

99675 (18.75")

200

PJSC DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, 69008 ZAPOROZHYE, UKRAINE

Contract No.: 50005
 TECHN. PROTOCOL № 390-11 SPFC. № 1144/P030989-ED
 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, CL.1; 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, CL.1; NACE MR 0175-03; NACE MR 0103-10

SHEETS: 6
 QUALITY CERTIFICATE EN10204/3.1 Nr.270345
 PLANT ORDER № 8014901144

QUANTITY:
 (number of pcs) 1bund Q-9616 lb/4362 kg

Delivery condition
 solution annealed : 1904°F (1040°C) water 19minutes
 термообработка: закалка в воду

PRODUCT DESCRIPTION
 Bars and rods of corrosion-resistant (stainless) steel forged, peeled. Прутки из коррозионно-стойких (нержавеющих) сталей кованы, обточенные.

CUSTOMER
 DSS INTERNATIONAL
 SA Switzerland

STEEL MAKING PROCESS: EAF+AOD
СПОСОБ ВЫПЛАВКИ: Электродуговая печь+AOP
 Round 18.750in/476.25 mm L=2.990m/9.803ft
 Grade: 316/316L/1.4401/1.4404

| ANALYSIS, % | C | Si | Mn | P | S | Cr | Ni | Mo | Al | Cu | V | W | Ti | Co | Nb | N ₂ | 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 № 99675 | .022 | .32 | 1.30 | .038 | .022 | 16.71 | 10.28 | 2.08 | .063 | .30 | .05 | .08 | .011 | .10 | .01 | .031 | .011 | .001 |

MECHANICAL PROPERTIES

Yield Strength (N/mm²) 0.2% R 1.0%: 205, 240, 270, 274, 307, 312

Tensile Strength (N/mm²): 515-690, 584, 579

Elongation (In 2 inches (50mm) or 4D, min, %): 40, 58, 58

Reduction of area, Z, %: 50, 75, 75

Brinell Hardness HB: 140-223, 170, 170

Impact strength, KV, J: L 100, 262 247 262; Q 60, 61 61 61

TECHNICAL REQUIREMENTS:
 Macrostructure - GOOD
 GRAIN SIZE: 5 to ASTM E 112-96(2004)
 Nonmetallic inclusions ASTM E 45-05 (Method A)
 thin thick thin thick thin thick thin thick
 3.0 2.0 3.0 2.0 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

US - testing yes

Results: ASME SA-388/SA-388M-10 (ASTM A 388/A 388M-09)-PBH 1/5; EN 10228-4 type I; class 3.0K

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

Manufacturer: PJSC DNIPROSPETSSTAL
 Date: 12.09.13
 assurance department - V. Kapateva
 Signed:

Zaporozhye
 Made in Ukraine.