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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 17456.1-2025

Replacing GB/T 17456.1-2009

**Ductile iron pipes, fittings and accessories - External
zinc-based coating - Part 1: Metallic zinc and zinc alloy with
finishing layer**

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 1 of GB/T 17456 "Zinc-based coating on the outer surface of ductile iron pipes, fittings and accessories".

The following sections have been released.

---Part 1: Metallic zinc and zinc alloy coatings with finishing layers;

---Part 2: Zinc-rich coating with finishing layer.

This document replaces GB/T 17456.1-2009 "Zinc Coating of External Surfaces of Ductile Iron Pipes - Part 1: Metallic Zinc Coating with Finishing Coating".

Compared with GB/T 17456.1-2009, the main technical changes in the "Layer" standard, apart from structural adjustments and editorial modifications, are as follows.

---The scope now includes references to GB/T 26081 and GB/T 43492, extending the application to include ductile iron for drainage engineering and precast thermal insulation.

Cast iron pipes, fittings and accessories (see Chapter 1);

---A new chapter on "Terms and Definitions" has been added (see Chapter 3);

---Change "zinc coating" to "zinc-based coating" (see Chapter 5, Chapter 4 of the 2009 edition);

---The coating quality requirements have been revised, and GB/T 43492 has been added as a reference to supplement prefabricated insulated ductile iron pipes, fittings, and accessories.

Coating quality requirements (see 5.4, 4.4 in the 2009 edition);

---The reference standard for the test method of dry film thickness of the finishing coating has been changed to GB/T 13452.2 to adapt to my country's technical conditions and add...

Operability (see 7.2.6, 6.2 in the 2009 edition).

This document is modified to adopt ISO 8179-1:2017 "Ductile iron pipes, fittings and accessories and their joints - Zinc coating on the outer surface - Part 1" Part. Zinc coating with finishing layer.

The technical differences between this document and ISO 8179-1:2017, and the reasons therefor, are as follows.

---The scope requirements have been revised, and descriptions of technical requirements and test methods have been added to comply with national standard drafting requirements and to use normative...

The referenced GB/T 13295 and GB/T 26081 replace ISO 2531 and ISO 7186, and add references to them.

GB/T 43492 has removed ISO 16631 (see Chapter 1), which is normatively referenced in ISO 8179-1:2017, to comply with Chinese national standards.

Increase the likelihood of action and make it more feasible;

---The quality requirements for zinc-based coatings have been revised and are now tiered. Quality requirements for coatings in weakly corrosive soil environments have been removed, and new requirements have been added.

The quality requirements for the zinc-based coating before the insulation layer are added, and GB/T 43492 (see 5.4) is referenced, which meets the requirements of domestic users.

Product usage needs make it clearer for users to choose products;

---ISO 2808 (see 7.2.6) has been replaced with the normatively referenced GB/T 13452.2 to adapt to my country's technical conditions and add [further details needed].

Operability.

The following editorial changes have been made to this document.

---The file name has been changed, the connector description has been removed, and a "with finishing layer" description has been added;

---The scope is described in segments according to the principles of national standard compilation;

---The requirements for zinc-based coatings and finishing coating materials have been removed from the scope, as they are redundant with Chapter 4;

---5.5a) adds "apply zinc-based coating by method 5.2";

---Move the "Note" in the zinc-based coating quality test method to the end of clause 7.1;

---The steps of the hydrogen method in A.2.4 are modified, and the "Note" in B.2 and B.3 is moved to the end of the clause;

---The standard zinc coating quality in B.2 "Note" has been changed to correspond with 5.4 and meet the needs of domestic users for product use.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Iron and Steel Association.

This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183).

Introduction

GB/T 17456 "Zinc-based coating on the outer surface of ductile iron pipes, fittings and accessories" specifies the finishing process for ductile iron pipes, fittings and accessories.

Prior to coating, the relevant requirements and test methods for zinc metal and zinc alloys, as well as zinc-rich coatings, are as follows, especially for zinc coatings with a finishing coating.

The specifications for base-coated ductile iron pipes, fittings and accessories are detailed and are proposed to consist of two parts.

---Part 1: Metallic zinc and zinc alloy coatings with finishing layers. The aim is to establish suitable coatings for metallic zinc and zinc alloys used in factories.

Technical requirements and test methods for alloy coating and finishing coating.

---Part 2: Zinc-rich coatings with finishing layers. The aim is to establish suitable methods for in-plant application of zinc-rich coatings and finishing processes.

Technical requirements and test methods for coating application.

Ductile iron pipes, fittings and accessories Zinc-based coating on outer surface, Part 1.

Zinc and zinc alloy coatings with finishing layer

1 Scope

This document specifies the in-factory processing requirements for ductile iron pipes, fittings, and accessories as defined in GB/T 13295, GB/T 26081, and GB/T 43492.

Technical requirements and test methods for applying zinc and zinc alloy coatings and finishing coatings to the outer surface of the product.

This document applies to zinc and zinc alloy coatings on the outer surface of ductile iron pipes, fittings and accessories with a finishing layer.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 13295 Ductile iron pipes, fittings and accessories for water and gas pipelines (GB/T 13295-2019, ISO 2531.