

**GOVERNMENT OF INDIA
BHABHA ATOMIC RESEARCH CENTRE
CHEMICAL TECHNOLOGY DIVISION**

Ref : ChTD/NK/2022/371

Date : 19/04/2022

Tender No : BARC/ChTD/NK/2022/371
Due Date : 02/05/2022

Sealed quotations are invited for and on behalf of the president of India by Head, ChTD/BARC for the work as described below.

Name of Work : Supply of Components which are EDM Wire Cutting of Ceramic Rings as per attached technical specification.

1. Qualifying Criteria for Bidders :

1.1 The firm must have fabricated or supplied BARC/DAE same or similar materials with work order/ purchase order copy and satisfactory completion certificate from the user. The firm should also provide details of the fabrication method, the facilities available with them, etc.

1.2 Interested bidders having necessary infrastructure shall quote for this tender, providing all necessary details in the quotation.

2. The quotation envelope shall be superscribed with description of the job, tender ref no., due date, party's name and address.

3. Quotations should be submitted on printed letter head indicating GST registration no. and PAN no. of the firm. Computer generated quotation is not valid.

4. The price quoted shall be inclusive of GST(5%) and shall be payable by the contractor and BARC will not entertain any claim whatsoever in this respect.

5. The complete quotation shall reach the following address on or before the due date as mentioned above by registered post/speed post through Indian postal service by 02/05/2022 by 16:00 Hrs

The Head , Chemical Technology Division

Bhabha Atomic Research Centre,

Trombay , Mumbai - 400085

Kind Attention : Nishith Kishore

6. The Quotations will be opened on the next working day i.e. 04/05/2022 in ChTD Office, BARC.
7. Validity of offer : Price should be valid throughout the contract period. Minimum validity period of vendor's offer shall be 60 days from the due date.
8. Offer of firm : Offer of those firms, who do not submit their quotation as per the details given in the technical specification and incomplete quotation in any respect shall not be considered.
9. Work Completion Period : 6 months after confirmation of order.
10. Minor alteration/addition of the job as per site requirement shall be accepted by the vendor without adding any extra cost.
11. Penalty : Penalty at the rate of 1/2% per week of the total cost (max10%) or as applicable will be charged if the job is not completed within the specified time without valid reasons, as applicable.
12. Inspection & Testing: The job will be done in the supervision of departmental representative up to his/her satisfaction.
13. Payment : No advance/part payment will be made to the vendor. Payment(100%) will be made(throughECS) by within 3-4 weeks after satisfactory completion of works at our site. Party should submit the original bill along with Advance Stamped Receipt, Guarantee Certificate and required documents of nationalized bank for ECS payment. PAN/TIN number is compulsory on the bill for release of the payment.
14. Income Tax : Income Tax @ 2% and GST TDS @ 2% shall be deducted from vendor's bill.

Nishith Kishore

वैज्ञानिक Nishith Kishore
Scientific Officer, ChTD
रसायन प्रौद्योगिकी प्रभाग
Chemical Technology Division
भा.प.अ. केन्द्र/भारत सरकार
B.A.R.C. / Govt. of India
मुंबई/Mumbai - 400 085.

TECHNICAL SPECIFICATION

EDM WIRE CUTTING OF CERAMIC RINGS

1. SCOPE

1.1. This specification establishes the requirements for Collection of FIM, EDM wire cutting, grinding, inspection, packing and safe delivery of various parts as per our drawings and specification from free issue material. (herein after called as Components).

Supply of 360 Nos. of ceramic rings consisting of components as detailed below:

Sr. No.	Component Name	Size	Quantity
1	Ring - 1	50X60X12mm	180 Nos.
2	Ring - 2	66X76X12mm	180 Nos.

1.2. Above components shall be made from 90 nos. of free issue material (FIM) rings, as follows.

FIM ring details

Sr No.	Size	Component	Quantity
1	50X76X25mm	Raw Material - Ceramic Ring	90 Nos.

2.1. Applicable Documents and Drawings:

Note:1. The latest issues of the documents listed below constitute a part of this specification to the extent specified herein. In the event of certain requirements of the specifications, drawing or data listed below conflict, the decision will be at the discretion of the purchaser.

