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Ductile iron fittings, accessories and their joints and valves — Epoxy coating

Raccords, accessoires et leurs assemblages et appareils de robinetterie en fonte ductile — Revêtement époxy

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Contents

Page

Foreword ... **iv**

1 Scope ... **1**

2 Normative references ... **1**

3 Terms and definitions ... **1**

4 Routine test requirements ... **2**
4.1 General ... 2
4.2 Surface preparation ... 3
4.3 Coating appearance ... 3
4.4 Coating thickness ... 3
4.5 Adhesion (pull off test/cross cut knife test) ... 3
4.6 Cross linkage (MIBK/ΔTg) ... 3
4.7 Non-porosity ... 3
4.8 Repairs ... 4

5 Performance requirements ... **4**
5.1 General ... 4
5.2 Materials in contact with water intended for human consumption ... 4
5.3 Materials in contact with sewage waters ... 4
5.4 Impact resistance ... 4
5.5 Resistance to hot water ... 4

6 Test methods ... **5**
6.1 Routine tests ... 5
6.1.1 Surface preparation ... 5
6.1.2 Coating appearance ... 5
6.1.3 Coating thickness ... 5
6.1.4 Adhesion (pull off/cross cut knife test) ... 5
6.1.5 Cross linkage (MIBK/ΔTg) ... 5
6.1.6 Non-porosity ... 5
6.2 Performance test ... 6
6.2.1 Impact resistance strength ... 6
6.2.2 Resistance to hot water ... 6

Annex A (normative) **Quality assurance** ... **7**

Annex B (normative) **Cross cut knife test method** ... **9**

Annex C (informative) **Coating material** ... **10**

Annex D (informative) **Handling, transportation and storage** ... **11**

Bibliography ... **12**

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Foreword

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 5, *Ferrous metal pipes and metallic fittings*, Subcommittee SC 2, *Cast iron pipes, fittings and their joints*.

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Ductile iron fittings, accessories and their joints and valves — Epoxy coating

1 Scope

This document specifies the requirements and test methods applicable to factory applied epoxy coatings (fusion bonded or 2-pack liquid epoxy) for ductile iron fittings and accessories supplied to ISO 2531 and ISO 7186, and ductile iron valves.

It covers internal and external coatings for use in the conveyance of raw water, potable water and waste waters for operating temperatures up to 60 °C.

This document contains specifications for performance tests and routine tests of the coating.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2531, *Ductile iron pipes, fittings, accessories and their joints for water applications*

ISO 4624, *Paints and varnishes — Pull-off test for adhesion*

ISO 7186, *Ductile iron products for sewerage applications*

ISO 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

ISO 8502-3, *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness — Part 3: Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2531 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
adhesion
pull off test
force per unit area, applied perpendicular to the surface, which is necessary to separate the coating from its substrate

3.2
cross linkage
chemical reaction between epoxy resin and hardener to form the final cured coating

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3.3
impact resistance
energy which a coating can withstand without damage under defined testing conditions

3.4
non-porosity
absence of electrical puncture in a high voltage test (holiday test) under defined test conditions

3.5
epoxy coating
factory applied coating with either

— fusion bonded epoxy powder applied by spraying or dipping in a fluidised bed on preheated parts, with or without post curing, or

— two-pack liquid epoxy consisting of a base and a catalyst component which are mixed together in the proportion specified by the manufacturer before application

3.6
chalking
superficial reaction of *epoxy coating* (3.5) due to exposure to UV-radiation

Note 1 to entry: The process is confined to the surface only and results in a dulling of the surface.

3.7
performance test
test which is done once and thereafter only when there is a change in the coating material or coating process

3.8
routine test
test carried out to control the manufacturing process

Note 1 to entry: The frequency of the test is defined by this document or the manufacturer.

3.9
designated zone
area of the casting designated by jointing/mating surfaces or process and test characteristics where a lower coating thickness standard is applied

EXAMPLE 1 An example of jointing/mating surfaces is joint areas.

EXAMPLE 2 Examples of process and test characteristics are bolt holes, marking, ribs, edges.

3.10
localised thickness
measured thickness at any one point of one coated product

4 Routine test requirements

4.1 General

The following technical requirements shall be demonstrated by routine tests applied in production, on in-process and finished coated products with defined frequency. Routine tests shall be in accordance with the overview of requirements provided in Table A.2.

Annex D outlines the handling, transportation and storage of coated products.

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