

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



Contract No.: 20002  
 TECHN.PROTOCOL № 390-11 SPEC.№7660/P006556  
 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, C1.1: ASME SA-193/SA-193M-10 GR B8.C1.1: ASTM A320/A320M-08 GR B8M, C1.1: ASME SA-320/SA-320M-10 GR B8.C1.1, NACE MR 0175-03, NACE MR 0103-10

**Sheets:9 Sheet 2**  
**INSPECTION CERTIFICATE EN10204/3.1 Nr.331617**  
 PLANT ORDER № 8033907660



QMS Certified

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

**PRODUCT DESCRIPTION**

Bars and rods of corrosion-resistant (stainless) steel forged, peeled. Прутки из коррозионностойких (нержавеющих) сталей кованные, обточенные.  
**STEEL MAKING PROCESS: EAF+AOD**  
**СПОСОБ ВЫПЛАВКИ:** Электродуговая печь+АКР  
 Round 12.000in/304.80 mm L=3.860m/12.656ft L=3.260m/10.689ft  
**Grade: 316/316L/1.4401/1.4404**

**QUANTITY:** 1bund Q-5022 lb/2278 kg  
 (number of pcs) 1bund Q-4277 lb/1940 kg

**Delivery condition**  
 solution annealed :1922° F(1050° 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-.050	16.50-18.00	10.00-13.00	2.00-2.50	<10	<40	<10	<20	<15	<40	<20	<10		
CAST № A05579	.019	.48	1.30	.037	.022	17.13	10.27	2.07	.065	.38	.07	.04	.006	.16	.025	.030	.0094	.0022

DIN EN 10002-1, ASTM A370-09

MECHANICAL PROPERTIES	Yield Strength, (N · mm <sup>2</sup> ) R0.2% R 1.0%		Tensile Strength, Rm, (N · mm <sup>2</sup> )	Elongation		Reducti on of arca, Z, %	Brinell Hardness HB	Impact strength, KJ, J		
	A5	A10		A5	A10			L	Q	
REQUIRED	205	240	515-700	45	35	40	50	140-223	100	60
EFFECTIVE	271	311	568	59	48	58	79	167	198 198 198	78 78 78

**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	thin	thin	thin
2.5	2.0	2.0	1.5
0.0	0.0	0.0	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

Mechanical properties tested in state of delivery

US - testing	yes	Results: ASTM A388/A388M-FBI II/5"; EN 10228-4 type 1a; class 3:OK
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Radiation free; mercury free. No Weld or Weld repair.

Manufacturer: PrJSC DNIPROSPETSSTAL  
 Date: 20.03.18 Manager of quality assurance department - V. Kapaieva  
 Signed:  
 Zaporozhye  
 Made in Ukraine.