

**Energy Audit of Water and Wastewater Utilities
in 6 towns of Moldova**

**Procurement of Goods
and Associated Services**

TECHNICAL SPECIFICATIONS

Disc aerators for Floresti Waste Water Treatment Plant

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for

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REQUIREMENTS (SPECIFICATIONS)

for

Disc aerators for Floresti Waste Water Treatment Plant

1 General Information

1.1 Scope of Supplies and Services

1.1.1 Introduction

Within this Supply Contract, the Supplier is responsible for supplying goods for the following main items:

Supply of disc aerators

Supply of installation accessories for aerators

The distribution of responsibilities for pipe laying and installation of goods are as follows:

The Local Water Utility shall be responsible for providing labour and miscellaneous equipment for installation of disc aerators in aeration tanks. All required fittings, materials for mounting of aerators on PE pipe OD90 shall be procured under the supply contract.

1.1.2 Delivery of Goods to Site

The supply of Goods shall be planned in one shipment. The shipment should arrive not later **12 weeks** after signing the Contract.

The Supplier shall ensure that materials and equipment are acceptable in Moldova and that all necessary technical documentation, certificates, approvals (Agreement Tehnic) etc. are available prior to shipment.

1.1.3 Installation, Operation and Maintenance Manuals

Four (4) complete sets of installation, operation and maintenance manuals shall be submitted to the Purchaser on delivery of the Goods.

The operation and maintenance manuals shall be in English with vital parts translated into Romanian or Russian. Furthermore, the manuals shall be specific to this particular contract and shall as a minimum comprise:

1. General description of installation and/or operation of the Goods (with translation into Romanian or Russian);
2. Brochures and/or data sheets stating the address of the manufacturers;
3. Characteristics (curves, diagrams, test certificates, etc.);
4. Maintenance instructions (with translation into Romanian or Russian);
5. Repair guidelines (with translation into Romanian or Russian);
6. Summary of supplied spare parts, if any.

The manuals shall contain all relevant information for the proper maintenance and repair of the supplied material's or mechanical equipment.

1.1.4 Delivery of Tools

The Supplier shall provide tools as required for installation, normal maintenance and repair of the Goods by the Water Utility staff.

Details of the proposed tools shall be presented in the Tender.

1.2 Work Programme

The Supplier shall within 2 weeks of signing the Contract submit a detailed schedule of shipment incorporating delivery times.

1.3 General Specifications and Requirements

1.3.1 Standard of Materials and Workmanship

All materials and equipment shall as a general rule meet the appropriate international standards (ISO 9001) or approved similar standards with regard to material, quality, workmanship and performance. Coating of all mechanical components shall meet the appropriate standards (SIS Environmental Class III) or approved similar standard.

1.3.2 Tests and Guarantees

The acceptance of the supplied goods by the Purchaser shall in no way relieve the Supplier of his responsibility for the performance of the Goods when used. It is the responsibility of the Supplier to prove that the supplied materials and fittings comply with Specifications.

The Supplier shall in this connection guarantee that:

- All materials and equipment are new and of best quality.
- In case the tests performed prove that these requirements are not met, the Purchaser is entitled to demand remedial actions to be taken by the supplier in order to meet these requirements.

1.3.3 Warranty Period

If any repairs and/or alterations of the Goods are required, the warranty period for the goods and specific parts will not commence until the repairs/ alterations have been brought to a successful conclusion and the Purchaser has been duly notified in writing.

The Supplier commits himself to carry out any remedial works immediately. The necessary time limits for such works shall be agreed with the Purchaser as soon as a defective component or malfunctioning has been discovered. Maximum time for remedial works or replacement of the supplied goods is two (2) weeks from the first written notification.

If the Supplier does not carry out the remedial works within the agreed time limits, the Employer is entitled to require the necessary works to be performed by others at the expense of the Supplier.

1.4 Climatic Conditions

The climate of Moldova is temperate-continental with little snow in winters and long warm summers. The annual average temperature is +9,6°C. The warmest month is July, the average temperature of which is 21,5-22,0°C. The absolute max temperature is +40°C. The coldest month is January and its average temperature is -3,8°C. The absolute min temperature reaches -30°C. The average temperature of the coldest five-days is -15,6°C, and the warmest -21°C. The average duration of the frost-free period is 189 days. The annual average temperature of the soil surface is 12°C. The max penetration of 0°C into the soil is 87 cm. The max freezing through of the clayey soil is 80 cm. The annual average of precipitation is 480 mm. Most precipitation falls in the warm period (April-November), i.e. 74% of the annual 353 mm.

1.5 Unit of Measurement

Metric units of measurements (Système Internationale) shall be employed in all correspondence, in all technical schedules and in all drawings.

2 Detailed Technical Specifications

2.1 Standards, Submission of Materials and Equipment

Where a technical specification has been established under the provisions of Directive 889/106/EC, the relevant system of conformity attestation chosen by the European Communities shall apply to those elements of that specification, which relate to a mandate given by the Commission. However, this sub-clause shall not apply where the Contract under the provisions of another Directive, defines such further quality assurance requirements as are necessary to complement any technical specification.

The materials conforming to internationally recognised national standards or certifications schemes, may be an acceptable alternative, especially where no appropriate European standard currently exists.

2.2 Storage of Materials

The Supplier shall store materials and components in such a manner as to preserve the quality and condition to the standards required by the Contract. Due to the climatic conditions Supplier shall be responsible for the proper off-loading and protection of the Goods against exposure to the sun.

2.3 Handling and Use of Materials

Materials and components shall be handled in such a manner as to avoid any damage or contamination, and in accordance with all applicable recommendations of the manufacturers.

Unless otherwise described in the Contract, the use, installation, application or fixing of materials and components shall be in accordance with all applicable recommendations of the manufacturers. Where appropriate, the Supplier shall make use of any technical advisory services offered by manufacturers.

2.4 Disc Aerators

Disc aerators shall correspond to the following technical requirements:

Diameter	225 - 250 mm
Membrane material	High grade EPDM/Silicon
Support disc material	ABS/PVC
Size of bubbles	Coarse bubble 1-2 mm
Airflow	1,5 – 4 m ³ /h
Air temperature	0 +100 °C

Quick saddle connection

The saddle shall be designed to mount onto 90mm PVC/PE pipe. An integral seal shall be provided in the saddle to ensure a leak-free connection. It shall be possible to remove the membrane without removing the whole aerator from the pipe.