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SN 6436-01


C212982

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

|   |  |  |   |
|---|--|--|---|
|  | Contract No.: 20002<br>TECHN.PROTOCOL № 390-11 SPEC.№8367/PO43227<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-10 GR 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: 6<br>Sheet: 4<br>INSPECTION CERTIFICATE EN10204/3.1 Nr.332059<br>PLANT ORDER № 8014908367   |
|   |   | CUSTOMER<br><b>DSS INTERNATIONAL</b><br>SA Switzerland                                     | <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 12.000in/304.80 mm L=12.459 ft/3.800m L=12.033 ft/3.670m<br><b>Grade: 316/316L/1.4401/1.4404</b> |
|   |  | QUANTITY: <b>1bund Q-4987 lb/2262 kg</b><br>(number of pcs) <b>1bund Q-4788 lb/2172 kg</b> | Delivery condition<br>solution annealed :1976° F(1080° 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<br>№ A05803 | .025  | .42   | 1.40      | .038  | .022      | 16,98       | 10.39       | 2.09      | .066 | .27  | .05  | .06  | .006 | .09  | .023 | .030 | .0088 | .0022 |

| 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 |          | 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>3.0 2.0 2.0 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/Подтверждаем, что поставленная продукция соответствует требованиям заказа |  |  |  |  |  |  |  |  |  |
|                              | REQUIRED   | 205 |  | 240        | 45 35 |                              |                     | 40                     | 50       |  |  |  |  |  |  |  |  |  |  |
| EFFECTIVE                    | 280  | 316 | 564  | 60 52      | 60    | 77                           | 167                 | 219 219 219            | 61 61 61 |  |  |  |  |  |  |  |  |  |  |

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| Mechanical properties tested in state of delivery     |     |  | Manufacturer: PrJSC DNIPROSPETSSTAL<br>Date: 30.03.18<br>Manager of quality assurance department - V. Kapaieva<br>Signed: <br>Zaporozhye<br>Made in Ukraine. |  |  |  |  |  |  |  |  |  |
| 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. |     |  |   |  |  |  |  |  |  |  |  |  |