



C229099


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

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|---|---|--|--|--|--|--|--|--|--|--|---|--|
|  | Contract No.: 20002<br>TECHN.PROTOCOL № 390-11 SPEC.№0111/PO44618<br>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-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 B8, CL1; NACE MR 0175-03; NACE MR 0103-10 |  |  |  |  |  |  |  |  |  | Sheets:4                      Sheet: 1<br><b>INSPECTION CERTIFICATE EN10204/3.1 Nr.337468</b><br>PLANT ORDER № 8014900111 |  |
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|  <p>GMS Certified</p> | CUSTOMER<br><b>DSS INTERNATIONAL</b><br>SA Switzerland | <b>PRODUCT DESCRIPTION</b><br>Bars and rods of corrosion-resistant (stainless) steel hot rolled, peeled on Landgraf line. Прутки из коррозионностойких (нержавеющих) сталей горячекатаные, обточенные на линии Ландграф.<br><b>STEEL MAKING PROCESS: EAF+AOD</b><br><b>СПОСОБ ВЫПЛАВКИ: Электродуговая печь+АКР</b><br>Round 6.250in/158.75 mm L=5.640m/18.492ft<br><b>Grade: 316/316L/1.4401/1.4404</b> | QUANTITY:<br>(number of pcs) <b>1bund Q-4048 lb/1836 kg</b>   |  |
|  |  |  | Delivery condition<br>solution annealed :1900°F(1040°C)water 30minutes<br>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 № A06341 | .020  | .43   | 1.29      | .040  | .027      | 16,87       | 10.20       | 2.03      | .064 | .29  | .05  | .06  | .005 | .12  | .01  | .026 | .0108 | .0025 |

|                              |  |            |  |              |          |                             |                     |                            |        |   |  |  |  |  |  |  |  |  |  |
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| DIN EN 10002-1, ASTM A370-09 |  |            |  |              |          |                             |                     |                            |        | <b>TECHNICAL REQUIREMENTS:</b><br>Macrostructure – GOOD<br>GRAIN SIZE : 5 to ASTM E 112-96(2004)<br>Nonmetallic inclusions ASTM E 45-05 (Method A)<br>A                      B                      C                      D<br>thin thick thin thick thin thick thin thick<br>2.5 1.5 1.5 1.0 0.0 0.0 1.0 1.0<br>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<br>Ratio of reduction-15.1:1 |  |  |  |  |  |  |  |  |  |
| 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          |  | L            | Q        |                             |                     | L                          | Q      |   |  |  |  |  |  |  |  |  |  |
| REQUIRED                     | 205  | 240        | 515-690                                    | 45 -         | 40       | 50                          | 140-217             | 100                        | -      |   |  |  |  |  |  |  |  |  |  |
| EFFECTIVE                    | 280<br>282   | 317<br>329 | 563<br>567                                 | 62 -<br>61 - | 57<br>57 | 77<br>77                    | 167<br>167          | 230 230 230<br>226 226 226 | -<br>- |   |  |  |  |  |  |  |  |  |  |

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| Mechanical properties tested in state of delivery     |  |  | US - testing                      yes                      Results: ASTM A388/A388M-FBH1/8"; EN 10308 type 1a; class 3:OK |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |
| Radiation free; mercury free. No Weld or Weld repair. |  |  |   |  |  |  |  |  |  |  |  |  | Manufacturer: PrJSC DNIPROSPETSSTAL<br>Date: 31.08.18                      Manager of quality assurance department - V. Kapaieva<br>Signed: <br>Zaporozhye<br>Made in Ukraine. |  |  |  |  |  |  |

ANS