

**PRODUCT MANUAL FOR**  
Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet (Plain)  
**according to IS 15961:2012**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.

1.	<b>Product</b>	:	<b>IS 15961:2012</b>
	<b>Title</b>	:	Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet (Plain)
	<b>No. of amendments</b>	:	2
2.	<b>Sampling Guidelines</b>		
a)	<b>Raw material</b>	:	Base metal shall conform to IS 513 Pt.1 or IS 513 Pt.2
b)	<b>Grouping Guidelines</b>	:	Please refer Annex – A
c)	<b>Sample Size</b>	:	For mechanical test: 1 metre in length For chemical test : 5 pieces of 5cm X 5cm /50 g drillings
3.	<b>List of Test Equipment</b>	:	Please refer Annex – B
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer Annex – C
5.	<b>Possible tests in a day</b>	:	All tests
6.	<b>Scope of the Licence :</b>		
	Licence is granted to use Standard Mark as per IS 15961:2012 with the following scope:		
	<b>Name of the product</b>	Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet (Plain)	
	<b>Grade Designation</b>	YS250,..	
	<b>Coating Class</b>	AZ70,..	
	<b>Surface treatment</b>	T,..	
	<b>Surface Finish</b>	Normal(N)/ Skin-Passed(S)	
	<b>Size(Thickness/Width)</b>	Thickness..mm upto and including...mm, Width upto...mm Length(in case of sheets)	

**ANNEXURE A**  
**TOPRODUCT MANUAL FOR**

Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet (Plain)  
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**GROUPING GUIDELINES**

1. Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet according to IS 15961: 2012 is classified on the basis of the following:

- Grade Designation
- Coating Class

2. The following grouping based on type of product, shall be followed for considering grant of licence/inclusion as per IS 15961:2012:

V)It shall be ensured that manufacturer is having complete manufacturing and testing arrangements required for the varieties to be covered in the licence

VI) During operation of licence, samples shall be drawn during surveillance visits on rotation basis so as to cover all grades included in the licence..

Grade Designation (in Ascending Order)	Coating Class (in Ascending Order)	Remarks
<b>YS 250</b> <b>YS 300</b> <b>YS 350</b> <b>YS 450</b> <b>YS 550</b>	AZ70 AZ100 AZ 150 AZ 200	i. One sample of any thickness of base metal of Higher Yield Stress (Minimum) shall be drawn and tested. On testing of the sample, all grades of higher to lower Yield Stress (Minimum) of all sizes can be covered in scope of licence.  ii. If the above sample tested is of higher coating class eg (AZ 200) recommendation can include lower coating classes (AZ 150, AZ 100, AZ 70) also. No separate sample is required to be drawn for steel with differential coating. However if sample drawn and tested is of differential Coating recommendation can include lower coating class based on the higher coating class of differential coating.  iii. The recommendation on surface treatment/surface finish should be on the basis of manufacturing facilities.

3. It shall however be ensured that firm has necessary manufacturing capabilities and testing facilities for the entire sizes/processes proposed to be covered under scope of BIS Certification.

4. During the operation of license, BO shall ensure that all sizes /processes covered in the license are drawn for independent testing on rotation over a period of time.

**ANNEXURE B**  
**TO PRODUCT MANUAL FOR**  
Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet  
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**LIST OF TEST EQUIPMENTS**

Major test equipment essentially 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.	Single Pan Balance of L.C 0.01 g minm HCL(sp gr 1.19) Distilled Water Solvent Naptha Steel scale or Vernier calliper Hot water arrangement Alcohol Running water tap Dryer Stop watch	Coating test(9) (Weight Loss Method)
2.	XRF	Coating test(9) (Instrument Method)
3.	UTM (0-1000KN)	Tensile test (8)
4.	Steel Mandrels, UTM attachments/clamps/ vice/Magnifying glass	Adhesion Test(10)
5.	Weighing Balance	Mass(12)
6.	Measuring Tape, Vernier Calipers Filler gauge, flat bench, Micrometer, Cord	Dimensions, Shape and Tolerances (13)

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

**ANNEXURE C**  
**TOPRODUCT MANUAL FOR**  
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**SCHEME OF INSPECTION AND TESTING**

**LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

**1.1** The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. LABELLING, PACKING & MARKING** –The Standard Mark as given in Column (1) of the First Schedule of the license and Licence Number (i.e. CM/L.....) shall be incorporated, and the marking and packing shall be done as per the provisions of the Indian Standard, provided always that the product thus marked and packed conforms to all the requirement of the specification. In addition, details of BIS website as follows: “For details of BIS certification please visit [www.bis.gov.in](http://www.bis.gov.in)” shall be marked on labels affixed/legible marking/stencil on top of packing of coil/sheets.

