

**Department of Applied Mechanics**  
**Indian Institute of Technology**  
**Hauz Khas, New Delhi - 110016**

**NOTICE INVITING QUOTATIONS**

Dated : **9/12/2014**

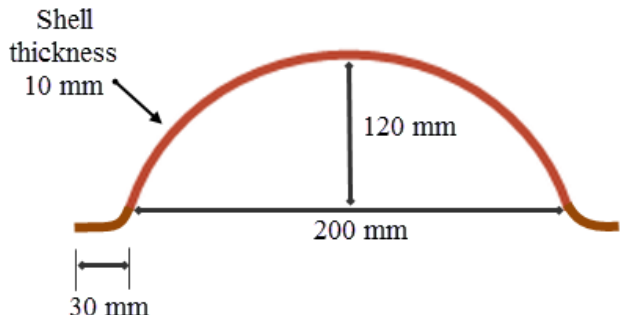
Tender No: **IITD/Applied Mechanics**

Subject : **Purchase of Vacuum Assisted Resin Infusion Mould (Extension of date)**

**Invitation for Tender Offers**

Indian Institute of Technology Delhi invites Bids (Technical bid and Commercial bid) from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM Authorized Dealer for **supply, installation & integration of Vacuum Assisted Resin Infusion Mould** with **three year warranty** from the date of installation of the system as per terms & conditions specified in the tender document.

**TECHNICAL SPECIFICATION:**

Item	Description
<b>THE VARIM ( Vacuum Assisted Resin Infusion Mould )</b>	
<b>I</b>	<p><b>1. Flat laminate Mould:</b></p> <ul style="list-style-type: none"><li>• The size of the mould should be 1000 mm x 1000 mm in which coupons of size 700 mm x 700 mm can be manufactured.</li><li>• It should be able to provide the heating up to 150 °C.</li><li>• Composite Laminate can be made from 1 mm thickness to 30 mm thickness.</li><li>• Mould should be mounted on wheels for easy movement.</li></ul> <p><b>2. Hemispherical mould for composite shell:</b></p> <p>The hemispherical shell to be made should be of internal diameter 200 mm. Shell thickness of atleast 10 mm. The height of shell from top to base should be 120 mm. At base of the shell, an extra horizontal material approximately 30 mm for gripping of shell is also to be provided. Mould should be able to withstand 150 °C.</p>  <p style="text-align: center;">1</p>

Both the above moulds should be vacuum assisted.

### **VACUUM SYSTEM**

- Vacuum pump with atleast 25 mbar capacity
- Clear display for vacuum pressure.
- Atleast four vacuum suction points should be provided at different locations in the Mould.
- It should also include degassing chamber of 20-25 liters for epoxy resin.

### **Heating Control system**

- Mould temperature should be controlled by individual PID based Controller system.
- The Time Vs Temp. data should be monitored by software and stored in data logger.
- Heating control system should have ramp up's adjustments.
- A provision of 8 channel data logger for measurement of temperature at 8 different locations on Specimen.
- A data acquisition system with similar: corei5 processor, 1 TB hard disk, 4 GB ram, 15 inch LED monitor, UPS with 30 minutes backup, or better options.

### **Interchange-ability**

- Vacuum Pump should be interchangeable.
- Heating system Data logger should be interchangeable.
- The Vacuum System should be flexible to use for other non mould application by simply detaching the vacuum connection from coupon mould.

### **Consumable & Raw Material requirement** (for approx.. 15 composite panels 700 mm x 700 mm)

#### **\* All consumable should be Epoxy Compatible**

- Infusion Grade Epoxy Resin system (Resin + Hardener) (10:1 ratio) – Total 30 Kg hardener (in three installments of 10 kg each after every 3-6 months on request), equivalent ratio of hardener at every installment.
- Stitched Glass Matt With 800 GSM to 1200 GSM - 30 Kg
- Mould Releasing Agent – 1 Liter
- Nylon Vacuum Bag 75 Micron -2 Meter width – 30 m long
- Peel ply ( Nylon Fabric Epoxy Compatible 85 GSM ) - 50 Sq. Meter
- Breather cloth 140 GSM – 50 Sq. Meter
- Resin Transportation Mesh - 50 Sq. Meter
- Perforated Release Film – 50 Sq. Meter
- PVC Transparent Hose 10mm ID – 20 Meter
- PVC spiral cut tubes 10mm ID – 50 Meter
- Butyl - Sealant Tape - 100 Meter

### **Other Accessories Required**

- Diamond cutter with required fixtures for cutting specimens from manufactured laminates.
- 50 pair surgical gloves for epoxy handling and glass fiber cutting
- 50 mask & 5 safety goggles.
- Working manual and procedure in hard copy and pdf format.

**II**

Installation of equipment with demo trial for making 2 to 3 composite plates and training 2 students and one lab staff of the Institute.

## Terms & Conditions

Sl.No.	Specification
1.	<b>Due date:</b> The tender has to be submitted before the due date. The offers received after the due date and time will not be considered.
2.	<b>Preparation of Bids:</b> The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions.
3.	<b>Opening of the tender:</b> The technical bid will be opened and will be examined by a technical committee which will decide the suitability as per our specification and requirement. The financial offer/bid will be opened only for the offer/bid which technically meets all our requirements as per the specification, and will be opened in the presence of the vendor's representatives subsequently for further evaluation.
4.	<b>Acceptance/ Rejection of bids:</b> The Committee reserves the right to reject any or all offers without assigning any reason.
5.	<p><b>Pre-qualification criteria:</b></p> <p>(i) Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.</p> <p>(ii) An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well.</p> <p>(iii) OEM should be a reputed Company.</p> <p>(iv) Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.</p> <p>(v) Certification is required regarding previous supply of equipment to other institutions. The vendor must provide contact addresses of their previous customers. The current customer will contact the respective institution for verification.</p>
6.	<p><b>Prices:</b></p> <p>The price should be quoted in Indian Rupees and must include all packing and delivery charges, taxes and duties. However the percentage of taxes &amp; duties shall be clearly indicated.</p> <p>The price should be quoted without excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand.</p>
7.	<p><b>Notices:</b> For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.</p> <p><b>Purchaser: Dr. Vikrant Tiwari,</b>  <b>Department of Applied Mechanics.</b>  Indian Institute of Technology  Hauz Khas, New Delhi - 110016.</p> <p><b>Supplier:</b> (To be filled in by the supplier)</p> <p>_____</p> <p>_____</p> <p>_____</p>
8.	<p><b>Training</b></p> <p>The Supplier is required to provide training on training to the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.</p>
9.	<p><b>Installation &amp; Demonstration</b></p> <p>The supplier is required to done the installation and demonstration of the equipment within one month of the arrival of materials at the IITD site of installation or provide all necessary guidelines</p>

	for installations.
10.	<b>Warranty:</b> 1. Warranty period shall be 36 months possibly comprehensive warranty from date of installation of Goods at the IITD site of installation. <b>The warranty should be comprehensive on site.</b> The maintenance charges (AMC) if any under different schemes after the expiry of the warranty should also be mentioned.
11.	<b>Payment:</b> 100% payment shall be made by the Purchaser against delivery, inspection, successful installation, commissioning and acceptance of the equipment at IITD in good condition and to the entire satisfaction of the Purchaser.
12.	<b>Compliance certificate:</b> This certificate must be provided indicating conformity to the technical specifications.

