



C256722

**PrJSC DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, 69008 ZAPOROZHYE, UKRAINE**

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1645

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|---|--|--|
|                          | <p>Contract No.: 20002<br/>TECHN.PROTOCOL № 390-11 SPEC.№4721/PO47340<br/>DIN EN 10088-3-05,DIN EN 10272-08,DIN EN 10222-5-00,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<br/>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;<b>NACE MR 0175-03;NACE MR 0103-10</b></p> | <p><b>Sheets:11</b> <b>Sheet: 6</b><br/><b>INSPECTION CERTIFICATE EN10204/3.1 Nr.351763</b><br/>PLANT ORDER № 8014904721</p>   |
| <br>QMS Certified        | <p><b>CUSTOMER</b><br/><b>DSS INTERNATIONAL</b><br/><b>SA Switzerland</b></p>  | <p><b>PRODUCT DESCRIPTION</b><br/>Bars and rods of corrosion-resistant (stainless) steel forged, peeled.Прутки из коррозионностойких (нержавеющих) сталей кованные, обточенные.<br/><b>STEEL MAKING PROCESS: EAF+AOD</b><br/><b>СПОСОБ ВЫПЛАВКИ:Электродуговая печь+АКР</b><br/>Round 15.000m/381.00 mm L=2.430m/7.967ft L=2.590m/8.492ft<br/><b>Grade: 316/316L/1.4401/1.4404</b></p> |
| <p><b>QUANTITY:</b> <b>1bund Q-4974 lb/2256 kg</b><br/>(number of pcs) <b>1bund Q-5287 lb/2398 kg</b></p> |  |  |
|   |  | <p><b>Delivery condition</b><br/>solution annealed :1922<sup>0</sup>F(1050<sup>0</sup>C)water 36minutes<br/>термообработка:закалка в воду</p>  |

|                  |       |       |           |       |           |             |             |           |      |      |      |      |      |      |      |      |      |       |
|------------------|-------|-------|-----------|-------|-----------|-------------|-------------|-----------|------|------|------|------|------|------|------|------|------|-------|
| 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<br>№ A07839 | .021  | .38   | 1.30      | .035  | .024      | 16.85       | 10.25       | 2.05      | .065 | .35  | .06  | .07  | .005 | .16  | .01  | .030 | .010 | .0023 |

DIN EN 10002-1,ASTM A370-09

| MECHANICAL PROPERTIES | Yield Strength, (N/mm <sup>2</sup> )<br>R0.2% R 1.0% |     | Tensile Strength, Rm, (N /mm <sup>2</sup> ) | Elongation              |                                     | Reduction of area, Z %<br>L | Brinell Hardness HB | Impact strength, KV, J |             |          |
|-----------------------|--|-----|---|-------------------------|-------------------------------------|-----------------------------|---------------------|------------------------|-------------|----------|
|                       | L  | Q   |   | A <sub>5</sub> %<br>L Q | In 2 inches (50mm) or 4D,min,%<br>L |                             |                     | L                      | Q           |          |
| REQUIRED              | 205  | 240 | 515-700                                     | 45                      | 35                                  | 40                          | 50                  | 140-217                | 100         | 60       |
| EFFECTIVE             | 284  | 310 | 590   | 60                      | 55                                  | 59                          | 75                  | 174                    | 201 201 201 | 66 66 66 |


**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  
2.0 2.0 2.0 1.0 0.0 0.0 1.0 1.0  
ICC-ASTM A262-08 (practice E)-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-6.13:1

Mechanical properties tested in state of delivery

US - testing      yes      Results: ASTM A388/A388M-FBH1/5";EN 10228-4 type 1a;class 3:OK

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

Date: 29.11.19      **Manager of quality assurance**  
**department - V. Kapaieva**      Signed:  
Zaporozhye  
Melted and Produced in Ukraine.  
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