5317980**

Certified on Apr 25, 2017 Page 1 of 2

Order I.D.	Order Date	Commodity Code	Certified On Apr 23, 2017 Page 1 of 2			
1700757 006	4/04/17	510636				
Dim 1	Dim 2	Dim 3	Heat I.D.	Customer I.D.	Customer Purchase Order	
4.0000	.0000	.0000	265905	001289	P793285	
Product Shape	Product Surface		Customer Grade			
Rounds	HR & Rough Turned		630			
Length (Inches)	Bill of Lading #		Weight		Melt Date: 11/17/14	
192.000 Min. 240.000 Max.	429391		001406 LBS			

**Ship To**  
EARLE M. JORGENSEN CO.  
6201 LUMBERDALE  
HOUSTON, TX 77092

**Sold To**  
VALBRUNA STAINLESS, INC.  
2400 TAYLOR STREET WEST  
FORT WAYNE, IN 46802

Lifts: 0055 0058

CONDITION DBL H-1150

UNS S17400

CAMERON MS-021111-02

NACE MR0175/ISO 15156-3 2009

AMS 5643U chem only

NACE MR0103-2012

ASTMA 564-13 Type 630

REDUCTION RATIO (Ratio to 1)

4.0

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Cb	Ta	Cb+Ta
.04	.51	.027	.025	.49	15.72	4.34	.18	3.33	.03	.27	.001	.27

ROCKWELL HARDNESS ASTM E18-16

HRC

31.0

32.0

ROOM TEMP TENSILE ASTM E8-16a

TS (PSI) .2%YS (PSI) %EL(2") %RA

139500 122800 21.3 62.7

CHARPY V NOTCH E23-16b 10x10mm

FT/LB FT/LB FT/LB LAT EX LAT EX LAT EX AVG FT LB TEST(F)

54 56 50 23 32 30 53 75

MAGNETIC PARTICLE to AMS2303F

FREQ SEV

AVG .00 .00

PRODUCTION HEAT TREATMENT

SOL-ANN(F) SOL-ANN(HR) QUENCH AGE(F) AGE(HR) QUENCH AGE(F) AGE(HR)

1900 6.25 Air 1150 4 Air 1150 4.0

QUENCH

Air

MACRO ASTM E340-15/E381-01(12)

MACRO

OK

OK

OK

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes. Including Federal law Title 18, Chapter 47. Consult material safety data-sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

email: TLandwehr@valbruna.us

Tad Landwehr

5/9/17 510636  
265905  
R219840  
(2)



**VALBRUNA**

SLATER STAINLESS, INC.  
 2400 TAYLOR STREET WEST - PO BOX 630  
 FORT WAYNE IN 46802 USA  
 PHONE 260.434.2800 - FAX 260.434.2801

**Product Certification Report****Report Number: 5317980****Certified on Apr 25, 2017 Page 2 of 2**

Order I.D.	Order Date	Commodity Code			
1700757 006	4/04/17	510636			
Dim 1	Dim 2	Dim 3	Heat I.D.	Customer I.D.	Customer Purchase Order
4.0000	.0000	.0000	265905	001289	P793285
Product Shape	Product Surface				Customer Grade
Rounds	HR & Rough Turned				630
Length (Inches)	Bill of Lading #		Weight		
192.000 Min.	240.000 Max.		429391 001406 LBS		Melt Date: 11/17/14

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 HOUSTON, TX 77092

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 VALBRUNA STAINLESS, INC.  
 2400 TAYLOR STREET WEST  
 FORT WAYNE, IN 46802

PERCENT FERRITE (AMS 2315G)  
 % FERRITE Etchant Magnification X  
 AVG .4 Marbles 100

ULTRASONIC TEST (ASTM A388)  
 OK

Reduction ratio 5 To 1 Min.

Electric Furnace melted; AOD refined.

No welding or weld repair done.

Free of mercury and low melting alloy contamination.

Furnaces are calibrated per the requirements of API 6A PSL 3 (APP. H).

Furnace charts are maintained at the mill and are available for inspection.

Annealed soak times controlled by atmosphere thermocouples. Age soak times by contact thermocouples.

Tensile and charpys were tested longitudinally and at mid-radius location.

Ultrasonic tested to ASTM 388 per acceptance level API 6A PSL3 satisfactory.

Material was air cooled below 90 Deg F between each Furnace treatment.

Mechanical Properties are obtained from the actual bar. Ten sile specimen .505", charpy specimens 10mm x 10mm.

QTC was sacrificial.

Chemical testing to one or more of the listed ASTM methods:

E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length. %elong after fracture.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications. DFARS compliant. Our heat treat furnaces use air atmosphere.

Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

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