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उत्पाद मैन्युअल
लोहे और इस्पात पर जस्ता की इलेक्ट्रोप्लेटेड कोटिंग के लिए विशिष्टि
IS 1573: 1986 के अनुसार

Product Manual for
Specification for Electroplated Coatings of Zinc on Iron and Steel
According to IS 1573: 1986

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations,2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	**भारतीय मानक संख्या** **IS No.**	:	IS 1573:1986
	शीर्षक **Title**	:	Specification for Electroplated Coatings of Zinc on Iron and Steel
	संशोधनों की संख्या **No. of amendments**	:	0
2.	**नमूना दिशानिर्देश** **Sampling Guidelines**		
a)	**कच्चा माल** **Raw material**	:	No specific raw material requirement. **Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance**
b)	**समूहीकरण दिशानिर्देश** **Grouping Guidelines**	:	**Please refer Annex-A**
c)	**नमूने का परिमाण** **Sample Quantity**	:	03 Nos of Coated article

			In the case of flat iron and steel coated products, compliance with Clause 8 of IS 1573:1986 shall be ensured. **Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)**
d)	**परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर** **Parameters to be Declared in Test Request**	:	Service Grade No., Classification of Coating, Supplementary treatment types Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.
3.	**परीक्षण उपकरणों की सूची** **List of Test Equipment**	:	**Please refer to Annex- B**
4.	**निरीक्षण और परीक्षण की स्कीम** **Scheme of Inspection and Testing**	:	**Please refer to Annex- C**
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day**		
	All Tests can be carried out in a day except Corrosion Resistance (Cl 9.4) and Humidity Test (Cl 9.1.1.2). **Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.**		
6.	**लाइसेंस का दायरा /Scope of the Licence:**		
	IS 1573: 1986 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 1573: 1986 with the following scope:		
7.	**उत्पाद का नाम** **Name of the product**	Electroplated Coatings of Zinc on Iron and Steel	
	Service Grade Number	1, 2, 3, 4	
	Classification of Coating	Fe/Zn 25, Fe/Zn 12.5, Fe/Zn 7.5, Fe/Zn 5	
	Supplementary Treatment Types	A, B, C, D, E (If applicable)	

ANNEX-A
TO PRODUCT MANUAL FOR
Specification for Electroplated Coatings of Zinc on Iron and Steel According to IS 1573:1986

GROUPING GUIDELINES

1. For the purpose of grant of licence and/or change in scope of licence, the following grouping guidelines shall apply

a) Samples of each service condition grade shall be tested. However, if sample of Service Grade Number 4 is tested, Grade 3, 2 & 1 can be covered in the scope of licence on that basis. Further, if sample of Service Grade Number3 is tested, Grade 2 & 1 can be covered in the scope of licence on that basis and so on.

2. The Firm shall declare the Service Grade No./Classification of coating of Electroplated Coatings of Zinc they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and Testing capabilities of the Manufacturer

3. During the operation of the Licence, BO shall ensure that all varieties (based on Service Grade Number/Classification of coating) covered in the Licence are tested in rotation, to the extent possible.

4. However, it shall be ensured that the firm is having all the necessary manufacturing and testing facilities for manufacturing/testing of all the varieties covered in the scope of the licence.

5. During the operation of the licence, BOs shall ensure that all varieties covered in the scope of the licence are drawn for independent testing in rotation over a period of time.

ANNEX – B

LIST OF TEST EQUIPMENTS
(INDICATIVE LIST, FOR GUIDANCE ONLY)

Major test equipment required to test as per requirements of Indian Standard.

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Local Thickness of Zn Coating (Clause 4.3).	Coate meter/any other instrumental method like XRF/ Any test method given in IS 3203:1982
2.	Local Thickness (In case of Zn plated fastener) Clause 9.2	Antimony trioxide. Con HCl. Organic solvent. Acetone. Weighing balance.
3.	Corrosion Resistance	1-pH by Electromagnetic measurement with electrode 2-Salt Spray cabinet (Chamber) as per Annex-A of IS 5528:2024/ISO 9227:2022. 3-Reference specimen to determine corrosivity of salt spray cabinet.
4.	Supplementary Treatment	1-Performance of chromate coating Clause 9.1.1.2 • Humidity chamber with fan to circulate air 2- Covering (Test for chromate film) Clause 9.1.1.3 • Distilled water, Glacia acetic acid, Diphenyl carbozide, wetting agent, Con HCl, Sodium Hypochlorite, Hydrogen peroxide, 3- Adhesion Test (Clause 9.1.1.4) • No 40 Whatman Filter paper, soft gum eraser

Note: The above is an indicative list for the purpose of guidance only

ANNEX- C
SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: all electroplated Iron or Steel articles of the same type (e.g. plates, Sheets, bars etc.), (of the same heat, if heat treated) same Service Grade Number/Classification Number, electroplated at one time in the same bath with the same consignment of Zinc under similar conditions in one go.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1.**

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as "R" in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the license and Licence Number (i.e. CM/L…) shall be suitably incorporated on each plated article and/or the package containing plated articles alongwith the legend "FOR ZINC PLATING ONLY", provided always that the product thus marked and packed conforms to all the requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on each Package of tube:
a) "For BIS certification details please visit www.bis.gov.in"
b) Any other requirement not specified in the Indian Standard

4. TEST CERTIFICATE – If the base material (iron or steel article) on which the electrodeposited zinc coating is applied is covered under compulsory BIS certification through the applicable Quality Control Order, then each consignment of BIS-certified material conforming to IS 1573:1986 shall be accompanied by a test certificate of the base material, as specified in the relevant product manual for that material.

5. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		(4)
TEST DETAILS					**LEVELS OF CONTROL**		**REMARKS**
Clause	**Requirements**	**Test Method**		**Test equipment requirement R: required (or) S:Sub-contracting permitted**	**No. of Samples**	**Frequency**	
		Clause	**Reference**				
4.2	Thickness and Type of Zinc Coating	4.2, Table 2	IS 1573	R	One	Each Control Unit	-
4.5	Corrosion Resistance (Salt Spray Test)	_	IS 1573 IS 9844	S	One	Once in every three months	_
9.1.1.1	Appearance of Chromate coating	9.1.1.1	IS 1573	R	One	Each article	_
9.1.1.2	Performance of chromate coating (Humidity Test)	9.1.1.2	IS 1573	S	One	Once in a month	_
9.1.1.3	Covering (Test for chromate film)	9.1.1.3	IS 1573	R	One	Each Control Unit	_

9.1.1.4	Adhesion (Chromate coating)	9.1.1.4	IS 1573 IS 8602	R	One	Each Control Unit	_
9.3	Adhesion of the Coating	9.3	IS 1573	R	One	Each Control Unit	_
9.5	Visual Examination	9.5	IS 1573	R	One	Each article	_