

С220973

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

Contract No.: 20002

TECHN. PROTOCOL № 390-11 SPEC. № 9728/PO44311  
 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-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 0103-10

Sheets: 8 Sheet: 2  
 INSPECTION CERTIFICATE ENI 0204/3.1 Nr. 336112  
 PLANT ORDER № 8014909728

**PRODUCT DESCRIPTION**

Bars and rods of corrosion-resistant (stainless) steel hot rolled, peeled on Landgraf line. Прутки из коррозионностойких (нержавеющих) сталей горячекатаные, обработанные на линии Ландграф.

QUANTITY:  
 (number of pcs)

1bund Q-2019 1b/916 kg  
 1bund Q-4048 1b/1836 kg

**STEEL MAKING PROCESS: EAF+AOD**

СПОСОБ ВЫПУСКА: Электроплавочная печь - АКР  
 Round 6.250in/158.75 mm L=18.459m/5.630m L=18.492m/5.640m  
 Grade: 316/316L/1.4401/1.4404

Delivery condition  
 solution annealed: 1900°F (1040°C) water 30minutes  
 термодобработка: закалка в воду



GMS Certified

**ANALYSIS, %**

	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	V	W	Ti	Co	Nb	N	Sn	B
REQUIRED	<.030	<.100	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 № A06221	.018	.38	1.35	.040	.024	16.77	10.20	2.07	.068	.32	.05	.06	.068	.13	.01	.026	.011	.0024

**DIN EN 10002-1, ASTM A370-09**

MECHANICAL PROPERTIES	Yield Strength, (N/mm <sup>2</sup> ) R0.2% & R1.0%	Tensile Strength, Rm, (N/mm <sup>2</sup> )	Elongation		Reducti on of area, Z %	Impact strength, KV, J
			A1, %	In 2 inches (50mm) or 4D, min, %		
REQUIRED	205	515-690	40	40	50	L Q
EFFECTIVE	298	559	60	59	78	100
	302	553	59	58	78	204 204 204 208 208 208

Mechanical properties tested in state of delivery

**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  
 3.0 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  
 Ratio of reduction-15.1:1

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

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

Manufacturer: PrJSC DNIPROSPETSSTAL  
 Date: 23.07.18      Manager of quality assurance department - V. Kapaieva  
 Signed:

Zaporozhye  
 Made in Ukraine.

INS.