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NATIONAL STANDARD OF THE
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GB/T 13912-2020

Replacing GB/T 13912-2002

**Metallic coatings - Hot dip galvanized coatings on
fabricated iron and steel articles - Specifications and
test methods**

金属覆盖层 钢铁制件热浸镀锌层

技术要求及试验方法

(ISO 1461:2009, Hot dip galvanized coatings on fabricated iron and
steel articles - Specifications and test methods, MOD)

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Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 13912-2002 "Metallic coatings - Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods". Compared with GB/T 13912-2002, the main technical changes of this Standard are as follows:

- ADD the terms 3.16 "Zinc melt" and 3.17 "Weld seepage".
- 4.1 "General" incorporates the previous 4.2 "Base metal"; adjust the previous 4.1 "Information to be provided by the purchaser" into Annex A.
- Adjust the previous 6.3 "Uncoating and renovation" into Annex E and make supplements.
- Delete the previous Clause 7 "Test methods". Incorporate the previous 7.1 "Appearance test" and 7.3 "Adhesion test" with the corresponding provisions in Clause 6. Adjust the previous 7.2 "Thickness measurement part" into Annex D.

This Standard uses the redraft law to modify and adopt ISO 1461:2009 "Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods".

Compared with ISO 1461:2009, this Standard has been adjusted in terms of structure. Annex E and Annex C of ISO 1461:2009 have been adjusted to Annex C and Annex E of this Standard, respectively.

The technical differences between this Standard and ISO 1461:2009 and their reasons are as follows:

- As for the normative references, this Standard has made adjustments with technical differences, to adapt to the technical conditions of China. The adjustments are mainly reflected in Clause 2 "Normative references". The specific adjustments are as follows:
 - Replace ISO 752 with GB/T 470 which modifies and adopts the international standard (see 4.2);
 - Replace ISO 2859-1 with GB/T 2828.1 which is identical to the international standard (see 6.2.3);
 - Replace ISO 2859-2 with GB/T 2828.2 which is non-equivalent to the international standard (see 6.2.3);

- Replace ISO 2859-3 with GB/T 2828.3 which is identical to the international standard (see 6.2.3);
- Replace ISO 2178 with GB/T 4956 which is identical to the international standard (see 6.2.2);
- Replace ISO 3882 with GB/T 6463 which is identical to the international standard (see 6.2.2);
- Replace ISO 2064 with GB/T 12334 which is identical to the international standard (see Clause 3);
- Replace ISO 2808 with GB/T 13452.2 which is identical to the international standard (see 6.2.2);
- Replace ISO 1460 with GB/T 13825 which is identical to the international standard (see 6.2.2);
- Replace ISO 10474 with GB/T 18253 which is identical to the international standard (see Clause 7).

This Standard has made the following editorial changes:

- CHANGE the standard name to "Metallic coatings - Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods";
- According to GB/T 1.1-2009, appropriately supplement and adjust the content of Clause 1 "Scope";
- According to the order mentioned in the standard text, adjust the numbers of Annex C and Annex E.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee 57 on Metallic and Non-metallic Coating of Standardization Administration of China (SAC/TC 57).

Drafting organizations of this Standard: Wuhan Research Institute of Materials Protection, Maanshan Shuntai Rare Earth & New Materials Co., Ltd., Jiangsu Guoqiang Galvanization Industrial Co., Ltd., Shanghai Yongfeng Hot-dip Galvanizing Co., Ltd., South China University of Technology, Jiangsu Shengda Zhongyuan Electric Co., Ltd., Tongxiang Tiesheng Line Equipment Co., Ltd.

Main drafters of this Standard: Wu Yong, Kong Gang, Yuan Chong, Yuan Guoqiang, Liu Jilu, Shi Zhimin, Zhu Xiaochun, Ran Chengjin, Xu Zhongtang,

Metallic coatings - Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods

1 Scope

This Standard specifies the specifications and test methods for hot dip galvanized coatings on fabricated iron and steel articles. This Standard does not specify the after-treatment and protective coating of hot dip galvanized products.

This Standard applies to hot dip galvanized coatings of fabricated iron and steel articles (including certain castings) (the total content of other alloying elements does not exceed 2 %). This Standard does not apply to the following:

- a) sheet, wire and woven or welded mesh products that are continuously hot dip galvanized;
- b) tube and bar that are hot dip galvanized in automatic plants;
- c) hot dip galvanized products (e.g. fasteners) for which specific standards exist and which might include additional requirements or requirements which are different from those of this Standard.

Note: Individual product standards can incorporate this Standard for the coating by quoting its number, or can incorporate it with modifications specific to the product. Different requirements can also be made for galvanized coatings on products intended to meet specific regulatory requirements.

2 Normative references

The following documents are indispensable for the application of this document. For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

GB/T 470 Zinc ingots (GB/T 470-2008, ISO 752:2004, MOD)

GB/T 2828.1 Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot

inspection (GB/T 2828.1-2012, ISO 2859-1:1999, IDT)

GB/T 2828.2 Sampling procedures for inspection by attributes - Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection (GB/T 2828.2-2008, ISO 2859-2:1985, NEQ)

GB/T 2828.3 Sampling procedures for inspection by attributes - Part 3: Skip-lot sampling procedures (GB/T 2828.3-2008, ISO 2859-3:2005, IDT)

GB/T 4956 Non-magnetic coatings on magnetic substrates - Measurement of coating thickness - Magnetic method (GB/T 4956-2003, ISO 2178:1982, IDT)

GB/T 6463 Metallic and other inorganic coatings - Review of methods of measurement of thickness (GB/T 6463-2005, ISO 3882:2003, IDT)

GB/T 12334 Metallic and other inorganic coatings - Definitions and conventions concerning the measurement of thickness (GB/T 12334-2001, idt ISO 2064:1996)

GB/T 13452.2 Paints and varnishes - Determination of film thickness (GB/T 13452.2-2008, ISO 2808:2007, IDT)

GB/T 13825 Metallic coatings - Hot dip galvanized coatings on ferrous materials - Gravimetric determination of the mass per unit area (GB/T 13825-2008, ISO 1460:1992, IDT)

GB/T 18253 Steel and steel products - Types of inspection documents (GB/T 18253-2018, ISO 10474:2013, IDT)

ISO 3549 Zinc dust pigments for paints - Specifications and test methods

EN 1179 Zinc and zinc alloys - Primary zinc

EN 13283 Zinc and zinc alloys - Secondary zinc

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 12334 and the following apply.

3.1

Hot dip galvanizing

Formation of a coating of zinc and/or zinc iron alloys on iron and steel products

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