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Zinc hot dip galvanizings

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS H 8641 : 1982** is replaced with **JIS H 8641 : 1999**.

In this revision, conformity with normative references and the corresponding International Standard, and revision of the structure in accordance with **JIS Z 8301 : 1996** are mainly executed.

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Divisional Council on Non-Ferrous Metals

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Introduction This Japanese Industrial Standard has been prepared based on the first edition of **ISO 1459** *Metallic coatings—Protection against corrosion by hot dip galvanizing—Guiding principles* and **ISO 1461** *Metallic coatings—Hot dip galvanized coatings on fabricated ferrous products—Requirements*, published in 1973.

However, some items not specified in the corresponding International Standards have been additionally contained herein as Japanese Industrial Standard, and “retest” specified in the corresponding International Standards has been eliminated.

The portions with side lines or dotted underlines show the matters not included in the original International Standards.

1 Scope This Japanese Industrial Standard specifies the significant surface⁽¹⁾ of hot-dipped zinc coating (hereafter refers to as “coating”) for the purpose to prevent iron and steel products to serve corrosion resistance, excluding hot-dipped zinc-coated steel sheets, zinc-coated iron wire and zinc-coated steel wire, etc.

Note (1) The significant surface means the surface area which forms essential part in practical use.

Remarks : The corresponding International Standards to this Standard are shown as follows.

ISO 1459 : 1973 *Metallic coatings—Protection against corrosion by hot dip galvanizing—Guiding principles*

ISO 1461 : 1973 *Metallic coatings—Hot dip galvanized coatings on fabricated ferrous products—Requirements*

2 Normative reference The following standard contains provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standard indicated below shall be applied.

JIS H 0401 *Methods of test for hot dip galvanized coatings*

3 Classification The classification of coating shall be as given in Table 1 according to the mass of deposit and number of times of copper sulfate test.

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Table 1 Classification

Classification		Designation
Class 1	A	HDZ A
	B	HDZ B
Class 2	35	HDZ 35
	40	HDZ 40
	45	HDZ 45
	50	HDZ 50
	55	HDZ 55

4 Quality

4.1 Appearance The coated surface shall be continuously smooth, and a hindrance to practical use shall not exist for the specified purposes.

Especially unacceptable hindrances to practical use are the defects such as non-coating, slobbery stains of junctions, the flux residue and so on. It is necessary that acceptance/rejection criteria for these defects shall be determined with the agreement between the parties concerned with delivery beforehand. Unless otherwise provided, the occurrence of a burn or white corrosion products shall not be a cause for rejection of the coating products.

4.2 Coating mass and copper sulfate test The mass of deposit and number of times of copper sulfate test shall comply with Table 2 .



Table 2 Quality

Classification		Designation	Coating mass g/m ²	Number of times of copper sulfate test	Example of application (Informative reference)
Class 1	A	HDZ A	—	4 times	Rolled steels and steel products up to incl. 5 mm in thickness, steel tubular products, bolts and nuts 12 mm and over in dia., and washers over 2.3 mm in thickness.
	B	HDZ B	—	5 times	Rolled steels and steel products over 5 mm in thickness, steel tubular products, castings and forgings.
Class 2	35	HDZ 35	350 min.	—	Rolled steels and steel products with a range of 1 mm or over up to and incl. 2 mm in thickness, bolts and nuts 12 mm or over in dia., and washers over 2.3 mm in thickness.
	40	HDZ 40	400 min.	—	Rolled steels and steel products with a range of over 2 mm up to and incl. 3 mm in thickness, and castings and forgings.
	45	HDZ 45	450 min.	—	Rolled steels and steel products with a range of over 3 mm up to and incl. 5 mm in thickness, and castings and forgings.
	50	HDZ 50	500 min.	—	Rolled steels and steel products over 5 mm in thickness, and castings and forgings.
	55	HDZ 55	550 min.	—	Rolled steels and steel products, castings and forgings to be served under severe corrosion environmental conditions.

- Remarks 1 Those which are required class HDZ 55 coating are preferable 3.2 mm and over in thickness of the substrates. When the thickness of the substrate is under 3.2 mm, it shall be previously agreed upon between the parties concerned.
- 2 The thickness and diameter denoted in the column "example of application" in the above table shall apply each nominal dimension.
- 3 Severe corrosion environmental conditions means the sea side where concentration of sea salt particles is high, and the area where snow melting agents are sprayed and so on.

4.3 Adhesion The coated film shall have good adhesion to the substrate and not to produce flaking and cracking in usual application.

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5 Test

5.1 Sampling method of test piece The sampling method of test piece shall be conducted as follows:

- a) A representative specimen shall be taken from each lot which consists of the same quality of substrate coated under the same conditions. A test piece shall be taken from the specimen.
- b) When it is practically impossible to cut off a test piece from a product which is assembled and the like, a test specimen shall be taken from the same material as that used for the product, and then a test piece shall be made therefrom by coating at the same time as the body.
- c) The number of test pieces and sampling plan thereof shall be agreed upon between the parties concerned.

5.2 Test for mass of deposit Apply the test method for mass of deposit specified in JIS H 0401.

5.3 Copper sulfate test Apply the copper sulfate test method specified in JIS H 0401.

5.4 Adhesion test Apply the adhesion test method specified in JIS H 0401.

6 Inspection The coating shall conform to the requirements specified in 4., when tested in accordance with 5. Test for coating mass, copper sulfate test, and adhesion test shall be carried out taking a test piece according to 5.1. Number of test pieces and sampling plan shall be agreed upon between the parties concerned.

7 Marking For coated products, the following items shall be marked on the tag or invoice (including statement of delivery).

- a) Designation expressing the classification of coating
- b) Year and month of coating
- c) Processor's name or abbreviation

