



Reg. № 074/ _____

«APPROVED»

Chief Mechanic

LLC «Shurtan GCC»

_____ Kh. Allayarov

« _____ » 2021



TECHNICAL SPECIFICATION
for the supply of a plant for shredding polyethylene waste
(industrial shredder)
for the needs of LLC "Shurtan GCC"

SGCC 2021

1. GENERAL INFORMATION

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| 1.1 Name |
| Installation for shredding polyethylene waste (industrial shredder). |
| 1.2 The basis and purpose of the purchase of the goods |
| Basis: Measures to eliminate the shortcomings of monitoring of the 5th stage of control from 14.02.2020, item No. 15 Purpose: For primary (coarse) grinding of hard-to-grind polyethylene materials with a size of at least 30-50mm. |
| 1.3 Information about the novelty |
| The product must be new, not previously used. All components, assemblies, parts and components must be manufactured no earlier than 2022. |

2. SCOPE OF APPLICATION

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| The equipment is designed for primary (coarse) grinding of hard-to-grind polyethylene materials with a size of at least 30-50 mm of technological waste and waste in the production of finished polyethylene products. |
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3. TERMS OF USE

| 3.1 General operating conditions | | | | | |
|--|--------|--|---------------------------|------------------------------------|----------------------------------|
| Place of operation - workshop "Karshitermoplast", LLC "Shurtan Gas Chemical Complex" | | | | | |
| Operating mode of the enterprise: Two shifts, 12 hours a day, 8000 hours a year. | | | | | |
| 3.2 Additional / special operating requirements | | | | | |
| Specification of raw waste | | | | | |
| № | Name | Formed | View | Physical and mechanical properties | |
| | | | | Density, g / cm ³ | Melt flow rate, 2.16 kg, g/10min |
| 1 | Ingots | Debris formed when starting and stopping the extruder. | Large-sized solid polymer | 0,94-0,96 | 0,2-1,0 |
| 2 | Pipe | Defective, substandard products formed when the extruder deviates from the technological mode. | Pipe segments | 0,94-0,96 | 0,2-1,0 |

4. TECHNICAL REQUIREMENTS

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| 4.1 The main technical requirements for the technological line and for technical and commercial proposals of potential suppliers |
| 4.1.1. Preliminary list of components and parts of the complete production line: <ul style="list-style-type: none"> • Loading hopper; • Waste cutting device; • Electric cabinet; • Devices and equipment (special tools) for repair work; • A set of spare parts for the period of commissioning; • Required fast-wearing spare parts (fractional mesh, knives, bearings, etc.) for 2-year operation. <p>The above list of components and parts is preliminary. The actual completeness of the line is determined by the manufacturer based on the requirements for the final products.</p> <p>Technical specifications of the equipment:</p> |



- The standard power supply is 220/380V with a frequency of 50 Hz;
- Motor protection-IP54
- Stable guaranteed productivity from 250 to 600 kg / hour;
- The maximum diameter of the recycled waste of polyethylene pipes is up to 630 mm;
- The maximum length of the recycled waste of polyethylene pipes is up to 3 m;
- Production of cutting parts from high-quality steel of the SCD-11 brand or its analogues, the hardening hardness of the knives is HRC55-60, the working surface must be protected from corrosion and abrasive wear by appropriate methods;
- The wall thickness of the crushing chamber is at least 25 mm;
- The shredder body is made of Q345B steel;
- Control – automatic, local;
- Economical energy costs (electricity, compressed air);
- The presence of a cooling system in case of overheating of the rotor or engine;
- Crushing of pipes and ingots without preliminary cutting;
- Electrical components from well-known leading manufacturers Siemens and Schneider
- The presence of a protection system (blocking) and an alarm system (in case of engine overheating, rotor stopper, etc.);



4.1.2. The submitted technical proposal must be written in Uzbek or Russian and duplicated in English. The technical part of the technical and commercial proposals of potential suppliers should at least consist of the following documents:

- It is necessary to provide certificates (international certificates ISO-9001, 14001, 50001, 45001, certificate of origin, manufacturer's quality certificate and/or other certificates of international, recognized laboratories and test centers);
- It is necessary to provide a list of companies that are users of the proposed product;
- It is necessary to specify publicly available information about the manufacturer (the company's website, etc.);
- Reference list of deliveries of this or similar equipment (provided that the equipment with the parameters required by the customer is offered for the first time) for the last 3 years, indicating the contact details of the Customers.
- Technical characteristics of the main and auxiliary equipment with an indication of the guaranteed capacity of the equipment of the manufactured products, the service life of the equipment, specific properties and detailed energy requirements;
- Basic equipment and all possible additional components and functions based on the experience of previous deliveries;
- Information about the materials used for the manufacture of the body and cutting parts of the shredder with the application of the certificate of compliance;

