



उत्पाद मैनुअल
पूर्व-रोगन की गई एल्युमिनियम जिंक मिश्र धातु लेपित इस्पात पत्ती एवं चादरें
IS 15965:2012 के अनुसार

**Product Manual for
Pre-Painted Aluminium Zinc Alloy Metallic Coated Steel Strip and Sheet
According to IS 15965: 2012**

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 15965:2012
	शीर्षक Title	:	Pre-Painted Aluminium Zinc Alloy Metallic Coated Steel Strip and Sheet
	संशोधनों की संख्या No. of amendments	:	01
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	The substrate for pre-painted aluminium-zinc alloy metallic coated steel strip and sheet shall conform to IS 15961. 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	:	Mechanical: 1 m length; Chemical: 5 pcs of 5cm x 5cm each,

		Separate 0.5 m length shall be drawn for Clause 8.3.2, 8.5 and 10.1 (Sample to be drawn during PI for test of substrate as per 5.1 also) 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	Steel Grade, Coating Class, Class of durability of paint coating, Thickness, Colour, Supply Form (Plain or Profiled) 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 except Corrosion Resistance and Humidity Resistance 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 15965: 2012 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 15965: 2012 with the following scope:	
7.	उत्पाद का नाम Name of the product	Pre-Painted Aluminium Zinc Alloy Metallic Coated Steel Strip and Sheet
	Grade	Steel grade as per IS 15961 (YS 550 etc.)
	Coating Class	AZ 150 etc.
	Class of durability of paint coating	Class 1/2/3/4
	Thickness	From_____ mm up to and including_____ mm
	Profiles (If applicable)	Requirements as declared by the manufacturer

Annex-A
To Product Manual for
Pre-Painted Aluminium Zinc Alloy Metallic Coated Steel Strip and Sheet
According to IS 15965:2012

GROUPING GUIDELINES

1. From each durability class of pre-painted aluminium-zinc alloy metallic coated steel strip and sheet, one sample of highest thickness and highest mass of metallic coating, shall be drawn for testing for covering the entire range of thickness and metallic mass of coating of Pre-Painted Galvanized Steel Sheet and coils, offered for inspection.
2. If a sample has been drawn and tested for higher durability class of material offered (e.g. Class 4), the recommendation shall include lower classes (e.g. class1, class 2, class 3) also.
3. If a sample has been drawn and tested for higher grade of material offered (e.g. Grade designation YS 550), the recommendation shall include lower grades (e.g. Grade designation YS 250, YS 300, YS350, YS450) also.
4. The dimensions and other structural related requirements for supply of profiles (as per agreement between the manufacturer and purchaser) shall be declared by the manufacturer. Each profile shall be tested for all the requirements of IS 15965:2012.
5. It shall be ensured that manufacturer is having complete manufacturing and testing arrangements required for the varieties to be covered in the licence.
6. During operation of licence, samples shall be drawn during surveillance visits on rotation basis so as to cover all grades included in the licence.
7. For inclusion of additional classification of grades in the existing license, samples shall be drawn from additional grades, following the same procedure as mentioned above for grant of license.

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.	Test Equipment/Chemicals and Identification Numbers (Where applicable)	Tests Used in with Clause Reference
1	Atomic Absorption Spectrometer	Clause 5.1 -To analyze the Al & Zinc bath & chemistry of HR Coil /CR Coil
2	Single Pan Balance	Clause 7.1 -Weight Measurement
3	Universal Testing Machine	Clause 6.2 -To check the mechanical property of metal
4	Micrometer	Clause 7.3, 7.4, 8.7, 11.1, 11.3 - To measure thickness of sheet and paint Coating
5	Bend Tester	Clause 8.3.1 -To check the adhesion
6	Pencil Hardness Tester	Clause 8.4 -Hardness of Dry Paint film
7	Impact Tester	Clause 8.3.2 -For Adhesion and flexibility of Dry film paint.
8	Salt Spray/Humidity Testing Machine	Clause 7.5, 10.1, 10.2- To check corrosion and Humidity resistance
9	Colour Matching Cabinet	Clause 9.1 -To check colour difference visually
10	Colour Spectrophotometer with Gloss	Clause 9.2 , 9.3 -To check Gloss and Shade of Dry paint
11	Measuring Tape	Clause 11.4.2,11.4.3,12.1,12.2 - To measure Width and length, camber, out of squareness
12	Weigh Bridge	Clause 11.2 , 13.1 -To do weightment of mass.
13	Vernier caliper for Flatness	Clause 12.3 -To measure flatness of sheet
14	Scratch Resistance Tester	Clause 8.5 - For Scratch resistance of Dry film of paint.
15	MEK Rub Machine	Clause 8.6 -To check the curing of dry film paint
16	Cross Hatch Tester	Clause 8.3.2 -For Adhesion and flexibility of Dry film of paint.

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 during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: For the purpose of this scheme, the material or part thereof representing the same cast/heat-treatment batch and of the same thickness per shift shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

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.

2. ENSURING COMPLIANCE THROUGH TESTING- manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made 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 incorporated suitably on the top of each coil or package of sheets or on a tag attached to each coil or packet or on the Test Certificate, 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: Additionally, the following shall also be marked on each package of the material or the test certificate:

- a) “For BIS certification details please visit www.bis.gov.in”
- b) Any other requirement not specified in the Indian Standard

4. TEST CERTIFICATE – For each consignment of BIS Certified material conforming to IS 15965:2012 there shall be a test certificate which shall contain the Standard Mark, the cast/Control Unit number and the corresponding test results (as given in Annexure-I enclosed).