2.2. Drawing No.

Sr. No.	Applicable drawing	Component Name	Application
1	A4-ChTD-CDS-029-RO	Ring - 1	Finish Part
2	A4-ChTD-CDS-187-RO	Ring - 2	Finish Part

3. Free Issue Material:

3.1 Free Issue material shall be unmagnetized Ceramic ring grade SmCo5 of size 50IDX76ODX25 mm.

3.2 The cost of free issued material shall be Rs.10,000/- for one ring

3.3 Contractor shall take an insurance policy, at his cost to cover the free issue material. The insurance policy shall,

(1) Cover the full value of free-issue material.

(2) Shall cover losses, damages to purchaser's material due to fire, theft, burglary, riot, strike, civil commotion etc.

(3) Shall be valid till the date of final delivery of finished components.

(4) Shall include purchaser's name as beneficiary.

3.4 Contractor shall make his own arrangement to collect free issue material, with prior information, from CEL-5, BARC, Trombay, Mumbai-400085.

3.5 An account of free-issue material shall be kept. Copy of material balance sheet shall be submitted periodically.

3.6 Rejection allowance: - The free issue materials mentioned above is specially processed ceramic rings. It shall be utilized with extreme care in view of its rare availability and high cost. Wastage and rejection shall be maintained at the bare minimum. In case the wastage exceeds 2% for EDM wire cutting and another 4% for grinding over the drawing requirements, the full cost of free issue materials wasted shall be recovered from the supplier at the rate indicated above. These rejection rates cannot be interchanged.

4. General description and requirements of the item:-

4.1 General surface finish of 1.6 μm or better must be achieved all over unless otherwise specified.

4.2 The surfaces if marked N6, shall have a roughness value Ra of 0.8 μm or better. These surfaces shall be free of scratches, tool marks, dents etc. Such surfaces shall also be protected properly during subsequent operations if any, inspection, storage and transportation with extra care.

4.3 Geometrical tolerances, surface finish, concentricity etc. must conform to those mentioned in the drawing.

4.4 Dimensional/geometrical tolerances wherever not specified, general tolerances as per IS 2102 (fine) shall apply.

4.5 All sharp corners shall be maintained. This is very important and critical requirement for these components. The vendor has to take extreme care during handling the components.

4.6 All dimensions shown in the drawing are as measured at a reference room temperature of 20 degree Celsius. Hence care shall be taken to incorporate appropriate corrections for thermal expansion or contraction during manufacturing and inspection depending on the room temperature.

5. Manufacturing.

5.1 The machining process selected shall be such that the components shall have required concentricity, surface finish and other dimensional tolerances.

5.2 The finish-machined components shall be conforming to our above said drawing, in all respects.

5.3 The manufacturer shall take utmost care in handling the rings to protect the form any kind of surface damage or breakage.

6. Inspection, Marking and reports.

6.1 Quality Assurance plan

6.1.1 A detailed quality assurance plan in the line with this specification shall be submitted and the same shall be approved by the purchaser before commencing the manufacturing activities.

6.1.2 The contractor shall start the activities only after the purchaser or his representative's approval of the proposed QAP (quality assurance plan).

6.2 Inspection

6.2.1 The vendor or his authorized representative shall carry out 100% inspection at all stages of manufacture to ensure that the workmanship, dimensions and other geometrical features are conforming to the specified requirements. Reports of inspection in format acceptable to the purchaser shall be prepared and offered to the purchaser's authorized representative at the time of purchaser's inspection.

6.2.2 Only items found acceptable by the vendor shall be offered for purchaser's inspection.

6.2.3 All parts in the group shall be offered for inspection in batches of full sets

6.2.4 Dimensional Inspection

6.2.4.1 The vendor or his authorized representative shall carry out inspection of all dimensions for 100% of the items using standard inspection procedures acceptable to the purchaser.

6.2.4.2 Vendor shall use suitable inspection gauges, instruments and comparators designed and made to relevant IS standard for inspection. The calibration of instruments and gauges has to be made at a reputed labs and a reference has to be kept with them for the same.

6.2.4.3 All GO and NOGO gauges shall be done from 'standard gauge manufacturer conforming to IS 3455.

6.2.4.4. For dimensions and forms having tolerances of 50 microns or less special comparators with dial gauge of suitable least count shall be preferred.

