

REGISTRY OFFICE
Societatea de Servicii
Hidroenergetice-HidroServ SA

SSRH Portile de Fier
TECHNICAL PRODUCTION Department

TECHNICAL SPECIFICATION

Purchase of new bushing parts for HA 1 hydraulic turbine from PORȚILE DE FIER I HPP

related to the level 3 work (LN3) with dismantling and repair of the adjustment circuit at the Hydro unit no. 1 of Porțile de Fier I HPP- according to Annex 3 of the Hidroelectrica Technical Specification no. 142446/05.12.2022

**Technical Specification for:
Purchase of elements for new hydraulic
turbine bushings – HA1 – CHE PF1**

1. General considerations

SSH Hidroserv through Porțile de Fier Section has in progress the execution of the LN3 level work at HU1 of Porțile de Fier 1 HPP, work that is performed based on the Technical Specification 142446_3/06.12.2022 (entry number in Hidroserv 12564/06.12.2022), prepared by the Beneficiary, Hidroelectrica/ SH Portile de Fier.

Annex 3 to the above Tender Specifications has as object : “*Technical Specification for the Purchase of Products*” (no. HE124832_1/27.10.2022) and defines in Annex B to this technical specification a List of materials with the character of spare parts that must be purchased during the repair of the basic work LN3 – HA1 – PF1 HPP.

The object of these technical specification consists of the purchase of new bushing parts, which will be spare parts_necessary for the hydraulic turbine within the hydro unit HU1 of Porțile de Fier 1 HPP.

2. Entities involved in the purchase of new TH (HA1) – PF 1 HPP:

- Final Beneficiary: Hidroelectrica by SH Portile de Fier
- Buyer: SSH Hidroserv through Porțile de Fier Section, which also has the quality of Contractor of LN3 repair works at HU1 (PF1 HPP)
- Supplier of new parts-bushings

3. Object of the Technical Specification: Purchase of new parts - bushings for the hydraulic turbine (HU1) – PF1 HPP

The list of the requested products, which are spare parts, respectively bushings for the HU1 turbine of PF1 HPP, together with the related technical documentation (Detailed Design and technical execution conditions) is presented in Annex 1 to this Technical Specification. The technical conditions of execution are included, as the case may be, in the detailed design drawings and the technical conditions presented for each component. The spare parts for the hydraulic turbines from Porțile de Fier I HPP that are the object of these Tender Specifications will be executed (manufactured) by specialized profile units according to their own execution technologies, in strict compliance with the technical characteristics and the technical conditions of manufacture and control listed in these Technical Specification.

3.1. Required products

Spare parts (bushings) for the hydraulic turbines from Porțile de Fier I HPP according to Annex 1 to this Technical Specification	
1. Quantity	according to Annex 1 to these Technical Specification
2. Unit of measurement	(pieces)
3. Delivery Location	SH Portile de Fier - Porțile de Fier I Warehouse, Gura Văii town, county Mehedinți
4. Requested delivery time	4 months after signing the contract/order
5. Technical specifications/minimum functional requirements/Minimum technical conditions of manufacture and control	According to: Technical Specification, Annex 1 to the Technical Specification and Annex 2 excerpt from the Hidroelectrica Technical Specification no. 142446/05.12.2022 , an integral part thereof.
6. Extended technical specifications/functional requirements	NO

7. Minimum Warranty Duration/Shelf Life	48 months after delivery
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3.2 Warranty

The products are offered, produced, inspected and delivered, by the Supplier, in accordance with the technical and quality requirements specified in these Technical Specification, Annex 1 and Annex 2 excerpt from the Hidroelectrica Technical Specification no. 142446/05.12.2022 , an integral part thereof.

The warranty period is at least 48 months from delivery, the period in which the supplier is responsible for all non-conformities, apparent or hidden defects that can be highlighted after delivery.

The supplier must ensure compliance with the technical requirements for execution and quality, specified in these Technical Specification, chap.3 and Annex 1, an integral part thereof.

3.3 Delivery, packaging, labeling, transport and insurance during transport

The delivery of the products to the Purchaser shall be made by the Supplier, based on the qualitative and quantitative acceptance performed and the documents attesting the conformity, issued by it in accordance with the technical and quality requirements specified in Annex 1 1 and Annex 2 of the Hidroelectrica Technical Specification no. 142446/05.12.2022 , an integral part thereof.

