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| ATTACHMENT A – TECHNICAL SPECIFICATIONGeneral requirements1. **TERMS AND DEFINITIONS**

|  |  |  |
| --- | --- | --- |
| EN | **-** | European Norm |
| GOSTDSTU | **-** | Standard (former)State Standard (current Ukraine) |
| ISO | **-** | International Standards Organisation |
| Diameter of nominal bore, DN | **-** | The internal diameter (in mm) of connections that is used for the hydraulic design calculations. |
| Nominal pressure, PNEquipmentMaterialsTools  | **-** | The maximum pressure of 20ºС water, for which long-lasting operation of hydraulic equipment and connecting (attachable) units of pipelines allows.Shut-off valvesElectric-welded steel pipes; spiral-welded steel pipes; seamless hot-formed steel pipes; seamless cold-formed steel pipesWelding machines |

1. **CODES AND STANDARDS**

The materials and equipment under this Tender Document shall be designed, manufactured and supplied in accordance with applicable Ukrainian laws, codes and regulations, and shall conform to the respective European and international standards. In case of discrepancies between state and international standards, preference shall be given to the standards with stricter requirements.The references to specific Ukrainian standards does not prevent from complying with the corresponding EN standards.All materials significant for the proper functioning of the system shall possess stable properties during the service life of the system, considering the temperatures and other actions to which the material will be exposed. Fatigue, creep and ageing shall be considered in this context.All components and equipment included in the delivery shall be certified to be used in Ukraine and be free of ODS (ozone-depleting substances) and CFC/HFC (chlorofluorocarbon/ hydrofluorocarbon) during both manufacturing and operation.The main applicable standards (latest edition) are as follows:

|  |  |
| --- | --- |
| ISO 9330 |  Welded steel tubes for pressure purposes. Technical delivery  Conditions |
| ISO 404ISO 559 |  Steel and steel products. General technical delivery requirements  Steel tubes for water and sewage Quality Manual Template |
| ISO 9001 |
| EN 10217 |  Welded steel tubes for pressure purposes. Technical delivery  Conditions |

DSTU8938:2019 Seamless hot-formed steel pipes. Technical conditions.DSTU8939:2019 Seamless cold-formed steel pipes. Technical conditions.DSTU 8943:2019 Electric welded steel pipes. Technical conditions.DSTU 7809:2015 Calibrated rolled products with special surface treatment from  high-quality carbon structural steel. General technical conditionsEN 10217-2 Welded steel tubes for pressure purposes. Technical delivery  Conditions. Part 2: Electric welded non-alloy and alloy steel tubes with specified elevated temperature properties (for up to DN 400)EN 10217-5 Welded steel tubes for pressure purposes - Technical delivery  conditions - Part 5: Submerged arc welded non-alloy and alloy  steel tubes with specified elevated temperature properties (for  above DN 400)EN 10220 Seamless and welded steel tubes. Dimensions and masses per unit  lengthGOST 20295-85 Welded steel pipes for main gas and oil pipelines. Technical  conditionsDSTU GOST 17375:2003 Seamless welded pipeline parts made of carbon and low-alloy  steel. Steep bends type 3D (R = 1.5 DN). Design (GOST 17375- 2001 (ISO 3419-81), IDT)DSTU GOST 5762:2004 Industrial pipeline fittings. Gate valves for rated pressure no more  PN 250. General technical conditions.

|  |
| --- |
|  EU Directive 97/23/EG on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment. |

Materials and equipment manufactured abroad and imported to Ukraine shall have certification of conformity to the Ukrainian DSTU standards.If the Participant applies the standards and codes other than the above-mentioned, an official statement confirming that that the applied standards guarantee better or equal quality of the materials and equipment supplied under the Contract shall be included in the Tender.1. **DOCUMENTS TO BE SUBMITTED BY THE CONTRACTOR**

