

# **TECHNICAL SPECIFICATION FOR SELF ADHESIVE METER SECURITY SEALS WITH HOLOGRAM**

## **1. SCOPE:**

This specification covers the design, manufacture, testing at manufacturer's works, and at utility end supply and delivery at the consigned WBSEDCL's stores of tamper evident holographic seals under the specification.

**2. Basic Feature:** - The seals should be Tamper evident (if any attempt is made to tamper the seal it should leave clear visible mark of such attempt), Self-adhesive with Covert features for sealing on surfaces viz. metal/plastic/Bakelite/ SMC/Polycarbonate and such other materials like Metering installation, Meter Box etc.

## **3. MANUFACTURING FACILITY :**

The Tenderer should have an entire manufacturing facility for manufacturing of security seals preferably Hologram Manufacturing and Master Origination of latest 3D based technology. Preferably no process should be sublet. The Tenderer should have more than 5 years of experience in the relevant field. The tenderer should have proper security environment in his factory to ensure 100% guarantee of confidentiality and security. Authenticated documents confirming granting of Patents on manufacturing processes & or components should be produced before WBSEDCL authority for verification. The WBSEDCL authority deserves the right to have a Non-disclosure Agreement with the Manufacturer on a particular feature/ features & the manufacturing processes..

The bidder should have in house Bar Coding and Tamper Indicator facility, facility for Laser Numbering & preferably also for Hologram origination and other related infrastructure facilities, which will be inspected before placing orders.

The proprietorship of the machineries, installed for manufacturing of Seals should be authenticated and necessary documents should be provided at the time of inspection.

The seals should be patented for manufacturing process, components (including the basic substrate of the seals). The manufacturer should not only have patent right but also the manufacturer of the said seals.

**4. Credential:** - The tenderer should have the credential of supplying and manufacture of holographic seals with similar feature to at least 5(five) Govt. owned electricity distribution utilities for which necessary documents to be submitted to substantiate the experience in the field of manufacturing such types of seals.

## **5. DESIGN AND CONSTRUCTION :**

a. Film: The Hologram sticker seals should be made of self-destructible and self-adhesive white film or in combination with a transparent film, but the printed matter like barcode and serial number etc must be printed against a white back ground. This adhesive is designed to stick extremely well to a variety of surface stated above. The adhesive does not peel off between (-) 10° C to (+) 80° C.

b. Hologram: The Security seals should have Optical Variable Device Hologram running across the length of the seal in a certain band. The hologram strip shall be laminated or integrated into the seal (base material) surface. If it is not integrated it should have unique security features including adhesiveness. The film should be made of synthetic material, which cannot be removed under cold condition or on application of heat. Under the above condition, the film should get de-shaped or melt completely. The Hologram should be impregnated on the seals.

## **6. MARKINGS ON SEALS :**

The seals should have overt and covert messages and other features as detailed below:

### **6.1. Overt Features:**

- Seals should have frangible property.
- Electrical Continuity (conductivity) Band running across the length of the seal on the impregnated hologram strip.
- 3D Barcode
- 9 Digit Alpha-Numeric Serial Numbering
- Lithographic white/colour effect
- Logo of utility  
(The Bar coding and alpha numeric numbering should be as per details finalized with Departmental Officials.)

### **6.2. Covert Features:**

- UV Text that will glow under Ultra Violet light.
- Laser viewable image / Sound
- Micro text.
- Laser numbering
- The Covert messages on the security seals should be as per details finalized with Departmental Officials. Such Track & Trace Security Codes should be easily verifiable with special security readers only.
- Sign of Tampering by getting dissolved in various polar / non polar solvents.
- Security colour coded noting that resonance under lesser beam frequency which to be mention in confidential paper.

The seal should have release paper as liner. This paper must be silicon release coating on both sides and it must be handled easily without tearing during application. The Seal should be printed with monogram of WBS EDC L. The printing should be in black. Printing on seal should be indelible which is not affected by water. Serial numbering and bar coding should be printed on the bottom portion of the seal.

A software, suitable for tracking and recording the seals should be provided to track the movements of the seals right from receipt of seals at stores, installations, series of inspections, removal and disposal.

The trace software should be capable of depicting the serial number corresponding to the bar coding on the seals (numerical interpretation of barcode), serial number on the seal. With these data, the software must have provision to accommodate the serial number of the meter on which the seal is affixed, date of affixing the seal, address of the consumer, service connection number, date of removal of the meter / seal and the reasons.

Colour of the seal should be white so that clear visibility of printed matter (IN BLACK) is possible.

## **7. DIMENSIONS :**

- a) The overall size of the seal should be: 30 mm (Height) X 75 mm (Width) (Tolerance +/- 5 mm)
- b) Impregnated Hologram Size: minimum 10 mm (Height) X 75 mm (Width)
- c) Thickness: Thickness of sticker seal should be 80-85 microns so that it may be handled easily by field staff i.e., it should not tear when it is removed from the release paper.

**8. ADHESIVE PROPERTY:** The adhesive property of seal should be effective at least for a minimum period of seven years from the date of receipt at stores when not in use. The seal adhesive should remain unaffected even at extreme temperature conditions. The adhesive should have resistance to many solvents like mild acid, alkalis & petrol and other chemical solvents. The adhesive should bind extremely well with metal/plastic/Bakelite /polycarbonate/ ebonite/ABS painted metals and other materials. The adhesive should have quick setting property ( within five minutes).

**9. CLIMATIC CONDITIONS :** The seals to be supplied against this specification should be capable of performing and maintaining the required accuracy under extreme hot, cold, tropical and dusty climate and solar radiation.

