

# 96172 (15").



QMS Certified



**DNEPROSPETSSTAL, YUZHNOYE SHOSSE 81, ZAPOROZHYE 69008, UKRAINE**

C033931

Contract No.: 50005

TECHN.PROTOCOL № 210-06 SPEC.№1882/P023364-ED

ASTM A182/A182M-05; ASME SA-182/SA-182M-04; ASTM A276-04;

ASTM A479/A479M-04; ASTM SA-479/SA-479M-04; ASTM A484/A484M-05; AMS-QQ-S-763A-03

Cond.A; NACE MR 0175-2003; AMS 5648K-02; AMS 5653F-02; ASTM A193/A193M-04c GR B8M, CL1;

ASME SA-193/SA-193M-04GR B8M, CL1; NACE MR0103

EN10204/3.1

Sheets:5

Sheet: 5

QUALITY CERTIFICATE Nr.245760

PLANT ORDER № 8014901882

CUSTOMER  
„DSS INTERNATIONAL SA“  
Switzerland

**PRODUCT DESCRIPTION**

Bars and rods of corrosion-resistant (stainless) steel forged, peeled. Двутыки из коррозионноустойчивых (нержавеющих) сталей кованные, обточенные.

STEEL MAKING PROCESS: EAF+AOD

СПОСОБ ВЫПЛАВКИ: Электродуговая печь+AOP

Round 15.000in/381.00 mm L=4.70m/15.41ft

Grade: 316/F316/316L/F316L

**QUANTITY:**

(number of pcs) Bund Q-9568 lb/4340 kg

**Delivery condition**

solution annealed: 1900-2010°F (1040-1100°C)/water 26minutes  
термообработка: закалка в воду

| ANALYSES, %  | C     | Si    | Mn        | P     | S         | Cr          | Ni          | Mo        | Al   | Cu   | V    | W    | Ti   | Co   | Nb   | N <sub>2</sub> |  |  |
|--------------|-------|-------|-----------|-------|-----------|-------------|-------------|-----------|------|------|------|------|------|------|------|----------------|--|--|
| REQUIRED     | <.030 | <1,00 | 1.25-2.00 | <.040 | .020-.030 | 16.00-18.00 | 10.00-14.00 | 2.00-3.00 | <.10 | <.40 | <.10 | <.20 | <.15 | <.40 | <.20 | <.10           |  |  |
| HEAT № 96172 | .021  | .55   | 1.29      | .034  | .025      | 17.01       | 10.10       | 2.00      | .079 | .27  | .05  | .12  | .075 | .11  | .012 | .031           |  |  |

ASTM A370-08a

| MECHANICAL PROPERTIES | Yield Strength, Ksi(N/mm <sup>2</sup> )<br>Re (R <sub>e2</sub> ) | Tensile Strength, Rm,ksi (N/mm <sup>2</sup> ) | Elongation                                   |    | Reduction of area, Z, % | Brinell Hardness HB | Impact strength, KV, J |
|-----------------------|--|---|--|----|-------------------------|---------------------|------------------------|
|                       |  |   | In 2 inches (50mm) or 40, min, % (ASTM A370) |    |                         |                     |                        |
| REQUIRED              | 36(248)  | 75 (515)                                      | 45   | 50 | 140-223                 | 100                 |                        |
| EFFECTIVE             | 37.8(260)  | 81.9(563)                                     | 58   | 75 | 167                     | 190                 |                        |

Mechanical properties tested in state of delivery

US - testing

yes

Results: SEP 1921, 3/ Cc - O.K.

Radiation free; mercury free. No Weld or Weld repair.

**TECHNICAL REQUIREMENTS:**

Macrostructure – GOOD

GRAIN SIZE: 5 to ASTM E 112

Nonmetallic inclusions ASTM E 45 (Method A)

|      |       |      |       |      |       |      |       |
|------|-------|------|-------|------|-------|------|-------|
| A    |       | B    |       | C    |       | D    |       |
| thin | thick | thin | thick | thin | thick | thin | thick |
| 2.0  | 1.5   | 2.0  | 1.5   | 0    | 0     | 1.0  | 1.0   |

ICC-ASTM A262-02a(Method E)-test: O.K.

„Dimension/surface defects test, anti-mixing test – O.K.“

Ratio of reduction- 5.2:1

Manufacturer: JSC DNEPROSPETSSTAL

Date: 11.04.11 Signed:

V.Kapain

Zaporozhye

Made in Ukraine.