The new parts will be delivered, in the full specified quantities, packed, identified, preserved for protection against corrosion, mechanical blows and deformation during transport or storage.

The delivery address is: Porțile de Fier I HPP - Calea Timișoarei no. 2, Gura Văii, Mehedinți County.
Upon delivery, the spare parts will be accompanied by the quality and acceptance documents issued in the factory, listed in chapter5 of this technical specification, the delivery note and the invoice.
The spare parts will be offered and invoiced in the price/piece invoice.

3.4 The environment in which the products are operated

The spare parts - bushings that are the object of the acquisition will be mounted on a high-power hydraulic turbine

3.6 Duties and Responsibilities of the Parties

The duties and responsibilities of the Supplier derive from the full compliance with the requirements specified in these technical specification. It must produce and deliver to the Buyer the products in the quantities, delivery terms and the specified technical and qualitative conditions, at the agreed prices.

The Supplier has the obligation to remedy or replace the buyer of the non-compliant products claimed by it, or by the final beneficiary.

The Buyer has the right to inspect the products delivered by the Supplier and submits complaints in case of detection of any non-conformities, during the warranty period for apparent defects, and even subsequently, for hidden defects.

The Buyer has the obligation to receive and pay for the products delivered by the Supplier, in accordance with the specifications of these Technical Specification, at the prices and within the terms agreed bilaterally.

4. Content of the Tender

A tender must include:

- List of products required according to the List in Annex 1, quantitative confirmation and in terms of technical characteristics (material, characteristics, dimensions, drawings, etc.) and unit prices/total prices
- Delivery times

- Warranty
- Quality Control Plan of each item attached to the tender.
- Delivery to Portile de Fier HPP 1
- Delivery documents: Invoice, Certificate 3.1/ EN 10204, dimensional, visual, UT and MT inspection reports.

5. Receipt of products

Acceptance in the manufacture of products (FAT) will be carried out in the supplier factory, following the successful execution of all tests and verifications within the quality control plan, verifications and tests of the work, approved in advance by the beneficiary. Consequently, the manufacturer/supplier has the obligation to draw up the Quality Control Plans for each item and to send them to the Buyer for approval, before the start of the execution.

The actual acceptance of the products (SAT) will be carried out on site, after delivery, on which occasion Acceptance Protocols can be drawn up by groups of deliveries (set of bushings, set of fasteners, gaskets/seals, etc.). The acceptance of the products will be carried out, after delivery, on which occasion the Acceptance Protocols can be drawn up. They will accompany the invoices and represent, together with the quality documents received from the Supplier, the elements that confirm the fulfillment of the specified conditions.

The acceptance inspection, carried out by the Buyer, or by the Final Beneficiary, at their headquarters, does not exonerate the Supplier from its responsibilities regarding the quality/guarantee of the conformity of the products delivered with the specified requirements.

Upon acceptance, the Supplier shall make available to the Buyer for delivery to the Beneficiary the documents attesting compliance with the requirements and ensuring the guarantee (Annex 1 and Annex 2 excerpt from the Hidroelectrica Technical Specification no. 142446/05.12.2022 , an integral part thereof.

6. Payment methods and conditions

The Supplier shall issue invoices for the delivered products. Each invoice will have the contract/order number, issuing and due dates of the respective invoice. Invoices will be sent in original to the address specified by the Buyer

Acceptance protocols may be drawn up by groups of deliveries. They will accompany the invoices and represent the elements necessary to make the payment, together with the other supporting documents specified in chapter5 of this technical specification.

The payments in favour of the Contractor shall be made within 60 days from the date of registration of the original fiscal invoices and of all the supporting documents specified in chapter5 of these Technical Specification, Annex 1 and Annex 2.