6.2.4.5 Measuring instruments when used for inspection shall have a least count better than 10% of the corresponding dimensional tolerance.

6.2.4.6. All gauges comparators instruments shall be approved from the purchaser before their actual use on the job.

6.2.4.7 An identical set of inspection gauges and comparators used for inspection of the part shall be given to the purchaser free of cost, which shall be used as a reference for site inspection.

6.2.4.8 Visual Inspection shall be followed by DYE Penetrant test for surface crack in the ground rings shall be carried out in presence of purchaser's representative.

6.2.4.9 All the items after the final machining shall be visually inspected for any scratches, dent marks, cracks, folds, other material defects, damages or any other surface irregularities.

Surface Finish

6.2.4.10 Surface marked N6 has to be checked with suitable roughness testing instruments and a report generated has to be enclosed with the inspection report.

6.3. Reports

6.3. 1. The vendor shall prepare inspection reports for each component with the serial number after their inspection, as per the format agreed.

6.3.2. The report shall contain all dimensions and geometrical features as shown in the drawing. Where instruments are used for inspection, absolute values as measured may be indicated.

6.3.3 The vendor shall prepare 3 copies inspection reports for submission to the purchaser.

6.3.4 Correspondence to components and reports shall be maintained.

6.3.5 The vendor shall inform for purchaser's inspection after his inspection report is ready. The purchaser's representative shall cross check the inspection reports for their dimensional conformance to the drawing and correspondence to the components. In case of satisfactory results, he shall issue necessary inspection memo authorizing the vendor to dispatch the parts.

6.3.6 Purchaser or his authorized representative shall be permitted free access to the vendor's or his sub-contractor's premises at all reasonable times for the purpose of inspection at all stages of manufacture of the parts.

6.3.7 Purchaser or his authorised representative shall be given full assistance in the form of tools, gauges, instruments, skilled manpower etc., to facilitate inspection. .

6.3.8 Purchaser shall be at their liberty to specify additional inspection procedures if felt necessary or change the one being used, to ascertain the conformance of the parts with this specification end drawings.

6.3.9 In addition to the pre-dispatch inspection at 'the vendor's premises by the purchaser, these parts are also subject to a final inspection by the purchaser at BARC, Mumbai before the parts are taken up for assembly. The vendor shall rectify or replace free of cost, any rejections during this final inspection which shall be intimated as and when this final inspection is completed.

7. Preservation &Packaging:

7. 1 Packaging:-

7.2 The items shall be packed individually in dust free condition with plastic bags.

7.3 Items may be further packed in individual moulded thermocole boxes in a manner that will prevent any damages to the component.

7.4 Sound packing material suitable to the size and weight of contents shall be used.

8. Delivery:-

The items after inspection and acceptance shall be delivered to CTD STORES BARC MUMBAI 400085.

Delivery Schedule : Delivery schedule will be restricted to 6 months from the date of placement of P.O.

9. Details of fabrication facilities, Inspection Facilities and Previous Experience.

Details of precision machining and fabrication, MSLD, Clean room, hydro testing facilities suitable for long components, please list the details like type, make & model, size, year etc.

Inspection facilities: - Please give list of inspection grade instruments and tools available with details such as type, make, model, range, least count etc.

Previous experience: - Highlight your experience in precision machining jobs involving comparable size, geometry and tolerances. Give details of purchase order reference, clients' name, address & telephone number, brief description of the job with sketch, and date of completion. Have you done any precision machining job for IREL or any other DAE units? If so please give details.

A brief outline of the fabrication, machining and inspection plan envisaged, for ensuring the specified requirements.

10.0 : Confidentiality, Restricted Information, Prohibition against use of BARC's name:

10.1: Confidentiality

10.1.1: No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any information identified as "proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

10.1.2: This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by the party with equal force.

