

Technical Specification of Digital Coating Thickness Measuring Instrument

1. Scope

This specification covers the technical & functional requirement of Digital Coating Thickness Measuring Instrument. This instrument can be used to facilitate testing of galvanisation thickness on different materials.

2. Functional Requirements:

The instrument shall be capable of -

- i. Measuring the coating thickness of zinc etc. on different ferrous materials.
- ii. Operating with the mentioned accuracy anywhere in West Bengal with temperature range -4°C to 50°C .
- iii. Providing accurate, repeatable, and rapid measurements across a wide range of geometries and surface conditions.
- iv. Supporting multiple probe configurations, if required, for measurement on flat, curved, and small-diameter components.

3. Technical Parameters:

- | | |
|----------------------------|---|
| 3.1. Display | : 0.1µm: 0-100µm
1µm: above 100µm
The instrument features a maximum 4-digit display with one decimal place resolution within the 0-100 µm range |
| 3.2. Audible signal | : There shall be audible signal at measurement acquisition so that the operator shall be able to understand that the instrument has completed taking the measurement. |
| 3.3. Weight | : The instrument shall be light weight & easily portable for single-hand operation in field conditions. |
| 3.4. Ingress Protection | : The instrument shall be IP6n compliant. Where, n = 1 or higher |
| 3.5. Accuracy | : Measurement accuracy shall be ±3% or better. |
| 3.6. Least Count | : 0.1µm: 0-100µm thickness range and 1µm: above 100 µm thickness range |
| 3.7. Measurement Range | : The instrument shall have a measurement range of at least 0 to 1000 microns/ or higher. |
| 3.8. Probe | : The instrument must operate with separate probe(s) for measuring coating thickness for different surfaces (flat, curved). Minimum diameter of the material where the coating shall be checked shall be as low as 3 mm. Thus, the probe tip shall be capable to measure the coating thickness on such materials maintaining the accuracy. In order to measure coating thickness on such wide range of materials, the instrument may have multiple separate probes to cover different applications. |
| 3.9. Probe Tip | : The probe tip should be capable of at least 10,00,000 operations. |
| 3.10. Reading Rate | : 60 to 120 readings per minute |
| 3.11. Calibration Gauge | : Along with each set, the bidder shall provide corrective calibration set like Zero Plate, standard thickness foil sets for user calibration and zero adjustment.
The same shall have to be easy to perform by the dealing persons and shall have to be field-executable. |
| 3.12. Battery | : Capable to work on AA or AAA batteries. |
| 3.13. Operating Condition: | : Shall be capable to take reading with the mentioned accuracy anywhere in West Bengal with temperature range (-)4°C to 50°C and shall be suitable for high humidity and dusty field environments. |

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4. Accessories:

- 4.1. Separate interchangeable Probe(s) for measuring the coating thickness. One set of additional spare probe(s) are also to be supplied.
- 4.2. Carrying case with straps for field use.
- 4.3. Corrective Calibration kit along with Zero plate & certified thickness foils.
- 4.4. User friendly instrument operation Manual.

5. Calibration:

Certificate of calibration shall have to be supplied along with instrument from a NABL accredited laboratory/Govt Test House. However, the bidder shall be responsible for providing periodic calibration support for at least 5 years from the date of supply. Periodic calibration shall preferably be carried out on-site. Where on-site calibration is not possible, the instrument shall be returned within 7 days from the date of collection of the instrument and an alternate instrument (having same model or higher version) shall be supplied at the time of collecting the instrument for calibration.

6. Guarantee:

The entire instrument along with probe(s) & additional spare probe(s) shall have guarantee of 5 years from the date of receive of the instrument.

7. Training:

Supplier shall provide onsite training to WBSEDCL personnel.

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