

2200973
~~777~~
 1398

Pr.JSC DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, 69008 ZAPOROZHYE, UKRAINE

Contract No.: 20002
 TECHN.PROTOCOL № 390-11 SPEC.№ 9728/PO44311
 DIN EN 10088-3-05 DIN EN 10272-08 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-Q0-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 B8,CL1,NAACE MR 0175-03,NAACE MR 0103-10

Sheets: 8 **Sheet: 2**
INSPECTION CERTIFICATE EN10204/3.1 Nr. 336112
PLANT ORDER № 8014909728

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, обработанные на линии Ландграф.

STEEL MAKING PROCESS: EAF+AOD
СПОСОБ ВЫПУСКА: Электроплавочная печь+AOP
 Round 6.250m/158.75 mm L=18.459m/5.630m L=18.492m/5.640m
Grade: 316/316L/1.4401/1.4404

QUANTITY:
 (number of pcs)
1bund Q-2019 lb/916 kg
1bund Q-4048 lb/1836 kg

Delivery condition
 solution annealed : 1900°F(1040°C)water 30minutes
 термообработка: закалка в воду

| ANALYSIS, % | C | Si | Mn | P | S | Cr | Ni | Mo | Al | Cu | V | W | Ti | Co | Nb | N | 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 № A06221 | .018 | .38 | 1.35 | .040 | .024 | 16,77 | 10.20 | 2.07 | .068 | .32 | .05 | .06 | .068 | .13 | .01 | .026 | .011 | .0024 |

DIN EN 10002-1,ASTM A370-09

| MECHANICAL PROPERTIES | Yield Strength, (N/mm ²) R0.2% R 1.0% | Tensile Strength, (N/mm ²) Rm | Elongation | | Reducti on of area, Z, % | Brinell Hardness HB | Impact strength, KV, J | |
|-----------------------|---|---|------------|--------------------------------|--------------------------|---------------------|------------------------|------------|
| | | | A, % | In 2 inches (50mm) or 4D,mm, % | | | L | Q |
| REQUIRED | 205 | 515-690 | 40 | 40 | 50 | 140-223 | 100 | - |
| EFFECTIVE | 298 302 | 559 553 | 60 | 59 58 | 78 78 | 163 163 | 204 208 | 204 208 |

TECHNICAL REQUIREMENTS:

Macrostructure – GOOD
 GRAIN SIZE : 5 to ASTM E 112-96(2004)
 Nonmetallic inclusions ASTM E 45-05 (Method A)
 A B C D
 thin thick thin thick thin thick thin thick
 3.0 2.0 2.0 1.0 0.0 0.0 1.0 1.0 1.0
 ICC-ASTM A262-08 (practice F)-test: O.K.
 Dimension/surface defects test, anti-mixing test – OK
 We acknowledge that the delivered products conform to the requirements of the order
 Ratio of reduction-15:1:1

Mechanical properties tested in state of delivery

| | | |
|---|-----|--|
| US - testing | yes | Results: ASTM A388/A388M-FBH1/8";EN 10308 type Ia;class 3-OK |
| Radiation free; mercury free. No Weld or Weld repair. | | |

Manufacturer:Pr.JSC DNIPROSPETSSTAL
 Date: 23.07.18
assurance department - V. Kapaieva
 Signed:
 Zaporozhye
 Made in Ukraine.

MS