10.2: Restricted information:

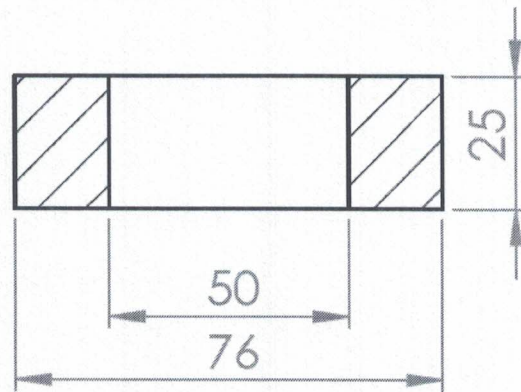
Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under section 5 of the Official Secret Act, 1923.

Any contravention of the above mentioned provisions by any supplier, sub-contractors, consultants, advisers or the employees of a supplier would invite penal consequences under the aforesaid legislation.

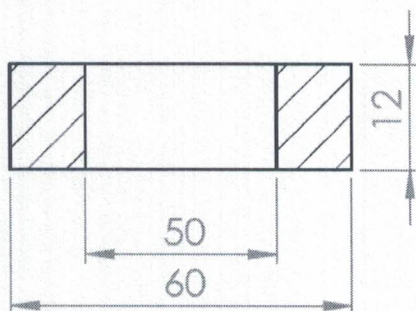
10.3 Prohibition against use of BARC's name:

The supplier, sub-contractors, consultants, advisers or the employees engaged by the supplier shall not use BARC's name for any publicity purpose through any public media like press, radio, TV or internet without the prior written approval of BARC.

