C245828

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

Contract No.: 20002
TECHN.PROTOCOL № 390-11 SPEC.№3294/PO46349
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 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

**INSPECTION CERTIFICATE** EN10204/3.1 **Nr.346595**
PLANT ORDER № 8014903294

QMS Certified

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

**PRODUCT DESCRIPTION**
Bars and rods of corrosion-resistant (stainless) steel forged, peeled.Прутки из коррозионностойких (нержавеющих) сталей кованые, обточенные.
**STEEL MAKING PROCESS**: EAF+AOD
**СПОСОБ ВЫПЛАВКИ**:Электродуговая печь+АКР
Round 11.000in/279.40 mm L=13.803 ft/4.210m L=14.951 ft/4.560m
**Grade: 316/316L/1.4401/1.4404**

QUANTITY: **1bund Q-4656 lb/2112 kg**
(number of pcs) **1bund Q-5035 lb/2284 kg**

Delivery condition
solution annealed :1904$^0$ F(1040$^0$C)water 18minutes
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 № A07342 | .020 | .53 | 1.36 | .040 | .026 | 16,75 | 10.25 | 2.10 | .08 | .31 | .05 | .06 | .005 | .10 | .011 | .033 | .010 | .0024 |

DIN EN 10002-1,ASTM A370-09

| MECHANICAL PROPERTIES | Yield Strength, (N/mm²) R0.2% R 1.0% | | Tensile Strength, Rm, (N /mm²) | Elongation A5 % L Q | Elongation In 2 inches (50mm) or 4D,min,% L | Reduction of area, Z % L | Brinell Hardness HB | Impact strength, KV, J L | Impact strength, KV, J Q |
|---|---|---|---|---|---|---|---|---|---|
| REQUIRED | 205 | 240 | 515-690 | 45 35 | 40 | 50 | 140-217 | 100 | 60 |
| EFFECTIVE | 294 | 318 | 570 | 60 55 | 59 | 79 | 167 | 207 207 207 | 63 63 63 |

Mechanical properties tested in state of delivery

| 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.

TECHNICAL REQUIREMENTS:
Macrostructure – GOOD
GRAIN SIZE : 6 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 | 2.0 | 2.0 | 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/Подтверждаем, что поставленная продукция соответствует требованиям заказа
Ratio of reduction-7.4:1

Manufacturer:PrJSC DNIPROSPETSSTAL
Date: 24.06.18 **Manager of quality assurance department** - V. Kapaieva
Signed:
Zaporozhye
Made in Ukraine.

AVS