

C252862

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

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|  | Contract No.: 20002<br>TECHN.PROTOCOL № 390-11 SPEC.№3746/PO46707<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; <b>NACE MR 0175-03; NACE MR 0103-10</b> | Sheets:4                      Sheet:3<br><b>INSPECTION CERTIFICATE EN10204/3.1 Nr.349346</b><br>PLANT ORDER № 8014903746 |
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|  | <b>CUSTOMER</b><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 15.000in/381.00 mm L=6.393 ft/1.950m<br><b>Grade: 316/316L/1.4401/1.4404</b> | QUANTITY:<br>(number of pcs) <b>1bund Q-3999 lb/1814 kg</b><br><br>Delivery condition<br>solution annealed : 1922 <sup>o</sup> F(1050 <sup>o</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<br><b>№ A07578</b> | .019  | .39   | 1.30      | .036  | .022      | 16.84       | 10.26       | 2.08      | .051 | .33  | .05  | .06  | .005 | .11  | .01  | .032 | .009 | .0022 |

| DIN EN 10002-1, ASTM A370-09 |  |      |  |                       |       |                             |                     |                        |             | TECHNICAL REQUIREMENTS:<br>Macrostructure – GOOD<br>GRAIN SIZE : 5 to ASTM E 112-96(2004)<br>Nonmetallic inclusions ASTM E 45-05 (Method A)<br><table style="width:100%; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>thin</td><td>thick</td><td>thin</td><td>thick</td><td>thin</td><td>thick</td><td>thin</td><td>thick</td><td>thin</td><td>thick</td> </tr> <tr> <td>2.5</td><td>2.0</td><td>2.0</td><td>2.0</td><td>0.0</td><td>0.0</td><td>1.0</td><td>1.0</td><td></td><td></td> </tr> </table> 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-6.13:1 |  |  |  |  |  |  |  |  |  | A | B | C | D |  |  |  |  |  |  | thin | thick | thin | thick | thin | thick | thin | thick | thin | thick | 2.5 | 2.0 | 2.0 | 2.0 | 0.0 | 0.0 | 1.0 | 1.0 |  |  |
|------------------------------|--|------|--|-----------------------|-------|-----------------------------|---------------------|------------------------|-------------|--|--|--|--|--|--|--|--|--|--|---|---|---|---|--|--|--|--|--|--|------|-------|------|-------|------|-------|------|-------|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| A                            | B  | C    | D  |                       |       |                             |                     |                        |             |  |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |
| thin                         | thick  | thin | thick                                      | thin                  | thick | thin                        | thick               | thin                   | thick       |  |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |
| 2.5                          | 2.0  | 2.0  | 2.0  | 0.0                   | 0.0   | 1.0                         | 1.0                 |                        |             |  |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |
| 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 |             |  |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |
|                              |  |      |  | A <sub>5</sub> %<br>L | Q     |                             |                     | L                      | Q           |  |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |
| REQUIRED                     | 205  | 240  | 515-690                                    | 45                    | 35    | 40                          | 50                  | 140-217                | 100         | 60   |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |
| EFFECTIVE                    | 278  | 309  | 559  | 59                    | 52    | 58                          | 73                  | 163                    | 199 199 199 | 64 64 64   |  |  |  |  |  |  |  |  |  |   |   |   |   |  |  |  |  |  |  |      |       |      |       |      |       |      |       |      |       |     |     |     |     |     |     |     |     |  |  |

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| US - testing  | yes | Results: ASTM A388/A388M-FBH1/5"; EN 10228-4 type 1a; class 3:OK | Date: 13.09.19 <b>Manager of quality assurance</b><br><b>department - V. Kapaieva</b> Signed:<br>Zaporozhye<br>Melted and Produced in Ukraine.<br>MELTED and MANUFACTURED PrJSC<br>" Dniprospetsstal"<br>Phone number +380612834255<br>e-mail: <a href="mailto:info@dss.com.ua">info@dss.com.ua</a><br><a href="http://www.dss-ua.com">http://www.dss-ua.com</a> |
| Radiation free; mercury free. No Weld or Weld repair. |     |  |  |

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