Annex 1 to the Technical Specification

List of new parts-bushings

1. Bushing Ø96 (billet inner guide bushing) – 1 pc.- Semi-finished goods sheet No.001

Technical conditions of execution:

- execution drawing U-15-400-436 (Annex 1.1 to the Technical Specification, attached)
- CuAl10Fe2-C material, centrifugally cast at high speeds, in a cooled metal mould
- finished state of delivery: raw processed according to the drawing
- quality certificates according to EN 10204
- chemical composition requirements:
Cu: 84 – 87% Pb: 4 – 6% Sn: 9 – 11% Fe: max 0.25% Σme: max.0.5%
Ni: max.1.5% Sb: max 0.35 % Zn: max.2% P: max 0.05%
- final dimensional control according to the drawing
- Visual check

- acceptance according to SR EN 12420

2. Bushing Ø600 (distributor guide bushing) – 1 pc.- Semi-finished goods sheet No.002

Technical conditions of execution:

- execution drawing 2 841 319 089 (Annex 1.2 to the Technical Specification, attached)
- material GZCuPb5Sn/ 2.1170.03 DIN 1716, centrifugally cast at high speeds, in a cooled metal mould
- finished state of delivery: raw processed according to the drawing
- quality certificates according to EN 10204
- chemical composition requirements:
Cu: 84 – 87% Pb: 4 – 6% Sn: 9 – 11% Fe: max 0.25% Σme: max.0.5%
Ni: max.1.5% Sb: max 0.35 % Zn: max.2% P: max 0.05%
- final dimensional control according to the drawing
- Visual check

- acceptance according to SR EN 12420

3. Bushing Ø338 (connecting rod) – 12 pcs. - Semi-finished goods sheet No.003

Technical conditions of execution:

- execution drawing 3 841 319 076A (Annex 1.3 to the Technical Specification, attached)
- material GZCuSn12Pb/ 2.1061.03 DIN 1705, centrifugally cast at high speeds, in a cooled metal mould
- finished state of delivery: raw processed according to the drawing
- quality certificates according to EN 10204
- chemical composition requirements:
Cu: 84 – 87% P: max 0.2% Sb: max 0.2% Fe: max 0.2% Zn: max.1%
Ni: max.2% Pb: 1 – 2% Sn: 11 – 13% S: max 0.05% Σme: max.1%
- final dimensional control according to the drawing
- Visual check
- acceptance according to SR EN 12420

4. Bushing Ø618 (fork) – 6 pcs. - Semi-finished goods sheet No.004

Technical conditions of execution:

- execution drawing 2 841 319 077 (Annex 1.4 to the Technical Specification, attached)

- material GZCuPb5Sn/ 2.1170.03 DIN 1716, centrifugally cast at high speeds, in a cooled metal mould
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204
 - chemical composition requirements:
 Cu: 84 – 87% Pb: 4 – 6% Sn: 9 – 11% Fe: max 0.25% Σme: max.0.5%
 Ni: max.1.5% Sb: max 0.35 % Zn: max.2% P: max 0.05%
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
5. Large window bushing (outer bearing) – 6 pcs.- Semi-finished goods sheet No.006
- Technical conditions of execution:
- execution drawing U-15-300-70 (Annex 1.8 to the Technical Specification, attached)
 - material CuAl11Fe6Ni6, according to SREN 12420:2014
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204
 - chemical composition requirements according to material specification
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
6. Small window bushing (inner bearing) – 6 pcs.- Semi-finished goods sheet No.007
- Technical conditions of execution:
- execution drawing U-15-300-71 (Annex 1.9 to the Technical Specification, attached)
 - material CuAl11Fe6Ni6, according to SREN 12420:2014
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204
 - chemical composition requirements according to material specification
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
7. Guide bush (distribution column) – 2 pcs.- Semi-finished goods sheet No.008
- Technical conditions of execution:
- execution drawing 3 841 358 275F (Annex 1.10 to the Technical Specification, attached)
 - mat.GZCuSn7ZnPb/2.1090.03
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204
 - chemical composition requirements according to material specification
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
8. Bushing Ø300/240x125 (Oil distribution head)– 2 pcs.- Semi-finished goods sheet No.009
- Technical conditions of execution:
- execution drawing 3 841 358 024E (Annex 1.11 to the Technical Specification, attached)
 - material GZCuSn7ZnPb/2.1090.03
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204

