

C+B  
 PO 76002 → 5453+54  
 5462  
 WO ~~1522+123~~  
 CPA - NPS 10/40+10/80 5400116658

96279.



**DNEPROSPETSSTAL, YUZHNOYE SHOSSE 81, ZAPOROZHYE 69008, UKRAINE**

Contract No.: 50005

TECHN. PROTOCOL № 210-11-SPEC. № 2546/PO1248  
 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-10 GR B8M, CL 1; ASME SA-193/SA-193M-10 GR B8M, CL 1; ASTM A320/A320M-08 GR B8M, CL 1; ASME SA-320/SA-320M-10 GR B8M, CL 1; NACE MR 0175-03; NACE MR 0103-10

Sheets: 7 Sheet: 6  
 EN 10204/3.1  
 QUALITY CERTIFICATE Nr. 246556  
 PLANT ORDER № 8015202546

CUSTOMER  
 „DSS INTERNATIONAL SA“  
 Switzerland

PRODUCT DESCRIPTION  
 Bars and rods of corrosion-resistant (stainless) steel forged, peeled.  
 Прутки из коррозионностойких (нержавеющих) сталей кованые, обработанные.  
 STEEL MAKING PROCESS: EAF+AOD  
 СПОСОБ ВЫПЛАВКИ: Электродуговая печь+AKP  
 Round 13.000in/330.20 mm L=3.40m/11.15 ft  
 Grade: 316/F316/316L/F316L

QUANTITY:  
 (number of pcs) 1bund Q-5251 H/2382 kg  
 Delivery condition  
 solution annealed : 1900-2010° F (1040-1100° C)/water  
 термообработка: закалка в воду

ANALYSES, %	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	V	W	Ti	Co	Nb	N <sub>2</sub>
REQUIRED	<.030	<1.00	1.25-2.00	<.040	.020-.030	16.00-18.00	10.00-14.00	2.00-3.00	<.10	<.40	<.10	<.20	<.15	<.40	<.20	<.10
HEAT № 96279	.022	.51	1.37	.032	.026	17.17	10.10	2.02	.068	.20	.04	.16	.095	.06	.019	.028

MECHANICAL PROPERTIES	Yield Strength, Ksi(N/mm <sup>2</sup> ) Re (R <sub>0.2</sub> )	Tensile Strength, Rm,ksi (N/mm <sup>2</sup> )	Elongation A <sub>5</sub> %	Reduction of area, Z %	Brinell Hardness HB	Impact strength, KV, J
REQUIRED	30(205)	75 (515)	45	50	140-223	100
EFFECTIVE	39.3(270)	82.1(564)	59	73	163	234

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
2.0	1.0	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 – O.K.“  
 Ratio of reduction- 4.15:1

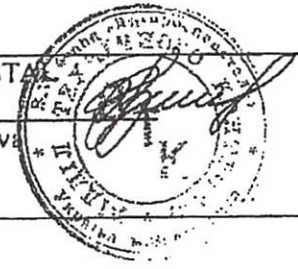
Mechanical properties tested in state of delivery

US - testing      yes      Results: SEP 1921, group 3/class Cc - OK

Manufacturer: JSC DNEPROSPETSSTAL  
 Date: 29.04.11 Signed:   
 V. Kapaieva  
 Zaporozhyc  
 Made in Ukraine.

Radiation free; mercury free. No Weld or Weld repair. This report is a copy of original mill certificate and verifies that the product meets the requirements as originally ordered by Energy Steel Products.

DATE: 12/10 VERIFIED BY:



*Bob*  
*12/10*