

Notice Inviting Quotations for Supply and Installation of Full Acoustic Anechoic Chamber

Due Date: 14th February 2013, 4:00 pm

Sealed quotations are invited for the supply and installation of full acoustic anechoic chamber. The technical and commercial bids must be enclosed in two separately sealed envelopes, marking as "Technical bid" and "Commercial bid" on the respective covers. Both the envelopes should be put in a common sealed envelope with the heading "Bid for Acoustic Anechoic Chamber". The minimum required specifications are as follows:

1. Full acoustic anechoic space should either have ambient noise level below 22 ± 2 dBA or provide noise level attenuation of 48 dBA from the ambient noise level outside the chamber, i.e., STC rating 48 through all walls, ceiling and base.
2. The chamber should provide effective free-field conditions above 150 Hz as per ISO 3746 and ANSI 12.35 1990 (R1996) testing standards.
3. The outer dimensions of the chamber will be 4600mm (L) x 4300mm (W) x 3320mm (H).
4. The inner dimensions (working space) of chamber must be at least 3000mm (L) x 2700mm (W) x 1700mm (H).
5. The outer structure of chamber must be 1 Grade CRCA steel with powder coating of 80 micron thickness according to IS standards, using seven-tank process.
6. The cross-section of the chamber walls and roof from outside to inside should consist of:
 - i) 1.4 mm or more CRCA steel,
 - ii) 5 mm acoustic damping layer of polymeric membrane,
 - iii) 50 mm glasswool/polyester fibre/rockwool absorber of density $96-120 \text{ kg/m}^3$,
 - iv) 4 mm carbon alloy sheet,
 - v) 50 mm glasswool/rockwool of density $96-120 \text{ kg/m}^3$.
 - vi) 40 mm closed cell Melamine slab,
 - vii) 0.6-0.8 mm perforated GI sheet as per JIS G3302 with 40-45% perforation of hole diameter between 3.5 and 7 mm,
 - viii) Fibroid tissue paper lining of density 1000 gsm,
 - ix) 9 mm marine plywood,
 - x) 600 ± 2 mm acoustic anechoic wedges of open cell PU material with density 32 kg/m^3
7. The cross-section of the floor from the outside to inside should consist of:
 - i) 1.4 mm or more CRCA steel,
 - ii) 5 mm acoustic damping layer of polymeric membrane,
 - iii) 50 mm glasswool/polyester fibre/rockwool absorber of density $96-120 \text{ kg/m}^3$,
 - iv) 4 mm carbon alloy sheet,
 - v) 50 mm rockwool of density $96-120 \text{ kg/m}^3$,
 - vi) 9 mm marine plywood,
 - vii) 600 ± 2 mm acoustic anechoic wedges of open cell PU material with density 32 kg/m^3 ,
 - viii) Air gap of at least 100 mm,
 - ix) MS grill with squares not greater than 50 mm x 50 mm and of 12 mm thickness MS channel to accommodate load of persons, table and equipment commensurate with the size of the chamber.
8. Acoustic door of 1200mm width with single leaf swing hinge type with same cross-section as walls and including acoustic anechoic wedges. There should be neoprene air-tight gasket and heavy duty locking mechanism from outside and inside.
9. Provision of vision panel on the acoustic door with 450mm x 450mm area, and stair-case for entry.

10. Provision of low-noise temperature and humidity control system equivalent to 1.5 T load capacity with SPL less than 35 dBA with digital display of these parameters. There should be acoustically treated louvers on air-circulation vents for maximum dissipation of sound energy.
11. Distributed electrical wiring to be provided inside the chamber with provision of 3 industrial sockets/power points and 3 no. distribution boards, and 2 no. emergency exit lights. All electrical power should be properly grounded with power sockets and MCBs. Cable vents should be properly sealed.
12. Provision of lighting with proper explosion proof halogen lamp having luminous intensity upto 100 LUX.

Notes:

1. Technical Bid must include complete drawings of the chamber with proposed layout for electrical wiring, lighting points etc. and of the cross-sections of the walls/roof and floor.
2. The vendor may add additional absorbing layers of same/other material if it is required to achieve the mandatory acoustic parameters given in item 1 of specifications list above, subject to adherence with the outer and minimum inner dimensions of the chamber.
3. The vendor must have supplied and installed at least 1 acoustic anechoic chamber with STC rating of 48 or better as required. Compliance with this requirement along with documentary proof should be given in the Technical Bid.
4. Supplier is required to visit and inspect the room where the chamber is to be installed for tapping electrical points, rework on false ceiling and any other work that the vendor may require. Compliance of this requirement of pre-bid site visit must be included in the Technical Bid. Appointment for the visit may be fixed by phone/email with the contact details given below.
5. The vendor must demonstrate compliance with the acoustic parameter requirements inside the chamber after installation.
6. Technical compliance with the specifications above must be given for each item in the Technical Bid.
7. The commercial bid must be submitted in Rupees and must include all charges for supply, room preparation (including tapping of electrical points, rework on false ceiling etc.) and installation of the chamber at the Indian Institute of Technology, Delhi, India. Applicable taxes may be explicitly mentioned.
8. The quotation must have a validity of at least three months.
9. The system should be covered with 1 year of warranty.
10. Supplier must enclose photocopy of PAN/TIN of the company.
11. The work execution must be completed within 5 weeks of placement of supply order.
12. Earnest money draft of Rs. 1.0 Lakhs to be deposited in favour of Registrar, IIT Delhi, that will be refunded / forfeited in case of successful execution / default in execution after taking supply order, and shall be refunded in case vendor is not selected for supply order. **Draft must be enclosed in the Technical Bid.**
13. Advance payment is not allowed. 100% payment shall be made on successful installation.
14. The Institute reserves the right to accept or reject any or all of the quotations without assigning any reasons.

The quotation must mention “Bid for Acoustic Anechoic Chamber” on the outer envelope and should be submitted by 4:00 pm on 14th February 2013 to the following:

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Prof. I. N. Kar
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