Official Mississippi State University Logo


# INVITATION FOR BIDS OFFICE OF PROCUREMENT & CONTRACTS

## INSTRUCTIONS FOR BIDDERS

* 1. Sealed bids will be received in the Office of Procurement & Contracts, Mississippi State University, for the purchase of the items listed herein.
  2. All bids must be received in the Office of Procurement & Contracts on or before the bid opening time and date listed herein. Delivery of bids must be during normal working hours, 8:00 a.m. to 5:00 p.m. CST, except on weekends and holidays when no delivery is possible.
  3. Bidders shall submit their bids either electronically or in a sealed envelope. To submit electronically, follow the instructions below. Bids CANNOT be emailed.
     1. Sealed bids should include the bid number on the face of the envelope as well as the bidders’ name and address. Bids should be sent to: 245 Barr Avenue, 610 McArthur Hall, Mississippi State, MS 39762.
     2. At this time we only accept non-ITS bids electronically. For electronic submission of bids, go to:portal.magic.ms.gov.   
        and use the RFX number on the next page as your reference number.
  4. All questions regarding this bid should be directed to the Office of Procurement & Contracts at 662-325-2550.

## TERMS AND CONDITIONS

* 1. All bids should be bid “FOB Destination”
  2. Bidders must comply with all rules, regulations, and statutes relating to purchasing in the State of Mississippi, in addition to the requirements on this form. General Bid Terms and Conditions can be found here: <https://www.procurement.msstate.edu/procurement/bids/Bid_General_Terms_May_2019_V2.pdf>
  3. Any contract resulting from this Invitation for Bid shall be in substantial compliance with Mississippi State University’s Standard Contract Addendum: <https://www.procurement.msstate.edu/contracts/standardaddendum.pdf>

### Bid Number/RFX Number: ****23-120/RFX #3160006251**** Opening Date: ****November 7, 2023 at 2:00 p.m.**** Description: ****RTM Injection System for Radium RTM Workcell****

#### Vendor Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Vendor Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Days the Offer is Firm: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Authorized Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| **Item** | **Quantity** | **Description** | **Unit Price** | **Total Price** |
| --- | --- | --- | --- | --- |
| 1 | 1 | RTM Injection System for Radius RTM Workcell |  |  |

# 1.0 Scope

This equipment specification describes the requirements for a resin injection system for a Radius resin transfer molding (RTM) workcell.

# 2.0 Applicable Documents

ACI Documents

N/A

Customer Documents

N/A

Industry Specifications, Standards and Handbooks

N/A

# 3.0 Requirements

3.1 Quotation Requirements

The Supplier shall notify Mississippi State University via email or direct contact of any concerns, objections, and/or comments relative to this specification. The Supplier shall provide mechanical and electrical prints of a similar machine produced by the Supplier, if possible. These documents will remain property of the Supplier.

This specification will not cover all the design details or unique features of the equipment; therefore, the Suppliers quotation shall fully describe the proposed equipment and shall provide the following information:

* A complete equipment specification, with notes on special or optional features, equipment drawings or photographs, proposed control system details, proposed operator panel layout, and any other data that permits a full technical evaluation.
* The quotation shall contain a total price for the equipment as required to meet this specification, with any exceptions noted.

3.2 General Requirements

An overall responsibility shall be accepted by the Supplier for the design, manufacture, performance, and reliability of the equipment as defined in this specification. This responsibility shall provide for a turn-key installation and service during the warranty period.

The equipment, including all auxiliaries, shall be arranged so that filters, access panels, doors, lubrication reservoirs, etc., are located for ease of maintenance service and housekeeping. Any adjustments and service, which fall into the category of normal operator functions, shall be possible without special tools, the removal of bolted-down covers, assistance from any maintenance personnel, as well as being accessible from a suitable working surface.

Main electrical disconnect and all utility shutoff valves shall be supplied by the Supplier and shall be accessible at floor level. There shall be only one source of supply for each utility required. All energy sources shall be equipped with lockable energy isolation devices.

