



M2M  
 97091

**PJSC DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, 69008 ZAPOROZHYYE, UKRAINE**

 Contract No.: 50005  
 TECHN.PROTOCOL № 210-11 SPEC.№ 4268/20879  
 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,CL1 ;ASME SA-193/SA-193M-10GR B8M,CL1;ASTM A320/A320M-08OR B8M,CL 1;ASME SA-320/SA-320M-10 GR B8M,CL 1;NACE MR 0175-03;NACE MR 0103-10

Sheets:7 Sheet: 2  
**QUALITY CERTIFICATE EN10204/3.1 Nr.256233**  
 PLANT ORDER № 8041304268

 **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 20.000in/508.00 mm L=2.570m/8.426ft  
 Grade: 316/F316/316L/F316L

**QUANTITY:**  
 (number of pcs) 1bund Q-9321 lb/4228 kg

**Delivery condition**  
 solution annealed :1900-2010° F(1040-1100° C)/water  
 термообработка:закалка в воду

ANALYSIS, %	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		
CAST № 97091	.020	.41	1.36	.036	.020	16,75	10.20	2.04	.057	.28	.05	.10	.094	.08	.018	.0290		


MECHANICAL PROPERTIES	Yield Strength, Ksi(N/mm <sup>2</sup> ) Re (R <sub>m</sub> )	Tensile Strength, Rm,ksi (N/mm <sup>2</sup> )	Elongation ASTM A370-09 In2inches (50mm)	Reduction of area, Z %	Brinell Hardness HB	Impact strength, KV, J	TECHNICAL REQUIREMENTS:			
							Macrostructure – GOOD GRAIN SIZE : 5 to ASTM E 112-96(2004) Nonmetallic inclusions ASTM E 45-05 (Method A)			
REQUIRED	30(205)	75 (515)	45	50	140-223	100	A thin 2.0 B thick 1.0 C thin 2.0 D thick 1.0			
EFFECTIVE	37.6(258)	78.5(539)	57	75	159	165	ICC-ASTM A262-08 (practice E)-test: O.K. Dimension/surface defects test, anti-mixing test – OK			

Mechanical properties tested in state of delivery

US - testing      yes      Results: SEP 1921,group 3/class Cc - O.K.

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 Buyer, Steel Products.

Manufacturer: PJSC DNIPROSPETSSTAL  
 Date: 17.12.11 Manager of quality assurance department - V. Kapaieva      Signed:   
 Zaporozhye  
 Made in Ukraine.

3/25/12  
 VERIFIED BY: 