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Plastics - Assessment of the fire characteristics and fire performance of fibre-reinforced plastic composites

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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 modified to adopt ISO 25762.2009 "Fire resistance characteristics and fire performance evaluation of plastic fiber reinforced polymer composites"

guide".

Compared with ISO 25762.2009, this document has many structural adjustments. A comparison list of structural number changes between the two documents

See Appendix A.

The technical differences between this document and ISO 25762.2009 and their reasons are as follows.

---Replaced ISO 472 (see Chapter 3) with normatively quoted GB/T 2035 to adapt to my country's technical conditions;

---Replaced ISO 13943 with normatively quoted GB/T 5907.1~GB/T 5907.3 (see Chapter 3);

---Change Note 2 of the term "composite materials" in ISO 25762.2009 to the text (see 3.1);

---Change the term "radiation resistance" in ISO 25762.2009 to Note 1~Note 3 of 5.2.1 (see 5.2.1);

---Deleted the terms "smoke growth rate index", "thermoset material", "thermoplastic material" and "reinforced fiber" in ISO 25762.2009

and definition;

---Change the term "fiber-reinforced polymer composite material" to "fiber-reinforced plastic composite material" (see 3.2) to adapt to my country's technology

technical conditions;

---Change the notes in ISO 25762.20096.2 to the text (see 6.2);

---Change "ISO Fire Safety Technical Committee (ISO /TC92)" to "National Fire Safety Technical Committee (SAC/TC113)"

(See 6.4), to adapt to my country's technical conditions;

---Change ISO 25762.20093.1.10 to the note in Table B.3 (see Table B.3).

The following editorial changes have been made to this document.

---In order to coordinate with the existing standards, the name of the standard is changed to "Fire resistance characteristics and fire performance of plastic fiber reinforced plastic composite materials"

assessment";

---Deleted Note 3 "Related guidance on handling fires in fiber-reinforced polymer composites" in the scope of ISO 25762.2009 to

and fire safety management, handling and storage recommendations for fiber reinforced plastic composites" (see Chapter 1);

---Replaced ISO 5660-1 with informative reference GB/T 16172 (see 3.7, 5.1.4, 6.3, Appendix B and Appendix E) to adapt

my country's technical conditions;

---Replaced ISO 1268 (all parts) with the informative reference GB/T 27797 (all parts) (see 4.4) to adapt to our country's

Technical conditions;

---Replaced ISO 1182 (see 5.1.2) with the informative reference GB/T 5464 to adapt to my country's technical conditions;

---Replaced ISO 24473 (see 5.1.4 and Appendix E) with the informative reference GB/T 41382 to adapt to my country's technical conditions;

---Replaced ISO 9705 with the informative reference GB/T 25207 (see 5.1.4, 5.2.2, 6.4 and Appendix E) to adapt to my country's

Technical conditions;

---Replaced ISO 9239-1 (see 5.1.5) with the informative reference GB/T 11785 to adapt to my country's technical conditions;

---Replaced ISO 5658-2 (see 5.1.5 and Appendix B) with the informative reference GB/T 28752 to adapt to my country's technology

condition;

---Replaced ISO 5659-2 (see 5.1.6, 5.1.7 and Appendix B) with the informative reference GB/T 8323.2 to adapt to my country's technology

technical conditions;

---Replaced ISO 834 (all parts) with the informative reference GB/T 9978 (all parts) (see 5.2, 6.5, Appendix B and

Appendix F), to adapt to my country's technical conditions;

---Replaced ISO 13784-1 (see 6.4) with the informative reference GB/T 25206.1 to adapt to my country's technical conditions;

---Replaced ISO 13784-2 (see 6.4) with the informative reference GB/T 25206.2 to adapt to my country's technical conditions;

---Deleted Note 2 in ISO 25762.20096.5 "ISO 30021-2, Medium-scale fire resistance test of fiber-reinforced polymer composites

Standard, which is currently under development," and the ISO 30021 standard has been transformed into a national standard.

---Added Appendix A (informative) "List of comparison between this document and ISO 25762.2009 structure numbers";

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document describes the fire resistance properties and fire resistance of fiber-reinforced plastic (FRP) composites for structural applications in construction and transportation.

Ability assessment methods.

This document applies to fiber-reinforced thermosetting or thermoplastic plastic composites with inorganic fiber lengths greater than 7.5mm.

This document describes the following evaluation methods.

---The suitability of different product types (such as panels, laminates, profiles and certain sandwich structures) for end-use performance;

---Test methods and performance judgment basis for fiber-reinforced plastic samples with

different shapes.

Note 1.The physical form (such as thickness, density and shape) of fiber-reinforced plastic composites varies widely.

Note 2.Fiber-reinforced plastic composites can also be products that also contain other materials (such as metal or inorganic non-fiber fillers), as well as air gaps, joints, etc.

Components for sewing and fastening accessories.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

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

this document.

GB/T 2035 Plastic terms and definitions (GB/T 2035-2008, ISO 472.1999, IDT)

GB/T 5907.1 Fire protection vocabulary Part 1.General terms

GB/T 5907.2 Fire Vocabulary Part 2.Fire Prevention

GB/T 5907.3 Fire Vocabulary Part 3.Fire Fighting and Rescue

3 Terms and definitions

The following terms and definitions as defined in GB/T 2035 and GB/T 5907.1~GB/T 5907.3 apply to this document.

3.1

composite materialcomposite

Two or more different phase materials, at least one of which is a matrix material that is a plastic or organic polymer and forms a structured group of continuous phases

Composite materials.

Note. Composite materials have a single-layer structure or a multi-layer structure.

3.2

A composite material composed of thermosetting or thermoplastic resin and fibers with a length greater than 7.5 mm before processing.

Note. In this document, plastic composite materials containing fibers with a pre-processing