Chemical Products

The Supplier shall submit an SDS (Safety Data Sheet) for any chemical products that are to be shipped with the equipment. Equipment and chemical products included in the order shall not ship without local Environmental Health and Safety review and approval. Examples include lubrication and hydraulic oils, coolant, cleaning fluids, touch-up paint and grinding media.

Environmental Health and Safety

Supplier/Manufacturers representatives or sub-contractors sent to Mississippi State University by the Supplier/Supplier must have completed the required OSHA training and follow the applicable OSHA requirements found in 29 CFR 1910 or 29 CFR 1926. No PPE is required at the Mississippi Advanced Composites Training Facility, but safety shoes and safety glasses are strongly suggested on the shop floor during installation.

NEC 2005 NFPA 70 National Electric Code requires field marking that shall warn electrical workers of potential electrical arc flash hazards when working on the equipment when power is present. All equipment containing electrical control panels shall be considered to have an arc flash hazard risk category of “2 or less”. It is the responsibility of the supplier to ensure that the equipment shall meet this requirement.

All live components located inside enclosures, junction boxes, etc. such as: disconnect switches, fuses, starters, terminal blocks, and any other component operating at 50 volts RMS AC or 60 volts DC or more shall be guarded against contact with either Lexan or plexiglass shielding. The protective shield shall have small holes to allow maintenance personnel to probe the component without having to remove the shielding for trouble shooting the component, as applicable per NFPA 79.

Utilities and Facility

The proposed machine will be installed at the Mississippi Advanced Composites Institute.

The supplier must clearly document the minimum utility requirements to support the proposed machine.

3.3 Machine Requirements

The proposed injection system must, to the best one’s ability, meet or exceed the following requirements:

* Ability for two-component injection and single-component injection.
* Automated heating, mixing, and degassing on the individual resin components. It is desired to degas both components simultaneously.
* Capability for heated injection, typically heating the individual resin volumes to ≥ 240 °F. The system must control the temperature within the entire injection system, preventing any cold zones during the injection pathway.
* Automated purging for testing and priming of the system.
* Injection pressures of 160 psi or more. The ACI focus is for compression-RTM, therefore the injection pressure needs to allow for this.
* Injection flow rates of 1,000 cc or more.
* Total resin quantity of part A and part B to be 20 L or more.
* The injection system can be new or refurbished but the system must include an equivalent to new warranty if the system is refurbished.
* Resin mix ratios from 1:1 to 5:1.

It is suggested to include the following for the resin injection system:

* Full integration of the injection system into the RTM Workcell. The parameters possibly controlled by the RTM Workcell are the temperature, pressure, flow rate, and vacuum. The data must be able to be exported.
* Safety interlocking preventing injection if the mold clamping pressure is below the programmed pressure.
* Ability to control multiple resin recipes.
* Future capability for Industry 4.0 integration within the RTM Workcell.

3.4 Guarantee and Warranty

The Supplier shall warrant all equipment in this specification to be free of defects in material and workmanship, and be in conformity with the requirements of this SOW for a minimum of 1 year, (12 months), from the date of final acceptance at the Purchaser’s plant.

3.5 Documentation

All documentation shall be forwarded to the Purchaser upon shipment of the equipment to the Purchaser’s plant. All documentation shall be in English. Documentation may be digitally delivered and should include at a minimum the following documentation for the subject equipment:

* Electrical, electronic, mechanical, pneumatic, process, and lubrication diagrams/schematics.
* An offline copy of the executive software required to run the machine.
* Any manuals relating to the drives, CNC control, etc.
* Manual shall contain a listing of the machine mechanical, electrical, pneumatic, and process components used on the machine. All component literature that comes with the component shall be supplied.
* A parts list indicating all the commercial part numbers and description.

Components that require “Support Software” to operate them shall have the necessary software package and the associated hardware supplied that is necessary to operate the component. All necessary information shall be provided with the Machine Documentation Package to allow Maintenance Personnel to troubleshoot the component if required.

3.6 Shipping

The Supplier shall be responsible for transporting the equipment to the Mississippi Advanced Composites Institute. The Supplier shall be responsible for ensuring that the equipment is properly covered, blocked, and secured for transportation. The Supplier shall provide a field service engineer, at no additional charge to the Purchaser, to install and qualify the equipment purchased.