- chemical composition requirements according to material specification
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
9. Bushing Ø300/240x125 (Oil distribution head)– 2 pcs.- Semi-finished goods sheet No.010
- Technical conditions of execution:
- execution drawing 3 841 358 984A (Annex 1.12 to the Technical Specification, attached)
 - material GZCuSn7ZnPb/2.1090.03
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204
 - chemical composition requirements according to material specification
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
10. Bushing Ø500/420x150 (Oil distribution head) – 2 pcs.- Semi-finished goods sheet No.011
- Technical conditions of execution:
- execution drawing 3 841 358 025E (Annex 1.13 to the Technical Specification, attached)
 - material GZCuSn7ZnPb/2.1090.03
 - finished state of delivery: raw processed according to the drawing
 - quality certificates according to EN 10204
 - chemical composition requirements according to material specification
 - final dimensional control according to the drawing
 - Visual check
 - acceptance according to SR EN 12420
- **Note.1 All bushings from the above list will be manufactured and delivered with a processing addition on all surfaces of 3mm compared to the final processing quotas in the execution drawings mentioned at each position.**
 - **Note.2 If during the process of roughing and processing at final quotas deficiencies of shape are found, gaps in casting or inclusions of other materials the supplier will execute other semi-finished products at its own expense.**

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2.4 Other initiatives/projects/programs associated with this product purchase,
Not applicable

2.5 General framework of the sector in which the contracting authority/entity operates
Not applicable

2.6 Stakeholders and their role

Main stakeholders: S.H. Porțile de Fier as an electricity producer

Chap. 3. DESCRIPTION OF THE PRODUCTS REQUESTED

The list of requested products, together with the related technical documentation (execution drawings and technical execution conditions) is presented in the Annex to this Technical Specification. The technical conditions of execution are included, as the case may be, in the execution drawings and the technical conditions presented for each component.

Spare parts from the list attached to the Tender Specifications will be delivered in finished condition, except for the set of spare bushings that will be delivered in blank condition, at the shares in the execution drawings except for the set of bushes that will be delivered in accordance with the Note at the end of Annex 1 to this Technical Specification (page 16/16).

The Contractor shall draw up and include in the technical documentation the forms of passports /control bulletins, for the tests performed with and without the presence of the Beneficiary's representatives, which shall record the values obtained in comparison with the values required by the Tender Specifications

The dimensional control shall be performed in accordance with the execution drawing and their tolerances. The forms shall be completed with the values determined during the measurements. Certificates issued under EN 10204 will be in Romanian (for those issued in Romania) and English (for those issued abroad).

3.1 Description of the current situation at the level of the Contracting Entity

In the safety stock of Porțile de Fier I HPP at this moment there are no spare parts of this kind, by this purchase it will be completed as safety stock.

3.2 General objective to which the supply of products contributes

Safe operation of electricity generation capacities without freezing leading to major energy losses.

3.3 Specific objective to which the supply of products contributes

Restoration of the safety stock of spare parts for maintenance works at the upper level of the hydraulic turbines from the Porțile de Fier I HPP.

3.4 Requested products and ancillary operations required to be performed

The spare parts for the hydraulic turbines from Porțile de Fier I HPP covered by these Technical Specification shall be executed (manufactured) by the Contractor according to its own execution technologies, in strict compliance with the technical characteristics and the technical conditions of manufacture and control listed in these Technical Specification.

3.4.1. Required products

Spare parts for the hydraulic turbines of Portile de Fier HPP according to Annex 1 to these Technical Specification

1. Quantity	according to Annex 1 to these Technical Specification
2. Unit of measurement	set (pieces)
3. Delivery place	sh Portile de Fier - Depozit Portile de Fier I, Gura Văii, county Mehedinți
4. Delivery deadline requested	4 months after signing the contract
5. Technical specifications/ minimum functional requirements/ minimum technical conditions of manufacture and control	According to: Technical Specification
6. Extended technical specifications/ functional requirements	NO
7. Minimum Warranty Duration/ Shelf Life	48 months after delivery

3.4.2 Availability

The availability of the supplied products is required to be 24/24h, 7/7days.

3.5 Extensibility/Modernization

Not applicable

3.5.1 Warranty

The products shall be supplied, as the case may be, in finished or blank condition, in accordance with the requirements of the Tender Specifications.

The warranty period is at least 48 months from delivery.

The tenderer must ensure compliance with the technical parameters specified in chapter3 and Annex 1 to these Technical Specification.

