

TECHNICAL SPECIFICATION FOR Polycarbonate Seals for Energy Meters

1. **Scope of Supply:** This specification covers design, manufacture, testing, supply and delivery of polycarbonate (here after referred as “seals”). It is not the intent to specify completely herein all the details of the design and construction of material. However the product shall conform in all respects to high standards of engineering, design and workmanship and shall be performing in continuous commercial operation in manner acceptable to the purchaser. The offered material shall be complete in all aspects so as to be used for its intended purpose.
2. Seals should be Anchor type tamper evident and should be made of Polycarbonate with ultra violet additive and should not be affected by boiling water and acid.
3. The seals should withstand temperature upto 147° C.
4. Seal should be available in Transparent Clear / Red / Yellow / Blue / Green / Grey / Orange / Black colour and should be transparent.
5. Every seal should have preferably 6” long two strand spiraled (0.40/ 0.25 mm) non-magnetic and non-corrosive stainless steel sealing wire permanently integrated to the bottom of main seal body (female part).
6. Seal should be provided with high rise molded embossed word logo of the company on front side main capsule body (female part). Over printed identification codes will not be considered.
7. The seal should have unique sequential 7 digit serial numbers on front side of the main (female part). The serial numbers should be thermo engraved in highly visible contrast colour, which cannot be manipulated for malpractice by the counterfeiters. The serial numbering to be provided above the word logo so that code and serial number can be easily read, record and verified.
8. Seal should have tamper proof, internal “anchor” locking mechanism that permanently secures the wire upon closing. The mechanism should be designed in such a way that its original position cannot be restored after any attempt of tamper or breaking of seals.
9. Sealing mechanism shall be designed in such a way that it can be sealed without using any pliers or tools.
10. Seals should be one piece construction comprising of two parts. First Main Body (Female Part) and Second Anchor (Male Part). Both the part should be connected with a polycarbonate connecting string. Both the part should be designed in such a way that once the seal is closed the two parts can't be separated. The connecting string should break if attempt is made to open/tamper the seal.

11. Seal must be patented. Copy of Valid Patent Certificate shall be submitted along with offer. Seals offered with Patent Pending or Design Certificate or Copyright Artwork etc. will not be considered.

12. The seal should be tested for the following Tests from National Test House.

- ❖ Heat Resistance Test at 147° C
- ❖ Breaking Strength of sealing wire.
- ❖ Boiling water test.
- ❖ Salt fog test
- ❖ Chemical test

13. **ROHS COMPLIANT CERTIFICATE:** Meter security seals must be lead free and should be ROHS compliant and must provide ROHS compliant test certificate along with offer.

14. **Packaging:** Seals shall be supplied in a packet of 100 seals and 10 such packets should be packed in a carton. Each carton shall be labeled with following information.

- ❖ Client Name
- ❖ Purchase Order number & date.
- ❖ Serial number range in the form of barcode.

15. **Sample:** Submission of sample is compulsory. Ten numbers samples of the offered seal should be submitted along with the offer, otherwise offer will not be considered.

16. The security seal shall be designed for a single use only and if tampered with the help of knife or any other sharp instruments, the seal shall be damaged and due to its transparent property, the sign of internal tampering shall be easily detected. Once opened, it cannot be reused. The seal should be one piece construction and should be easily locked with the help of finger and thumb pressure and no tools shall be required to close the seal.

The seal should have also the following features.

1. Tamper Resistance and reliability.
2. Environmentally safe. It should not contain any lead.
3. Withstand long-term exposure to direct sunlight.
4. Tools not required for installation.
5. Full Transparent Body.
6. Heat Resistance upto 147° C.

7. Boiling water Resistance.

8. Chemical Resistance.

17. **Variants:** As the seals are to be used by different departments, the seals shall be of different colors as per WESCO's requirement. The vendor shall specify the maximum number of colors of seals, which can be supplied. The vendor should ensure that the color of the seal should not become fade over a period of time.

18. **Confidentiality Agreement:** The supplier shall have to enter in confidentiality agreement for not sharing or parting the design or tamper resistance features to none other than designated officers authorized by the company.

19. **Delivery Schedule:** The supplier will supply the materials in lots as per WESCO's requirement. The maximum lead-time shall be 30 Days.

20. Quality Assurance:

i. All the material and technology used in the manufacture of the seal shall be of highest quality and reputed make to ensure higher reliability and longer life.

ii. The materials shall be in accordance with the specification, and shall be free from any defect due to faulty design, materials and/or workmanship.

iii. The manufacturer shall have a well-organized Quality Assurance Program (QAP) based on ISO 9000 Series to assure that items and services comply with this specification.

iv. All design, manufacturing, processing, testing and inspection operations affecting the material shall be governed by Quality Assurance procedures in accordance with the directives of the ISO 9001 standards.

The vendor shall furnish the QAPs together with the bid and shall meet the requirements stated.

21. Pre-dispatch inspection at Manufacturer's works:

The inspection shall be carried out at the place of manufacturer unless otherwise specially agreed upon by the supplier and purchaser at the time of dispatches.

The acceptance of any material prior to shipment shall in no way relieve the supplier of any of his responsibilities for meeting all the requirements of the specification and shall not prevent subsequent rejection if such materials are found to be defective.

22. Deviations:

The Bidders are not allowed to deviate from the principal requirements of the Specifications. However, the Bidder is required to submit with his bid a detailed list of all deviations without any ambiguity.