## **10. OTHER SPECIAL FEATURES:**

- (a) Seal should be suitable for application on metal/glass/polycarbonate/ Engineering plastic /Bakelite/ SMC/ painted metal surface etc., Once the seal is applied it must not be possible to remove without showing signs of tamper evidence.
- (b) On application of heat, the seals should shrink and the printed matter should collapse.
- (c) Bar codes which can be read using a bar code scanner should be provided.
- (d) The seal should be water proof and can withstand extreme weather conditions.

- (e) Seals should not be tampered alcohol or any other polar or non-polar solvents and chemicals and in any case it should show tamper evidence if some other solvents and chemicals are applied for tampering.
- (f) The seal must be capable of preventing degradation of printed matters and all other features due to UV rays, water, climatic and weather etc, preferably with out application of any film or laminate with in a period of 8 years.
- (g) The life of seal should be more than seven years with its entire overt and covert features intact.
- (h) If any attempt to remove the hologram portion of the seal is made then, the seal should create tamper evidences.
- (i) The art works and other related materials like Master origination etc., prepared in the course of manufacture of seals shall be handed over to the purchaser to avoid duplication.

**11. TESTING:** The hologram seals shall be inspected/tested as acceptance test at manufacturer's works before dispatch in the presence of authorized representative of purchaser for the following tests.

- (a) Physical checking / dimensional checking.
- (b) Checking for continuity/ UV feature, Laser readable etc.,
- (c) HEAT RESISTANCE: Seal should not get removed/affected /distorted /shrunk in temperature range of (-) 10 ° C to (+) 80° C. Seals should be easily identified if disturbed/changed in its shape/destroyed/melted, if excess heat (above 80° C temperature applied).

CHEMICAL TEST: The seal should dissolve when it comes into contact with mild acid, petrol and organic solvent like alcohol, benzene and acetone and any other solvent.

- (d) WATER PROOF: Seal should be water proof and should not get destroyed/shrunk/ distorted even if it remains direct contact with rain.
- (e) HOT BLOW RESISTANCE: Seal should not get peeled off as a single piece in hot condition/under any extreme conditions with the help of hot blower i.e. it should show tamper evidence if any attempt with hot blower is made.
- (f) SAMPLING CRITERIA: For carrying out acceptance test at manufacturer's works, samples shall be selected minimum 10 (ten) at random for testing purpose from each lot of 1000(one thousand) Nos. or part thereof, or any other sampling rate as per discretion of WBSEDCL authority The seals used in testing shall be destroyed in presence of WBSEDCL's inspecting officer.

**12. RANDOM TESTING:** Samples from store/sub-stores shall be selected for the random testing of the material in Meter Testing Lab of WBSEDCL after receipt of seals at the stores irrespective of the fact whether or not it was inspected before dispatch and incase

of any failure, the entire lot shall be rejected at the risk and cost of the supplier. The testing is to be carried out for the tests mentioned above.

**13. TYPE TEST:** The seals should be duly attested and certified by National/International laboratories for testing adhesives, water proof, heat resistance test; hot blower resistance test, environmental conditions test and the certificate should be submitted along with the first offer.

Note : whatever list can't be done in house may be included in this section and reports submitted from certified lab.

**14. REPLACEMENT OF REJECTED SEALS:** In case the seal is found not in accordance with the prescribed specifications and/or the approved samples, the same will be rejected and the supplier shall replace the rejected seals free of cost within one month from the date of intimation.

**15. PACKING AND FORWARDING:** The seals shall be packed properly in chronological order i.e. arranging serially and the same shall be in polythene / plastic bag with labels furnishing the serial number of seals and the name of Region.

**16. SAMPLES:** Each bidder shall have to enclose 15 Nos. of samples along with the bid. Bid received without samples shall be treated as non-responsive and rejected. The sample seals shall be tested as per specification. The sample seals not conforming to the specification will be summarily rejected and accordingly their offer will not be considered for further evaluation.

**17. DRAWING:** Detailed dimensional drawing showing clearly the dimensions and its constructional features should be furnished with tender offer for approval.

**18. ACCESSORIES:** The accessories required for detecting the originality of the seals are to be provided by the manufacturer either on the basis of payment of free depending upon the volume of order.

**19. QUALITY OF SUPPLIES:** All material supplied shall be strictly as per the specifications laid down and in accordance with and as per approved standard sample.

**20. INVOICE:** Invoice Challan of Excise duty along with manufacturing invoice must be submitted during last delivery of Seals.

**21. GUARANTEED TECHNICAL PARTICULARS:** A statement of Technical guarantee particulars shall be furnished as per schedule – I, along with the bid without which the bid shall be treated as Non-responsive.

**22. Stage Inspection:** - At any stage of manufacturing, the official from WBSEDCL can go for stage inspection to adjudge the quality of the seals.

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**SCHEDULE -I**

**GUARANTEED TECHNICAL PARTICULARS**

Sl.No	DESCRIPTION	
1.	Name of the Manufacturer and Address	
2.	Material of Seal	
	a) Main Body	
3.	Size of Seal	
4.	Colour of Seal	
5.	Heat Resistance Test	
	a) Temperature	
	b) Time	
6.	Whether Seal is one part or not	
7.	Thickness of Polyester Film	
8.	Whether Tamper Evident	
9.	Nos of Security Features	
10.	What technologies used for Master origination ? Is this the latest technology ?	
11.	Self life of the seal	
12.	Whether Packing is as specified	
13.	Whether Adhesive used is suitable to give desired strength (Please specify adhesive Make)	
14.	Whether the WBSEDCL logo and year ..... is provided or not	
15.	Whether Nos. will be LASER OR THERMO Engraved	
16.	Whether any tool will be required to seal or not	
17.	No. of Samples submitted	