3.5.2 Delivery, packaging, labelling, transport and insurance during transport

The delivery of the products will be made on the basis of the successful reception performed in the factory or on site, as the case may be.

The inserted parts will be delivered packed, labelled with identification data, preserved for long-term storage.

The delivery address is: CHE Porțile de Fier I - Calea Timișoarei nr. 2, Gura Văii, Mehedinți county.

Upon delivery, the spare parts will be accompanied by the quality and acceptance documents issued in the factory, listed in chapter5 of these technical specification, the delivery note and the invoice.

The spare parts will be offered and invoiced in the price/piece invoice.

3.5.3 Operations with accessory title, if this is the case

According to the technical execution conditions in the execution documentation and the inspection and test plans.

3.5.3.1 Installation, commissioning, testing

Not applicable

3.5.3.2 Training of personnel for use

Not applicable

The Beneficiary reserves the right to participate in any other tests at any stage of the work.
The Contractor is fully responsible for the executed works.

Chap.5 ACCEPTANCE OF PRODUCTS

Acceptance at the manufacture of products (FAT) will be carried out in the supplier factory following the successful execution of all tests and verifications within the quality control plan, verifications and tests of the work previously approved by the beneficiary. The actual acceptance of the products (SAT) will be carried out on site, after delivery, on which occasion Acceptance Protocols can be drawn up by groups of deliveries (set of bushes, set of fasteners, gaskets/seals, etc.). They will accompany the invoices and represent, together with the quality documents, the elements that confirm the fulfillment of the required requirements.

Upon acceptance, the Contractor shall make available to the Beneficiary the following documents:

- Detailed design

- Quality documentation, including records resulting from the execution of the tests and verifications provided for in the quality control plan, checks and tests

- Declaration of conformity.

- Warranty certificate.

Chap.6 METHODS AND CONDITIONS OF PAYMENT

The Supplier shall issue invoices for the delivered products. The spare parts will be invoiced price/piece, each invoice will have the contract number, the issuance and maturity dates of the respective invoice. Invoices shall be sent in original to the address specified by the Contracting Authority/Entity. Acceptance protocols can be drawn up by groups of deliveries (set of bushings, set of fasteners, gaskets/seals). They will accompany the invoices and are the necessary elements to make the payment, together with the other supporting documents specified in chapter5 of this technical specification.

Payments in favor of the Contractor shall be made within 30 days from the date of registration of the original fiscal invoices and all supporting documents

7. LEGAL FRAMEWORK GOVERNING THE RELATIONSHIP BETWEEN THE CONTRACTING ENTITY AND THE CONTRACTOR (INCLUDING IN THE FIELDS OF ENVIRONMENT, SOCIAL AND EMPLOYMENT RELATIONS)

The tenderer who became the Contractor has the obligation to observe in the execution of the Contract a quality management system according to SR EN ISO 9001:2015, attested by the quality documents underlying the executed works, as well as the compliance with the environmental conditions according to SR EN ISO14001:2015

The tenderer who became the Contractor has the obligation to comply in the execution of the Contract with the provisions of Law 265/2006 on environmental protection amended and Geo 195/2005, amended and supplemented by Geo 114/2007, Geo 164/2008, Law 70/2013, Law 117/2013, Law 226/2013 and Geo no. 164/2008

A tenderer who has become a contractor must comply in the performance of the contract with the applicable environmental, social and labour obligations established by Union law, national law, collective agreements or by the international environmental, social and labour law provisions listed in Annex X to Directive 2014/24.

8. MANAGEMENT/MANAGEMENT OF THE CONTRACT AND REPORTING ACTIVITIES UNDER THE CONTRACT.

The contract manager appointed by the Contracting Authority/entity ensures the management of the Contract, which includes a management component and an administrative component - effective administration of the Contract - and involves the continuous coordination, monitoring and control of all activities and results performed by the Contractor.

During the performance of the Contract, the Contracting Authority/entity participates through the designated representatives in the tests scheduled to be carried out in the factory, in accordance with the provisions of the quality control plan for checks and tests. The Beneficiary shall mention the tests to be performed in the presence of its representatives and has the right to request the inclusion in the test plan of other tests and trials that it deems necessary.

The Beneficiary reserves the right to participate in any other tests at any stage of the work.

The Contractor is fully responsible for the executed works.