

## TECHNICAL SPECIFICATIONS AND OTHER ALLIED REQUIREMENTS

SI No.	Description of items	Quantity
PUR/306/NDT/MP/E/2020-21		
1	SUPPLY, INSTALLATION, COMMISSIONING AND TRAINING OF ATTACHEMENT FOR CONDUCTING HIGH TEMPERATURE MECHANICAL TESTS IN THE EXISTING 100kN SERVOHYDRAULIC UNIVERSAL TESTING MACHINE (MODEL: UT-04-0100).	1 SET

### 1. DELIVERY, INSTALLATION, COMMISSIONING AND TRAINING

- 1.1. The ordered goods are to be Delivered, installed, Commissioned within 112 days of receipt of Purchase Order issued by CSIR-CMERI, Durgapur. Installation should be carried out only by expert engineers of Supplier / Manufacturer at Free of Cost basis.
- 1.2. After successful installation, Training of operation of high temperature tests at CSIR-CMERI shall be imparted to two Institutes Scientist / Engineers/Technicians within above mentioned period of 112 days.

### 2. WARRANTY

- 2.1. Warranty for a period of 12 months (one year) must be provided to be effective from the date of successful Installation, Commissioning and Training and final acceptance of the items / equipment at the user's laboratory / Institute.

### 3. PERFORMANCE SECURITY

- 3.1 3 % of the Invoice Value.

### 4. PAYMENT TERM

- 4.1 80% of the contract price of goods [ 80% of the cost of goods and 100% taxes ] shall be paid against delivery and inspection of all the ordered goods at site [ final destination]. Purchaser reserves the right to ask for a joint inspection in presence of Supplier's representatives for verification of the goods delivered.

- 4.2 Balance payment shall be paid within 30 days of delivery, installation, commissioning, training and acceptance of the material upon submission of claim supported by the acceptance certificate issued by the purchase and the Performance Security

5. Bidder has to certify that the rates quoted by them are the same and not higher than those quoted with other CSIR Labs/Instt. Government, public sector or private organization.

## ANNEXURE-I

### Attachments for conducting High Temperature Mechanical Tests in existing 100 kN Servo-hydraulic Universal testing Machine (Model: UT-04-0100, M/s BISS, Bengaluru, India).

1. High Temperature Tubular Split Furnace to be attached with existing 100 kN Servo-hydraulic Universal testing-Machine (Model: UT-04-0100, M/s BISS, Bengaluru, India).

- Single zone Split Tubular furnace
  - Service temperature: 300 to 1000<sup>0</sup>C
  - Heating Rates @ no load: 15<sup>0</sup>C/min
  - Temperature control accuracy  $\pm 2^{\circ}\text{C}$
  - Heating element material: Kanthal
  - Thermocouples: K type
  - Must have a provision to mount high temperature Extensometer / COD gage
  - Top and bottom access holes for inserting grips and fixtures with insulation provision
  - Furnace comes with mounting brackets to mount on the load frame column
  - Suitable for all offered high temperature accessories
- Furnace Controller compatible with existing 100 kN Servo-hydraulic Universal testing Machine (Model: UT-04-0100, M/s BISS, Bengaluru, India). :
- Digital furnace control system with PID Controller
  - Standalone unit
  - Temperature accuracy  $\pm 2^{\circ}\text{C}$

2. High Temperature self-aligning type LCF / HCF grips for conducting high temperature tests These grips must be designed to meet stringent demands on alignment and backlash-free operation as prescribed by ASTM E-606 for LCF testing & HCF testing and must be compatible with existing 100 kN Servo-hydraulic Universal testing Machine (Model: UT-04-0100, M/s BISS, Bengaluru, India)

- Temperature range: Up to 1000<sup>0</sup>C compatible with attached furnace
- Load capacity: 100kN dynamic at ambient temperature
- Mounting cups for threaded specimens of M10 and M12
- Closed loop water cooling unit included

3. Warranty: 1 year for both high temperature furnace and set of LCF/HCF grips.

4. Training: Training of operation of high temperature tests after successful installation must be given to two CMERI officials at CSIR-CMERI, Durgapur.

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