Participants must submit documents confirming the compliance of the bidder's Offer with thespecified technical, qualitative, quantitative and other requirements for the subject of procure-ment, namely:1. Quality Certificate provided by the Manufacturer (a sample document is provided in the tender Offer; original Certificates are provided with the Goods);
2. Declaration of conformity of products offered by the Participant for supply;
3. Certificate of conformity for valves (type examination) to the requirements of the Technical Regulations of pressure equipment, approved by the Resolution of the Cabinet of Ministers of Ukraine dated 16.01.2019 №27 with Annex to the certificate with the specified data on the identification of the product (for valves);
4. Passport and operating instructions for equipment;
5. Certificate of dealer, manufacturer's representative and/or cooperation agreement with the manufacturer and/or other document confirming the relationship between the manufacturer and the participant;
6. Letter of authorization from the Manufacturer of the Goods with reference to the tender number and confirmation of the provision of an official warranty for products for a period of at least 24 months, as well as the fulfilment of other obligations related to the timely delivery of quality products.
7. **ELEMENTS AND MATERIALS SPECIFICATIONS**

Supplied equipment and materials (pipes, accessories) should not be manufactured earlier than 2022. These specifications provide “minimum” requirements. Participants are also encouraged to quote items that have substantially equivalent or better characteristics.All equipment and materials shall be of industrial grade and of standard construction, sturdy design and manufacture.All parts in direct contact with various environment shall be completely resistant to corrosion, or abrasion by these environment.Particular attention shall be given to the prevention of seizure by fretting where two corrosion resistant metals are in contact, by the selection of materials of suitable hardness and surface finish and the application of lubricants.LOT 1 STEEL PIPE  **PLACE OF DELIVERY: Myrnograd, Donetska obl.,** **Object:** pipes -28810 m of var. DN / 261.1 t, & steel steep bends – 10 un. DN 300 /0.45 t. Specification in the table below:

| **Diameter, wall thickness, mm** | **Quantity, m** |
| --- | --- |
|
| **DSTU 8943:2019** |  |
| 325 x 8.0 | 144 |
| 273 x 8.0 | 732 |
| 219 x 8.0 | 1536 |
| 159 x 5.0 | 2952 |
| 133 x 4.0 | 156 |
| 108 x 4.0 | 3192 |
| 89 x 3.5 | 2352 |
| 76 x 3.5 | 1872 |
| 57 x 3.5 | 1872 |
| TOTAL**:** | **14808** |
| **DSTU 8939:2019** |  |
| 108 x 4.0 | 24 |
| 89 x 4.0 | 36 |
| 76 x 3.5 | 48 |
| 57 x 3.5 | 1296 |
| 57 x 3.0 | 48 |
| 51 x 3.0 | 804 |
| 51 x 2.5 | 3454 |
| 42 x 3.0 | 96 |
| 28 x 3.0 | 8004 |
| 20 x 3.0 | 72 |
| TOTAL**:** | **13882** |
| **Diameter, wall thickness, mm** | **Quantity, m** |
| **DSTU 8938:2019** |  |
| 159 x 6.0 | 96 |
| 152 x 6.0 | 24 |
| TOTAL**:** | **120** |
| **TOTAL:** | **28810** |

 |

|  |  |
| --- | --- |
| **List of bands DSTU GOST 17375:2003** | **Quantity, un.** |
| 90°-325-8.0, ex. 2 | 10 |
| **TOTAL:** | **10** |

Pipe length – at least 12 m. The pipes, that manufactured in Ukraine must comply with DSTU 8943:2019, DSTU 8939:2019, DSTU 8938:2019.

The steel steep bands, that manufactured in Ukraine must comply with DSTU GOST 17375:2003.

The material of pipes and bands should be St.20.0 steel (DSTU 7809:2015) or equivalent, or better quality, which satisfies the requirements of the "Rules for the construction and safe operation of steam and hot water pipelines".

Instead of electric welded steel pipes (DSTU 8943:2019), it’s allowed to supply of spiral-welded steel pipes in accordance with EN 10217-2 (P235GH; for up to DN 400), EN 10217-5 (P235 GH for above) or EN 10220 standards with a tolerance of diameter in accordance with EN 253:2009.

The Supplier shall submit all required manufacturer certificates for steel pipes and bands with information on pipe dimensions, mechanical characteristics and chemical composition of steel, heat treatment methods, and performed tests.

