



EOI for Manufacturing & Supply of Strainer element for steam strainer

Date: 29.02.2024

Expression of Interest
For
Manufacturing and Supply of “Stainless steel
strip/strainer element(Grade:X8CrNiNb16-13)” for
Steam Turbine Application

EOI No.: BHEL / HERP / E&M / EOI / 29.02.2024

Document No. HERP-EOI-03-2024

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Description

Stainless steel strip (Grade X8CrNiNb1613) is used in the manufacturing of strainer element of steam strainer that is a very critical component of steam turbine. A steam strainer in a steam turbine system serves the purpose of removing solid particles and debris from the incoming steam before it enters the HP and IP turbine. Hence It has to withstand very high pressure (166 Bar) and high temperature(530°C) of steam entering into the steam turbine.

Scope of work:

Scope of work will include the manufacturing and supply of Stainless steel strip (Grade X8CrNiNb1613)/EN10028-7, material number 1.4961 as per BHEL specification HW10779.

Manufacturing:

The steel shall be made in basic electric furnace. Any other process of melting shall be subjected to mutual agreement between manufacturer and BHEL. The stainless steel strip shall be supplied in solution annealed condition.

Note: *Strip shall be joints free. No construction or repair welding is permitted.*

Heat Treatment:

Solution annealing shall be done at 1050-1100°C as per EN10088.

Chemical composition:

C	0.04-0.1	Si	0.3-0.6	Mn	≤ 1.50
P	≤ 0.035	S	≤ 0.015	Cr	15.0-17.0
Nb	10*%C-1.20	Ni	12.0-14.0		

Mechanical property :

Following mechanical properties is required at room temperature:

0.2% Proof stress (N/mm²),Min.	Tensile strength (N/mm²)	%Elongation
200	510-690	≥35



Surface condition:

Surface condition of the strip should be 1E or above as per EN10028-7, Table-6.

Qualification Criteria

The parties meeting the below mentioned technical criteria shall be considered for further development of vendor for "Manufacturing and Supply of Stainless steel strip(Grade:X8CrNiNb16-13)" for Steam Strainer Element as per the BHEL specification **HW10779**.

Technical Criteria:

1. Manufacturing of stainless steel strips typically involves a series of processes that require various machinery and equipment. The specific machinery and equipment required may vary depending on the strip thickness, dimensions, and finishing processes. However, vendor must have following "Plant and machinery" of suitable capacity for the manufacturing of Stainless steel strip:
 - a) **Electric furnace:** The steel shall be made in basic electric furnace. Hence manufacturer must have electric furnace for the melting purpose.
 - b) **Rolling Mills:** A rolling mill is essential for reducing the thickness of stainless steel slabs to the desired thickness for strips. For the manufacturing of Stainless steel strips for steam strainer, Hot rolling mills will be required. Multiple stands and rolls are used to progressively reduce the thickness.
 - c) **Surface Treatment Equipment:** Stainless steel strip will undergo surface treatment processes like pickling and passivation to remove oxides, scales, and contaminants and enhance corrosion resistance.

Equipment for pickling and passivation includes tanks, spray systems, and chemical handling systems.
 - d) **Heat Treatment Furnace:** Stainless steel strips require heat treatment processes, such as solution annealing, to improve mechanical properties or relieve stress. Furnaces with the graph plotter are used for controlled heating and cooling processes.
 - e) **Surface Finishing Equipment:** For achieving specific surface finishes, equipment such as abrasive belt grinders, polishing machines, and buffing machines will be required.

Commercial criteria:

1. The Vendor should be a regular Supplier of Stainless steel strips of same or similar grade and Vendor should have executed at least Three (3) nos. of POs for supply of same or



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similar grade of Stainless steel strip in last 3 years. In support of supply experience, supplier has to furnish the following:

A. At least 3 no. copy of Un-Priced Purchase Orders executed with details as per Table-1.

Table-1

SN	Name of Customer	Detailed Address	Name, Phone no. and email - Id of contact person	Purchase order No.	Date of Supply	Grade	Qty.

B. Test certificate (as given below) for Stainless steel strip for any two of the submitted POs. The submitted test certificate should have co-relation with the POs.


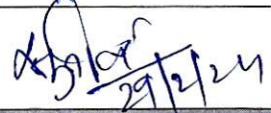
- Chemical composition report
- Mechanical test report

2) Acceptance certificate/dispatch document from customer for any one of the submitted PO.

Selection of Supplier/ Manufacturer / Company:

Based on the information provided under this EOI, the prospective Supplier/ Manufacturer / Company shall be technically shortlisted. The short listed Supplier/ Manufacturer / Company has to participate in BHEL tender inquiry and further will be evaluated on the basis of terms and conditions defined in the enquiry.

Pre-bid clarification meeting can be held with the short listed parties regarding scope, confidentiality requirements and deliverables, physical checking of facilities at vendor works.

Prepared by	Checked and Approved by
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