5. REJECTION - 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
(Recommended Levels of Control by BIS- For Guidance Only)

(1)				(3)		(4)
TEST DETAILS				LEVELS OF CONTROL		REMARKS
Clause	Requirements	Test Method		No. of Samples	Frequency	
		Clause	Reference			
5.1	Manufacture	5	IS 15965:2012	1	Each cast of materials rolled having same quality and dimensions and grade of metallic coating OR Each consignment of same quality, dimensions and metallic coating.	No further testing is required if the material received is ISI marked and is received with Test Certificate
7	Coatings	7.1, 7.3, 7.4, 8.2	IS 15965:2012	1 from every 25 t of Sheets/ Coil	Each Control Unit	Paint coatings may also be supplied as per agreement with manufacturer and the purchaser (Note under clause 7.3 and Annex F of IS 15965:2012). In such cases, requirements to be tested against declared values.
8	Physical Properties of Paint Coating	8, 8.2				
8.3.1	T-bend Adhesion Test	Annex A	IS 15965:2012	1 from every 25 t of Sheets /	Coil / Sheets: Every 25 tonnes or each control unit	Sheets/coils of the Same quality, dimensions, grade of metallic coating and colour.

				Coil		
8.3.2	Reverse Impact Resistance Test	Annex B	IS 15965:2012	-do-	-do-	-do-
8.4	Pencil Hardness Test	4	IS 101 Pt 5/Sec 1	-do-	-do-	-do-
8.5	Scratch hardness	3	IS 101 Pt 5/Sec 1	As agreed between purchaser and supplier		
8.6	Solvent Resistance Test	Annex C	IS 15965:2012	1 from every 25 t of Sheets / Coil	Coil / Sheets: Every 25 tonnes or each control unit	Sheets/coils of the Same quality, dimensions, grade of metallic coating and colour.
8.7	Dry Film Thickness	5B	ISO 2808	-do-	-do-	-do-
9.1	Appearance-general	9.1	IS 15965:2012	-do-	-do-	Visual
9.2	Appearance-Colour	9.2, 8.2	IS 15965:2012	-do-	-do-	Colour of sheets/coils as per agreement between the manufacturer and the purchaser (Clause 9.2 of IS 15965:2012)
9.3	Appearance-Gloss	9.3	IS 15965:2012 IS 101 (Part4/Sec 4)	-do-	-do-	Gloss of sheets/coils as per agreement between the manufacturer and the purchaser (Clause 9.3 of IS15965:2012)
10.1	Salt Spray Test (Corrosion Resistance)	10.1 Annex D Table 3 & 4	IS 15965:2012 IS 5528	One	Once every three months	Samples of all durability classes covered in licence shall be tested in rotation
10.2	Humidity Resistance	10.2 Annex D Table 3 & 5	IS 15965:2012 IS 101 (Part 6/Sec 1)	One	Once every three months	Samples of all durability classes covered in licence shall be tested in rotation
11	Dimensions and Tolerances	11.1, 11.2, 11.3, 11.4.1, 11.4.2, 11.4.3	IS 15965:2012	Sheet:3 Coil:each	Each Control Unit	Sheets (Plain) and coils may also be supplied in sizes and mass as per agreement with manufacturer and the purchaser (Clause11.3 of

						IS15965:2012). In such cases, requirements to be tested against declared values.
11.5	Dimension, Shape and Tolerances of Profiled Sheets	4.2, 11.5	IS 15965:2012	The dimensions and other structural related requirements for supply of profiles shall be as per agreement between the manufacturer and the purchaser. Manufacturer shall comply with the agreed dimensional requirements. Dimension, shape and tolerances of profiled sheet shall be as agreed upon between purchaser and manufacturer.		
13	Mass	11.2, 11.3, 13.1, 13.2	IS 15965:2012	Sheet: 1 Coil:Each	Each coil / Packet	-do-
12	Shape					
12.1	Camber	12.1	IS 15965:2012 IS/ISO 16163	Sheet:3 Coil :1	Each Control Unit	—
12.2	Deviations from Squareness (Out of Square)	12.2	IS 15965:2012 IS/ISO 16163	Sheet: 3	Each Control Unit	—
12.3	Deviations from Flatness	12.3	IS 15965:2012	Sheet: 3	Each Control Unit	—

Annexure-I
(Para 4 of the Scheme of Inspection and Testing)
XYZ IRON AND STEEL COMPANY
(Registered office Address and works address)

ISI Mark
With IS No.
and CM/L
no.

Test Certificate for Pre-Painted Aluminium Zinc Alloy Metallic Coated Steel Strip and Sheet
According to IS 15965:2012

TEST CERTIFICATE NO. _____

To M/s _____

Dated _____

We certified that the material described below fully conforms to IS 15965:2012. Chemical composition and Physical properties of the product as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CM/L _____ are as indicated below against each order No.

(PLEASE REFER TO IS 15965:2012 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

TEST RESULTS

Order No. & Date	Control unit/Coil / Package No.	Supply Form (Plain/ Profiled)	Size (TxWxL)	Durability Class	Quantity (tonnes)	No of Sheets/ Coil	Dry film thickness	Adhesion test	Pencil hardness test	Impact resistance test	Solvent resistance test	Gloss	Name of Top Colour	Al-Zn Coating Class	Steel Grade	Remarks

Remarks

Wagon No.

Truck No.

FOR XYZ IRON AND STEEL COMPANY

(It is suggested that size A4 paper be used for this test Certificate)