Detailed drawings of the general view of the main and auxiliary equipment;

4.2 Design requirements, installation and technical requirements

| № | Description | Technical specifications |
|----------|----------------------------|--|
| 1 | The purpose of the process | PE / PP / PVC pipes with a diameter of ≤ 630 mm |
| 2 | Feeder size | 700 * 700 mm |
| 3 | Rotator diameter | 400 mm (effective length: 800 mm) |

| | | |
|----|--|-----------|
| 4 | The speed of rotation of the web | 60-75 rpm |
| 5 | Blade material | SKD-11 |
| 6 | Blade hardness | HRC55-60 |
| 7 | Number of rotating blade | 34 + 4pcs |
| 8 | Number of fixed blade | 2 sets |
| 9 | Thickness of the walls of the crushing chamber | 25mm |
| 10 | Crushing chamber material | Q345B |
| 11 | Drive motor power | 45 kW |

Electrical parts

| | | |
|---|---------------------------|------------|
| 1 | Motor protection standard | IP54 |
| 2 | Noise (decibel) | <75 |
| 3 | PLC | SIMENS PLC |
| 4 | Contactor | Schneider |
| 5 | Electrical relay | Schneider |

Hydraulic system

| | | |
|---|-----------------------------|-------------|
| 1 | Oil pump motor | 3 kW |
| 2 | Maximum. System pressure | 10 Mpa |
| 3 | Hydraulic cylinder diameter | 80 mm |
| 4 | Cooling type | Fan cooling |

Feeding system

| | | |
|---|-------------------------------------|--------------------|
| 1 | The distance of pushing materials | 800 mm |
| 2 | Forward and backward control system | PLC control system |
| 3 | Protection system | Contactless switch |

4.2. Reliability requirements

All units of the installation must be protected from environmental influences when working with an air temperature range ranging from -10⁰C to +50⁰C. The working surface of the equipment must be protected from corrosion and abrasive wear by appropriate methods.

4.3. Requirements for finished products

The finished products should be polyethylene ingots of various geometric shapes with overall dimensions of 30-50 mm

4.4 Marking requirements

The main marking data should contain:

- name of the type of equipment (conventional name) and (or) designation of the type of equipment;
- nominal values of the main parameters of the equipment: voltage, current, frequency, power, etc.;
- date of manufacture;

trademark or name of the manufacturer.

4.5 Size and packaging requirements

The equipment must be shipped in export packaging that corresponds to the nature of the supplied equipment. The packaging must protect the cargo from any kind of damage and corrosion: the materials used for packaging must be of proper

quality, of sufficient strength, excluding the possibility of damage during loading, overloading by cranes and loaders. A detailed list of contents should be provided on each package. The supplier is fully responsible for any kind of damage to the equipment due to poor-quality packaging.

5. REQUIREMENTS FOR THE RULES OF DELIVERY AND ACCEPTANCE

5.1 Delivery and acceptance procedure

After installation, commissioning, the equipment will be subjected to comprehensive operational tests for guaranteed performance in order to confirm:

- Equipment performance;
- Guaranteed equipment power for 72 hours of operation.

The quality of the products produced during warranty tests must comply with the quality indicators set out in paragraph 4.3. of this Technical Specification.

The warranty period of operation of the equipment set is 16,000 machine hours or 24 months (depending on what comes first) after the completion of a comprehensive operational test for guaranteed performance and the signing of the equipment acceptance certificate; During the warranty period, the supplier is obliged to send qualified specialists to eliminate any equipment problems that occurred due to improper quality of the supplied equipment, or hidden equipment defects that could not be detected during warranty performance tests;

The period between the receipt of the notification of the warranty event and the arrival of the supplier's specialists at the Customer's site should not exceed 21 calendar days;

If it is necessary to replace any defective unit or part of the equipment, the period of replacement of the part and elimination of the detected defect should not exceed a period of more than 1 (one) month, unless otherwise stipulated by the production cycle of the replaced part and / or unit;

5.2 Requirements for the transfer of technical and other documents to the customer when delivering goods

The set supplied with the equipment and documentation must consist, but not limited to, of the following list of documentation provided in **Russian and English, 2 copies each**, in paper and electronic versions:

