




PO 2498

CO95264

99776

PJSC DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, 69008 ZAPOROZHYE, UKRAINE																																																																											
	Contract No.: 50005 TECHN.PROTOCOL № 390-11 SPEC.№1144/P030989-ED 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-10 GR B8M, CL1; ASME SA-193/SA-193M-10 GR B8, CL1; ASTM A320/A320M-08 GR B8M, CL1; ASME SA-320/SA-320M-10 GR B8, CL1; NACE MR 0175-03; NACE MR 0103-10											Sheets: 7      Sheet: 7 <b>QUALITY CERTIFICATE EN10204/3.1 Nr. 277141</b> PLANT ORDER № 8014901144																																																															
	 GMS Certified	<b>CUSTOMER</b> <b>DSS INTERNATIONAL</b> SA Switzerland			<b>PRODUCT DESCRIPTION</b> Bars and rods of corrosion-resistant (stainless) steel forged, peeled. Прутки из коррозионноустойчивых (нержавеющих) сталей кованые, обточенные. <b>STEEL MAKING PROCESS: EAF+AOD</b> <b>СПОСОБ ВЫПЛАВКИ: Электродуговая печь+АКР</b> Round 15.000in/381.00 mm L=4.430m/14.525ft Grade: 316/316L/1.4401/1.4404								<b>QUANTITY:</b> (number of pcs)      1bund Q-9048 lb/4104 kg  <b>Delivery condition</b> solution annealed : 1976° F (1080°C) water 34 minutes термообработка: закалка в воду																																																														
<b>ANALYSIS, %</b> <table border="1"> <thead> <tr> <th></th> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Ni</th> <th>Mo</th> <th>Al</th> <th>Cu</th> <th>V</th> <th>W</th> <th>Ti</th> <th>Co</th> <th>Nb</th> <th>N<sub>2</sub></th> <th>Su</th> <th>B</th> </tr> </thead> <tbody> <tr> <td><b>REQUIRED</b></td> <td>&lt;.030</td> <td>&lt;1.00</td> <td>1.20-2.00</td> <td>&lt;.040</td> <td>.015-.030</td> <td>16.50-18.00</td> <td>10.00-13.00</td> <td>2.00-2.50</td> <td>&lt;.10</td> <td>&lt;.40</td> <td>&lt;.10</td> <td>&lt;.20</td> <td>&lt;.15</td> <td>&lt;.40</td> <td>&lt;.20</td> <td>&lt;.10</td> <td></td> <td></td> </tr> <tr> <td><b>CAST № 99776</b></td> <td>.024</td> <td>.41</td> <td>1.29</td> <td>.034</td> <td>.024</td> <td>16.74</td> <td>10.20</td> <td>2.03</td> <td>.064</td> <td>.28</td> <td>.04</td> <td>.09</td> <td>.005</td> <td>.08</td> <td>.012</td> <td>.035</td> <td>.013</td> <td>.001</td> </tr> </tbody> </table>																				C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	V	W	Ti	Co	Nb	N <sub>2</sub>	Su	B	<b>REQUIRED</b>	<.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			<b>CAST № 99776</b>	.024	.41	1.29	.034	.024	16.74	10.20	2.03	.064	.28	.04	.09	.005	.08	.012	.035	.013	.001
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DIN EN 10002-1, ASTM A370-09																																																																											
<b>MECHANICAL PROPERTIES</b>		<b>Yield Strength, (N/mm<sup>2</sup>)</b> R <sub>s</sub> 2% R 1.0%		<b>Tensile Strength, R<sub>m</sub>, (N/mm<sup>2</sup>)</b>		<b>Elongation</b> A <sub>5</sub> % L Q      In 2 inches (50mm) or 4D, min, % L		<b>Reducti on of area, Z % L</b>		<b>Brinell Hardness HB</b>		<b>Impact strength, KV, J</b> L      Q																																																															
<b>REQUIRED</b>		205	240	515-690		45 35	40	50	140-223	100	60																																																																
<b>EFFECTIVE</b>		281 290	331 340	590 596		59 54 58 54.5	55 54	75 73	174 174	198 212 210 204 210 215	62 62 63 63 61 62																																																																
<b>TECHNICAL REQUIREMENTS:</b> Macrostructure – GOOD GRAIN SIZE : 5 to ASTM E 112-96(2004) Nonmetallic inclusions ASTM E 45-05 (Method A) <table border="1"> <thead> <tr> <th colspan="2">A</th> <th colspan="2">B</th> <th colspan="2">C</th> <th colspan="2">D</th> </tr> <tr> <th>thin</th> <th>thick</th> <th>thin</th> <th>thick</th> <th>thin</th> <th>thick</th> <th>thin</th> <th>thick</th> </tr> </thead> <tbody> <tr> <td>2.0</td> <td>1.5</td> <td>1.5</td> <td>1.0</td> <td>0.0</td> <td>0.0</td> <td>1.0</td> <td>1.0</td> </tr> </tbody> </table> ICC-ASTM A262-08 (practice E)-test: O.K. Dimension/surface defects test, anti-mixing test – OK																			A		B		C		D		thin	thick	thin	thick	thin	thick	thin	thick	2.0	1.5	1.5	1.0	0.0	0.0	1.0	1.0																																	
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<b>Mechanical properties tested in state of delivery</b>																																																																											
<b>US - testing</b>		yes	<b>Results: ASME SA-388/SA-388M-10 (ASTM A 388/A 388M-09)-FBH1/5"; EN 10228-4 type 1a; class 3: OK</b>											<b>Manufacturer: PJSC DNIPROSPETSSTAL</b> <b>Date: 09.10.13</b> <b>Manager of quality assurance department - V. Kapaieva</b> <b>Signed:</b> 																																																													
<b>Radiation free; mercury free. No Weld or Weld repair.</b>																																																																											
<b>Zaporozhye</b> <b>Made in Ukraine.</b>																																																																											