Every Good shall be marked by the manufacturer with his indelible trademark at least at one end of the pipe.

Warranty – at least 2 years.

LOT 2 SHUT-OFF VALVES

**PLACE OF DELIVERY: Myrnograd, Donetska obl.**

**Object:** steel valves -71 un. of var. DN.

Specification in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Valve type** | **DN, mm** | **PN, MPa** | **Q-ty, un.** |
| **30c41нж,** **or equivalent** | 100 | 1,6 | 5 |
| 150 | 14 |
| 300 | 6 |
| **30c64нж,** **or equivalent** | 100 | 2.5 | 16 |
| 150 | 20 |
| 200 | 10 |
| **TOTAL:** |  |  | **71** |

Technical specifications for each type of valves are given below.

1. **Steel wedge flange gate valves (PN 1.6 Mpa) – 25 un.**

Steel wedge gate valves must comply with DSTU GOST 5762: 2004.

Technical specifications:

Work environment: water, steam

Operating temperature: up to 425ºС.

DN 100 - 300

PN: 1.6 MPa
Connection to the pipeline: flange

Drive manual (flywheel)

Shutter tightness, class A

Material of main parts:

Body, wedge, valve cover steel 20Л or steel of the highest quality

Spindle steel 20Х13 or steel of the highest quality

Valve seal material metal to metal

Hardfacing of body and wedge stainless steel

Stuffing ring graphite or top quality material

O-rings, threaded sleeve brass ЛС 59

1. **Steel wedge flange gate valves (PN 2.5 Mpa) – 46 un.**

Steel wedge gate valves must comply with DSTU GOST 5762: 2004.

Technical specifications:

Work environment: water, steam

Operating temperature: up to 425ºС.

DN 100 - 200

PN: 2.5 MPa
Connection to the pipeline: flange

Drive DN 100 -300 - manual (flywheel);

Shutter tightness, class A

Material of main parts:

Body, wedge, valve cover steel 20Л or steel of the highest quality

Spindle steel 20Х13 or steel of the highest quality

Valve seal material metal to metal

Hardfacing of body and wedge stainless steel

Stuffing ring graphite or top quality material

O-rings, threaded sleeve brass ЛС 59

The valves shall be subject to warranty sealing and have the name of the Manufacturer and the number.

Valve marking shall be performed on the body of the valves in a cast font and have the following data:

- trademark of the manufacturer;

- nominal pressure indicated by the letters PN and its magnitude;

- nominal diameter in letters DN and numbers;

- designation of the material of parts that are under pressure.

The manual control body shall be marked "C" (closed), "B" (open) in cast font to indicate the direction of rotation.

All equipment shall be of industrial grade and of standard construction, sturdy design and manufactured no earlier than 2022. Warranty – at least 2 years.

The Supplier shall submit all required manufacturer certificates.

LOT 3 REPAIR MECHANISMS and TOOLS

**PLACE OF DELIVERY: Myrnograd, Donetska obl.**

# **Objects of procurement:** Welding machine Vitals Professional A 2000k Multi Pro – 5 sets

# **Set includes:** welding machine, handle, welding cables “mass” and electric holder, welder’s mask, brush hammer, case

#

# A picture containing text, tool  Description automatically generatedInsulation class – F;

# Mains voltage – 160 -240 V;

# Mains frequency – 50 Hz;

# Minimum welding current – 10A;

# Maximum welding current – 200A;

# Protection class – IP21s;

# Electrode diameter – 1.6 -5.0 mm;

# Power factor – 0.85;

# Maximum power consumption –

#  5.1 kW;

# Digital display – yes;

#  Welding cable”mass”, length – 2.5m;

#  Electric holder cable, length – 2.5 m;

#  Welding type – MMA & LIFT TIG

#

Tools shall be of industrial grade and of standard construction, sturdy design and manufactured no earlier than 2022. Warranty – at least 2 years.

Availability of service centre in Ukraine is mandatory.

The Supplier shall submit to the Employer all required manufacturer certificates, passports, operating instruction, etc.