




PrJSC DNIPROSPETSSTAL, YUZHNOYE SHOSSE 81, 69008 ZAPOROZHYE, UKRAINE

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|  | Contract No.: 20002 TECHN.PROTOCOL № 390-11 SPEC.№ 9783/PO44380 DIN EN 10088-3-05,DIN EN 10272-08,AD2000-Merkblatt W2;AD 2000-Merkblatt W10;ASTM A 182/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:3 Sheet: 3 |
| | INSPECTION CERTIFICATE EN10204/3.1 Nr. 337700 PLANT ORDER № 8014909783 | | |

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|-----------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  | CUSTOMER DSS INTERNATIONAL SA Switzerland | PRODUCT DESCRIPTION Bars and rods of corrosion-resistant (stainless) steel hot rolled, peeled on Loeser line.Прутки из коррозионностойких (нержавеющих) сталей горячекатаные, обточенные на линии Лезер. STEEL MAKING PROCESS: EAF+AOD СПОСОБ ВЫПЛАВКИ:Электродуговая печь+АКР Round 7.750in/196.85 mm L=18.295ft/5.580m L=18.328ft/5.590m Grade: 316/316L/1.4401/1.4404 | QUANTITY: 1bund Q-3053 lb/1385 kg (number of pcs) 1bund Q-3064 lb/1390 kg |
| | | | Delivery condition solution annealed :1900°F(1040°C)water 30minutes 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 № A06231 | .017 | .49 | 1.30 | .040 | .024 | 16,87 | 10.15 | 2.06 | .077 | .32 | .05 | .05 | .005 | .12 | .01 | .031 | .011 | .0022 |

| DIN EN 10002-1,ASTM A370-09 | | | | | | | | | | TECHNICAL REQUIREMENTS: | | | | | | | | | |
|-----------------------------|------------------------------------------------------|-----|--------------------------------------------|------------|----|-----------------------------|---------------------|------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|----|----|----|----|--|--|
| MECHANICAL PROPERTIES | Yield Strength, (N/mm ²) R0.2% R 1.0% | | Tensile Strength, Rm, (N/mm ²) | Elongation | | Reduction of area, Z % L | Brinell Hardness HB | Impact strength, KV, J | | 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 2.1 1.2 1.5 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-9.9:1 | | | | | | | | | |
| | REQUIRED | 205 | | 240 | 45 | | | 35 | 40 | | | | | | | | | | |
| EFFECTIVE | 289 | 313 | 551 | 61 | 53 | 59 | 79 | 163 | 187 | 187 | 187 | 65 | 65 | 65 | 63 | 63 | 63 | | |

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| Mechanical properties tested in state of delivery | | | Manufacturer:PrJSC DNIPROSPETSSTAL Date: 07.09.18 Manager of quality assurance department - V. Kapaieva Signed:  Zaporozhye Made in Ukraine. | | | | | | | | | | | | | | | |
| US - testing | yes | Results: ASTM A388/A388M-FBH1/8";EN 10308 type 1a;class 3:OK | | | | | | | | | | | | | | | | |
| Radiation free; mercury free. No Weld or Weld repair. | | | | | | | | | | | | | | | | | | |