

C234489  
1490

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

Contract No.: 20002  
 TECHN.PROTOCOL № 390-11 SPEC.№0549/PO44837  
 DIN EN 10088-3-05, DIN EN 10272-08, DIN EN 10222-5-00, 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-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**

**Sheets:4 Sheet: 3**  
**INSPECTION CERTIFICATE EN10204/3.1 Nr.341104**  
 PLANT ORDER № 8014900549

  
**CUSTOMER**  
**DSS INTERNATIONAL**  
**SA Switzerland**  
 QMS Certified

**PRODUCT DESCRIPTION**  
 Bars and rods of corrosion-resistant (stainless) steel forged, peeled. Прутки из коррозионноустойчивых (нержавеющих) сталей кованные, обточенные.  
**STEEL MAKING PROCESS: EAF+AOD**  
**СПОСОБ ВЫПЛАВКИ: Электродуговая печь+АКР**  
 Round 8.500in/215.90 mm L=15.557 ft/4.745m L=17.000 ft/5.185m L=15.131 ft/4.615m  
**Grade: 316/316L/1.4401/1.4404**

**QUANTITY:**  
 (number of pcs) **1bund Q-3170 lb/1438 kg**  
**1bund Q-3461 lb/1570 kg**  
**1bund Q-3082 lb/1398 kg**

Delivery condition  
 solution annealed :1976° F(1080°C)water 20minutes  
 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 <b>№ A06748</b>	.022	.39	1.29	.040	.026	17.08	10.33	2.09	.068	.33	.05	.07	.008	.11	.01	.021	.011	.0021


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		Reduction of area, Z, % L	Brinell Hardness HB	Impact strength, KV, J		
	L	Q		In 2 inches (50mm) or 4D, min, % L	L			L	Q	
REQUIRED	205	240	515-690	45	35	40	50	140-223	100	60
EFFECTIVE	291 293	309 313	571 571	60	59	55 54	79 79	167 167	202 200 200 200 202 202	62 62 62 63 63 63

**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  
 2.0 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-7.2:1

Mechanical properties tested in state of delivery

US - testing      yes      Results: ASTM A388/A388M)-FBH1/8"; EN 10228-4 type 1a; class 3:OK

Manufacturer: PrJSC DNIPROSPETSSTAL  
 Date: 26.12.18      **Manager of quality assurance department - V. Kapaieva**  
 Signed:   
 Zaporozhye  
 Made in Ukraine.

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

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