



C299061

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

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|  | Contract No.: 20002<br>TECHN.PROTOCOL № 390-11 SPEC.№2608/PO51243<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; NACE MR 0175-03; NACE MR 0103-10 | <b>INSPECTION CERTIFICATE EN10204/3.1 Nr.370941</b><br>PLANT ORDER № 8014902608 |
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|  | <b>CUSTOMER</b><br><b>DSS INTERNATIONAL</b><br><b>SA Switzerland</b> | <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 ВЫПЛИВКИ: Электродуговая печь+АКР</b><br>Round 15.000in/381.00 mm L=8.426ft/2.570m L=8.443 ft/2.575m<br><b>Grade: 316/316L/1.4401/1.4404</b> | QUANTITY: <b>1bund Q-5291 lb/2400 kg</b><br>(number of pcs) <b>1bund Q-5317 lb/2412 kg</b><br><br>Delivery condition<br>solution annealed :1940 <sup>0</sup> F(1060 <sup>0</sup> C)water 34minutes<br>термообработка:закалка в воду |
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| 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 № A09969 | .024  | .44   | 1.37      | .040  | .027      | 16.79       | 10.25       | 2.06      | .074 | .22  | .06  | .05  | .005 | .10  | .01  | .029 | .0076 | .0023 |

| DIN EN 10002-1, ASTM A370-09 |  |     |  |                                       |    |                             |                     |                        |             | TECHNICAL REQUIREMENTS: |  |  |   |   |   |      |       |      |       |
|------------------------------|--|-----|--|---------------------------------------|----|-----------------------------|---------------------|------------------------|-------------|-------------------------|--|--|---|---|---|------|-------|------|-------|
| 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  | Macrostructure: GOOD<br>GRAIN SIZE: 5 to ASTM E 112-96(2004)<br>Nonmetallic inclusions ASTM E 45-05 (Method A) |   |   |   |      |       |      |       |
|                              | A5 %<br>L  | Q   |  | In 2 inches (50mm) or 4D, min, %<br>L | L  |                             |                     | L                      | L           |                         |  | A  | B | C | D | thin | thick | thin | thick |
| REQUIRED                     | 205  | 240 | 515-690                                    | 45                                    | 35 | 40                          | 50                  | 140-217                | 100         | 60                      | thin thick thin thick thin thick thin thick<br>2.0 2.0 2.0 1.0 0.0 0.0 1.0 1.0   |  |   |   |   |      |       |      |       |
| EFFECTIVE                    | 289  | 323 | 554  | 61                                    | 54 | 60                          | 79                  | 163                    | 213 213 213 | 61 61 61                | ICC-ASTM A262-08 (practice E)-test: O.K.<br>Dimension/surface defects test, anti-mixing test – OK<br>We acknowledge that the delivered products conform to the requirements of the order/Подтверждаем, что поставленная продукция соответствует требованиям заказа<br>Ratio of reduction-6.4:1 |  |   |   |   |      |       |      |       |

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| US - testing | yes | Results: ASTM A388/A388M-FBH1/5"; EN 10228-4 type 1a; class 3:OK | Date: 18.06.2021 Manager of quality assurance department<br>- V. Kapaieva Signed:<br>Zaporozhye<br>Melted and Produced in Ukraine.<br>MELTED and MANUFACTURED PrJSC " Dniprospeisstal"<br>Phone number +380612834255<br>e-mail: info@dss.com.ua<br>http://www.dss-ua.com |
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Radiation free; mercury free. No Weld or Weld repair.