- Installation, assembly and commissioning manual;
- Detailed general-view drawings and sketch diagrams of the placement of the main and auxiliary equipment, indicating specific properties and detailed energy needs;
- Productivity, taking into account the waste used;
- Drawing and detailed description of the parts used, bolt dimensions;
- Repair, operation and maintenance manual;
- Electrical connection diagrams (all types);
- Description of blockages (block diagrams) indicating the reasons for possible emergency stops (causal diagram) and their effect on devices;
- Technical specifications and descriptions of devices and other technical information;

Detailed technical specifications of spare parts with a description and indication of drawings

5.3 Requirements for product insurance

Equipment insurance is carried out at the expense of the supplier.

6. TRANSPORTATION REQUIREMENTS



The supplier must bear all the costs of transporting the equipment and is fully responsible for any damage to the equipment during transportation.

7. REQUIREMENTS FOR THE SCOPE AND / OR DURATION OF GUARANTEES

The scope of the supplier's services within the framework of the concluded contract for the supply of complete equipment should include:

- Delivery of all components and parts of complete production lines under the conditions specified in section No. 14 of this technical specification;
- Supervision of installation and commissioning at the Customer's site of the equipment of the supplied main equipment;
- All expenses for accommodation, meals, daily expenses, air tickets, travel expenses and other expenses of the supplier's specialists;
- Commissioning of installed equipment;
- Coordination of work by the supplier and sub-suppliers for the equipment configuration;
- Conducting comprehensive performance warranty tests at the Customer's site after putting the complete equipment into operation and putting it into stable operation;

Provision of qualified personnel of the manufacturer and sub-suppliers (if necessary) during the period of commissioning and complex performance tests;

Provision by the manufacturer/supplier of information about the operating costs of the equipment, according to the regulatory and technical documentation.

9. SERVICE REQUIREMENTS

Technical support (guaranteed support with spare parts) for 2 years of further operation.

10. ENVIRONMENTAL REQUIREMENTS

The equipment must comply with international quality and environmental safety requirements;
The equipment must not cause any damage to the environment;

11. SAFETY REQUIREMENTS

The equipment must be safe during its operation, storage, and disposal;

12. QUALITY REQUIREMENTS

The manufacturer or supplier must guarantee the quality of the machine for three years for the main components of the machine. If, for technical reasons, the main parts of the machine fail, the Manufacturer or supplier must replace them with new ones free of charge. (The customer returns the damaged parts).

The quality of the goods must comply with the established standards and technical conditions of the manufacturer and be confirmed by a certificate of factory tests issued by the manufacturer;

The quality of the product must ensure that it can be used for its intended purpose without negative consequences.

It is necessary to provide certificates (certificate of origin, manufacturer's quality certificate and / or other certificates of international, recognized laboratories and test centers);

13. ADDITIONAL (OTHER) REQUIREMENTS

After the conclusion of the contract, the Supplier provides the Customer within 2 (two) weeks:

- A master plan for the location of technological equipment with an indication of the energy needs of



each unit of equipment in the production chain;

- Overall dimensions of the supplied technological equipment;
- Drawings for the location of the line, foundations;
- Overall dimensions of underground channels for laying engineering communications;
- Technical parameters of cables and pipelines;
- Technical parameters and International standards of lubricants used (oil and lubricants) and a list of suppliers of these materials for purchase by the Customer;
- The supplier agrees with the Customer on the color of the supplied technological equipment before the completion of the manufacturing of technological equipment.

14. REQUIREMENTS FOR THE QUANTITY, CONFIGURATION, PLACE AND TIME (PERIODICITY) OF DELIVERY

Scope of delivery – 1 set of industrial shredder and 2-year fast-wearing spare parts

Delivery period -I-II quarter of 2022y.

Wagon delivery/Container delivery:DAP-railway station Kengsoy (station code-732602), GAZhK "Uzbekistan Temir Yullari"

Transport delivery:DAP-Republic of Uzbekistan, Kashkadarya region, Guzar district, Shurtan village, 180300

Container delivery: DAP-railway station Kengsoy (station code -732602), GAZhK "Uzbekistan Temir Yullari"

15. REQUIREMENT FOR THE FORM OF THE SUBMITTED INFORMATION

The submitted technical proposal must have a copy on electronic media (CD / DVD discs or USB storage media)

** Note: The developer is responsible for the correctness of filling in and unfilled items.*

