

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

**Contract No.:** 20002  
**TECHN.PROTOCOL №** 390-11 SPEC.№0111/PO44618  
 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-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: 4** **Sheet: 1**  
**INSPECTION CERTIFICATE EN10204/3.1 Nr.337468**  
 PLANT ORDER № 8014900111



**CUSTOMER**  
**DSS INTERNATIONAL**  
 SA Switzerland

**PRODUCT DESCRIPTION**  
 Bars and rods of corrosion-resistant (stainless) steel hot rolled, peeled on Landgraf line. Прутки из коррозионностойких (нержавеющих) сталей горячекатаные, обточенные на линии Ландграф.  
**STEEL MAKING PROCESS:** EAF+AOD  
**СПОСОБ ВЫПЛАВКИ:** Электродуговая печь+АКР  
 Round 6.250in/158.75 mm L=5.640m/18.492ft  
**Grade: 316/316L/1.4401/1.4404**

**QUANTITY:**  
 (number of pcs) **1bund Q-4048 lb/1836 kg**

**Delivery condition**  
 solution annealed :1900° F(1040°C)water 30minutes  
 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 |

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          |   | In 2 inches (50mm) or 4D,min,%<br>L | L        |                             |                     | 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 | - |

**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 |
| 2.5 1.5    | 1.5 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-15.1:1

Mechanical properties tested in state of delivery

US - testing      yes      Results: ASTM A388/A388M-FBH1/8"; EN 10308 type 1a; class 3:OK

Manufacturer: PrJSC DNIPROSPETSSTAL  
 Date: 31.08.18 **Manager of quality assurance department - V. Kapaieva**  
 Signed:   
 Zaporozhye  
 Made in Ukraine.

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

4" NPS UPSTREAME P.O. # 6059  
 Part # 04-FMX01-DEFSCH 3  
 FLANGE  
 Desc: 4" Default Schedule (80), ANSI RF, 316 SS/cs  
 Static Mixer