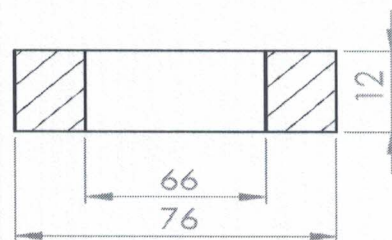
Raw Material - Ceramic Ring

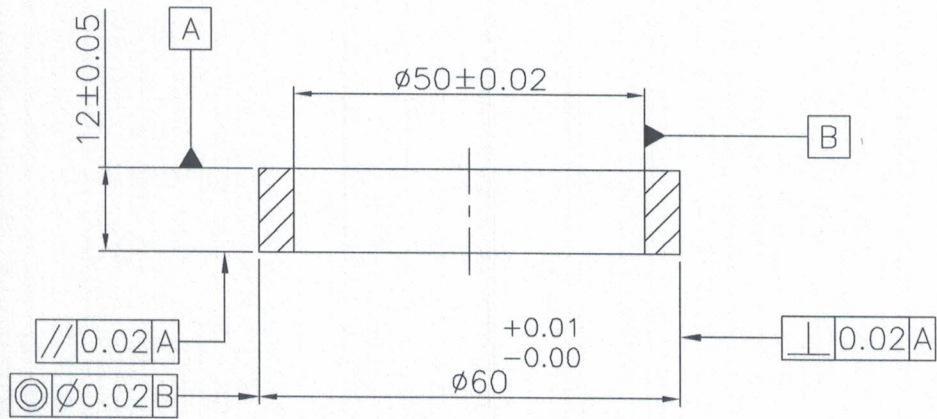


Ring - 1

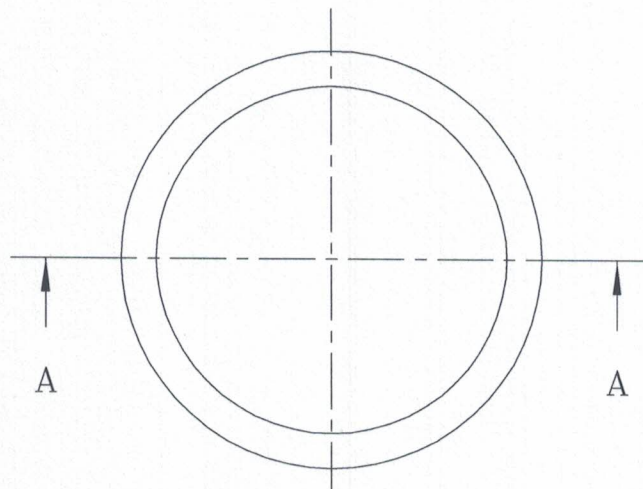


Ring - 2





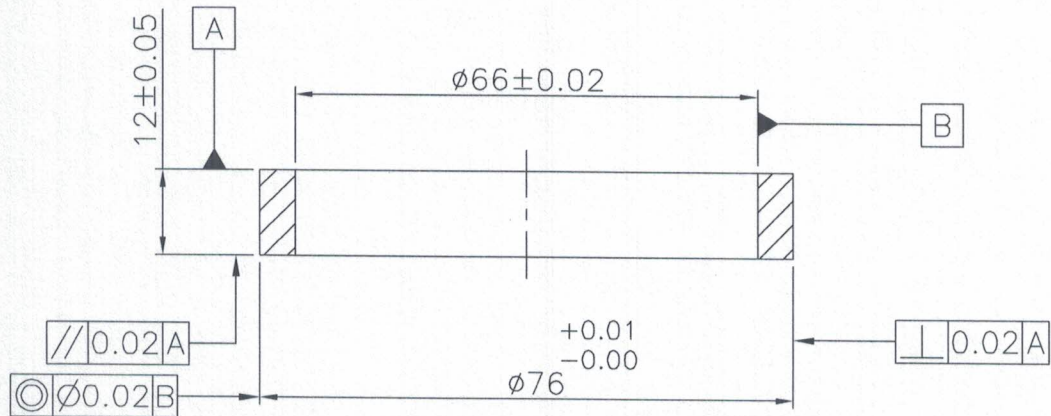
SECTION 'A-A'



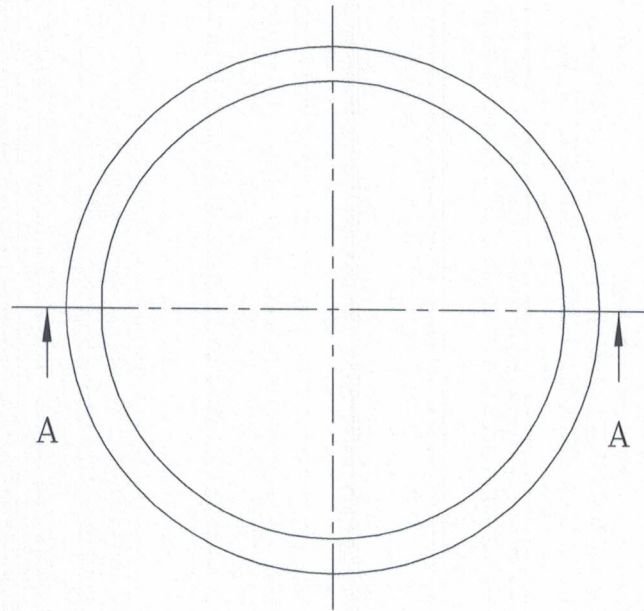
1. ALL DIMENSIONS ARE IN MM.
2. GENERAL TOLERANCE AS PER IS 2102 PART-I (FINE).
3. ALL SHARP EDGES TO BE REMOVED TO 0.5R

MATERIAL: CERAMIC RINGS (GRADE SmCO_5)

DRN AAJ 14/5/19	TITLE:	APP'D.
DRG.CHK'D.	INNER MAG (G7) <small>GOVERNMENT OF INDIA</small> BHABHA ATOMIC RESEARCH CENTRE <small>CHEMICAL TECHNOLOGY DIVISION</small> <small>CHEMICAL TECHNOLOGY GROUP</small>	PROJECTION.
DES'D.		SCALE:
DES'D CHK'D.		DRG.NO. A4-ChTD-CDS-029-R0
		REVISION NO.



SECTION 'A-A'



1. ALL DIMENSIONS ARE IN MM.
2. GENERAL TOLERANCE AS PER IS 2102 PART-I (FINE).
3. ALL SHARP EDGES TO BE REMOVED TO 0.5R

MATERIAL: CERAMIC RINGS (GRADE SmCO_5)

DRN AAJ 18/4/22	TITLE:	APP'D.
DRG.CHK'D.	OUTER MAG (G7) GOVERNMENT OF INDIA BHABHA ATOMIC RESEARCH CENTRE CHEMICAL TECHNOLOGY DIVISION CHEMICAL TECHNOLOGY GROUP	PROJECTION.
DES'D.		SCALE:
DES'D CHK'D.		DRG.NO.
		A4 -ChTD-CDS-187-R0
		REVISION NO.