

HEAT 552961 ORDER 685299/ 03 BOL 0247123 * CERTIFICATION * 05/30/19

SHIP TO:
ROLLED ALLOYS INC.
9818 EAST HARDY ROAD

HOUSTON 770930000

----- YOUR ORDER & DATE -----
0169532-HOU 12/04/18 CUST# 0773001 CUST TAG#0011016

----- ITEM DESCRIPTION -----
GRADE N60 Ship Condition CONDA
Size N60 RND CFA CONDA 2.0000 x 144.000 RL
Country of Melt: SWEDEN Country of Mfg.: UNITED STATES
No weld repair
Free of mercury contamination, Free of radiation contamination
No WEEE relevant substances; Meets RoHS-2011/65/EU and 2015/863

Total Bundles 1 Total Weight 1896 Approx. Hot Red. Ratio 45:1

WO 2094063 Bundles: 1C

----- SPECIFICATIONS -----
MFG TO FINISHED BAR IN THE USA FROM BILLETS IMPORTED SWEDEN
ASTM A276/A276M 17 ASTM A479/A479M 18
AMS5848E UNS S21800
Sol Ann 1950F +/-25/WQ ASTM A193 17 B8S Class 1C
EN 10204 Type 3.1 Document DFARS 252.225.7009 10/4/11
ASME SA-193-17 B8S Class 1C ASME SA-479 2017 Ed.
ASTM A262 15 Practice A/E QTC is a prolongation of bar
NACE MR0175-09, ISO 15156:09 NACE MR0103-10
ASTM F899 12b
1950F/ 30minutes/ Water Quench below 800F

----- MECHANICAL & OTHER TESTS -----
Hardness as shipped 207 HB
Hardness as shipped (93 HRC)
Grain size 3.0 Tensile strength, KSI (MPa) 101.0 (696)
Micro OK 0.2% Yield Strength, KSI (MPa) 57.3 (395)
Intergranular corrosion OK
Elongation % in 4D 64.1
Reduction of area % 75.2

----- CHEMICAL COMPOSITION -----
Carbon (C) .062 Manganese (Mn) 7.730
Phosphorus (P) .033 Sulphur (S) .001
Silicon (Si) 3.850 Chromium (Cr) 16.490
Nickel (Ni) 8.260 Cobalt (Co) .075
Copper (Cu) .210 Moly (Mo) .310
Nitrogen (N) .139 Columbium (Cb) .010
Titanium (Ti) .007 Aluminum (Al) .004
Tin (Sn) .005 Boron (B) .001
Tantalum (Ta) .005 Vanadium (V) .047
Tungsten (W) .010
Columbium/
Tantalum (Cb+Ta) .015
Iron (Fe) Balance
Melt Practice EAF
Refining Practice AOD
De-long Ferrite

ROLLED
ALLOYS

Receiving Inspection

By: U m
Date: 6/3/19

HEAT # 552961



TRACER # 0571078US

Knowingly & willfully falsifying or concealing a material act on this form, or making false, fictitious or fraudulent statements or representations herein could constitute a felony punishable under federal statutes. We hereby certify that the test results shown in this report are correct and accurate as contained in the records of the company and are in compliance with the specifications, codes, and standards listed above.

M.F. Marcanio, Quality Manager

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