**4. CONTROL UNIT** – For the purpose of this scheme, steel sheets /Coils of same Cast/Heat, produced to same Dimension, grade, Coating Class, Surface Finish and Surface treatment Conditions under identical conditions and manufactured in a day shall constitute a control unit.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

**5.1** General requirements relating to the supply of material shall conform to IS 8910 and manufacture of structural steel shall be as per Cl 5 of IS 15961:2012.

**6. TEST CERTIFICATE**-For each consignment of BIS Certified material conforming to IS 15961:2012 there shall be a test certificate which shall contain the Standard Mark, the Control Unit number and the corresponding test results (as given in Annexure-I enclosed)

**7. REJECTIONS** – 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. Any rejected material which is potentially re-salable be sheared or cut or deformed in such a manner that it cannot be used for any other purpose except re-melting. A separate record shall be maintained giving information on quantity and cast number/coil number/control unit number, as applicable, relating to all such rejections/defective/sub-standard material of the production not conforming to the requirements of the Specification and the method of its disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material should be defaced.

**TABLE 1: LEVELS OF CONTROL**

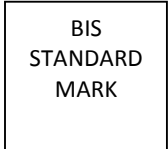
(1) Test Details				(2)	(3) Levels of Control		
Cl.	Requirement	Test Method		Test equipment requirement R: required (or) S: Sub-contracting permitted	No. of Sample	Frequency	Remarks
		Clause	Reference				
5	Base Metal	5.1 7.1	IS 15961:2012 IS 513 Pt.1 IS 513 Pt.2	S	1	Each cast in a consignment	See Note-3
8	Tensile Test	8.1 to 8.3 Table-1	IS 15961:2012 IS 1608 Pt.1	R	Each Coil/ One Per 1000 sheets or part thereof	Each Control Unit	In case of agreement between purchaser and supplier, frequency of testing shall be as per agreement.
9	Coating Test	9.1 to 9.7 Table-2	IS 15961:2012	R	-do-	-do-	
10	Coating adhesion Test	10 Table-3	IS 15961:2012	R	-do-	-do-	
11	Freedom From defects	11.1 11.2	IS 15961:2012	R	Adequate inspection to ensure that the material is free from defects.		
12& 13	Mass, Dimensions, Shape and Tolerances	12 13.1 to 13.7	IS 15961:2012 IS/ISO 16163	R	Each Coil/One Per 1000 sheets or part thereof	Each Control Unit	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: The control unit and levels of control as decided by the Bureau are obligatory to which the licensee shall comply with.

Note-3: No testing for product analysis is required if material fed to hot dip baths is ISI marked and received with test certificate.

**ANNEXURE I**



(Para 6 of the Scheme of Inspection and Testing)

XYZ IRON AND STEEL COMPANY

(Registered office Address and works address)

**TEST CERTIFICATE FOR Hot dip Aluminum – Zinc Alloy Metallic Coated Steel Strip and Sheet**

TEST CERTIFICATE No. \_\_\_\_\_ DATE \_\_\_\_\_

TO M/s \_\_\_\_\_ We certified that the material described below fully conforms to IS15961:2012 Chemical, Physical and Mechanical properties of the product, as tested in accordance with the Scheme of Testing and Inspection contained in the BIS Certification Marks Licence No. CM/L \_\_\_\_\_ are as indicated below against each order No.

(PLEASE REFER TO IS 15961:2012 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

**TEST RESULTS**

Order No. & Date	Section (nom Size)	Control Unit No.	Grade	Quantity in tonnes	CHEMICAL COMPOSITION							MECHANICAL PROPERTIES				Coating class	Remarks	
					C	S	P	Si	Mn	<sup>s</sup> Cu	@ Micro Alloying Elements	Al %	CE	Tensile strength	Elongation			Yield Stress
					%	%	%	%	%	%	%	%						

<sup>s</sup>For copper-bearing quality

@ Micro-alloying element present should be indicated

REMARKS

WAGON NO.

TRUCK NO.

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

FOR XYZ IRON AND STEEL COMPANY