

C 119360

PJSC DNIPROSPETSSTAL, YUZIINOYE SHOSSE 81, 69008 ZAPOROZHYE, UKRAINE

Contract No.: 20002
 TECHN PROTOCOL № 390-11 SPEC № 5037/P034083-ED
 DIN EN 10088-3-05, DIN EN 10277-08, AD2000-Merkblatt W2, AD 2000-Merkblatt W10, ASTM A182/A182M-10, ASME SA-182/SA-182M-10, ASTM A276-10, ASTM A314-08, ASTM A479/A479M-10, ASME SA-479/SA-479M-10, ASTM A484/A484M-10, AMS-QQ-S-763B-06, Cond. A, AMS 5648K-07, AMS 5653F-07, ASTM A193/A193M-10GR B8M, CL1, ASME SA-193/SA-193M-10 GR B8 CL 1, ASTM A320/A320M-08 GR B8M, CL 1, ASME SA-320/SA-320M-10 GR B8M, CL 1, NACE MR 0175-03, NACE MR 0103-10

Sheets: 5 Sheet: 2
 INSPECTION CERTIFICATE EN10204/3.1 Nr. 290138
 PLANT ORDER № 8014905037



GMS Certified

CUSTOMER
DSS INTERNATIONAL
 SA Switzerland

PRODUCT DESCRIPTION
 Bars and rods of corrosion-resistant (stainless) steel hot rolled, peeled on Landgraf line. Прутки из коррозионностойких (нержавеющих) сталей горячекатаные, обточенные на линии Ландграф.
STEEL MAKING PROCESS: EAF+AOB
ШОСОБ ВПЦЛАВКМ: Электродуговая печь+АКР
 Round 5,250in/133,35 mm L=5,310m/17,410ft L=5,060m/16,590ft
 Grade: 316/316L/1.4401/1.4404

QUANTITY: Bund Q-2606 1b/1182 kg (number of pcs) Bund Q-2540 1b/1152 kg
Delivery condition
 solution annealed : 1900° F(1040° C) water 30minutes
 термодобротка: закалка в воду

| ANALYSIS, % | C | Si | Mn | P | S | Cr | Ni | Mo | Al | Cu | V | W | Ti | Co | Nb | N ₂ | Sn | B |
|---------------|-------|--------|--------------|-------|---------------|-----------------|------------------|----------------|------|------|------|------|------|------|------|----------------|------|------|
| REQUIRED | <.030 | <.1,00 | 1.20 2.00 | <.040 | .015- .030 | 16.50- 18.00 | 10.00- -13.00 | 2.00- -2.50 | <.10 | <.40 | <.10 | <.20 | <.15 | <.40 | <.20 | <.10 | | |
| CAST № A01413 | .022 | .41 | 1.26 | .034 | .025 | 16,80 | 10.20 | 2.03 | .062 | .24 | .06 | .12 | .005 | .10 | .019 | .030 | .010 | .001 |

DIN EN 10002-1, ASTM A370-09

| MECHANICAL PROPERTIES | Yield Strength, (N/mm ²) R _{0.2} % R 1.0% | Tensile Strength, (N/mm ²) R _m | Elongation | | Reduction of area, Z % L | Brinell Hardness HB | Impact strength, KV, J | |
|-----------------------|---|--|----------------------------|---------------------------------------|-----------------------------|------------------------|------------------------|------------|
| | | | A ₅ % L Q | In 2 inches (50mm) or 4D, min, % L | | | T | Q |
| REQUIRED | 205 | 240 | 40 | 40 | 50 | 140-217 | 100 | |
| EFFECTIVE | 278 281 | 294 297 | 563 565 | 58 57 | - | 163 | 237 231 | 235 230 |

Mechanical properties tested in state of delivery

US - testing yes
 Results: ASME SA-388/SA-388M-10(ASIM A 388/A 388M-09)-FBH/8"; EN 10308 type 1a, class 3-OK

TECHNICAL REQUIREMENTS:
 Macrostructure – GOOD
 GRAIN SIZE : 5 to ASTM E 112-96(2004)
 Nonmetallic inclusions ASTM E 45-05 (Method A)
 A thin thick thin thick thin thick thin thick
 2.5 2.0 1.5 1.0 0.0 0.0 1.0 1.0
 ICC-ASTM A262-08 (practice E)-test: OK.
 Dimension/surface defects test: anti-mixing test – OK

Manufacturer: PJSC DNIPROSPETSSTAL
 Date: 12.11.14 Manager of quality assurance department - V. Kapateva
 Signed:
 Zaporozhye
 Made in Ukraine

MNS