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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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Fibre-reinforced plastics -- Thermosetting moulding compounds and prepregs -- Determination of cure characteristics

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the translation method equivalent to ISO 12114.1997 "Fiber reinforced plastic thermosetting molding compound and prepreg curing characteristics

Determination".

The documents of our country that have a consistent correspondence with the international documents referenced in this standard are as follows.

---GB/T 2035-2008 Plastic terminology and its definition (ISO 472.1999, IDT).

This standard has made the following editorial changes.

---Used a different unit of measurement system, the unit is converted from Bar to MPa, and centimeters is converted to millimeters.

This standard was proposed by the China Building Materials Federation.

This standard is under the jurisdiction of the National Fiber Reinforced Plastics Standardization Technical Committee (SAC/TC39).

This standard was drafted. Beijing FRP Research and Design Institute Co., Ltd.

1 Scope

This standard specifies two methods for determining the curing properties of fiber reinforced thermosetting molding compounds and prepregs. Characteristic parameters to be measured

as follows.

--- The heat generated by the exothermic reaction;

--- Thermal expansion of the molding compound with increasing temperature;

--- Shrinkage caused by the curing reaction.

The method is applicable to a molding compound composed of a thermosetting resin and a reinforcing fiber, and is mainly applied to an unsaturated polyester resin molding compound.

Method 1. A simple method for determining the reactivity of a thermosetting molding compound. This method is only used to determine the reaction characteristics of the molding compound matrix.

And stability, stability affects the storage period of the molding compound.

Method 2. The physical properties of the molding compound under simulated molding conditions can be obtained, but more complicated equipment and longer test time are required.

between. The prepared molded test piece can be used for more performance tests.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

ISO 472.1988 Plastic Term (Plastics-Vocabulary)

ISO 8605.1989 Textile Glass Fiber Reinforced Plastic Sheet Molding Compound (SMC) Fundamental Specification [Textileglass

reinforcedplastics-Sheetmouldingcompound(SMC)-Basisforaspecification]

ISO 8606.1990 Plastic premixed bulk molding compound (BMC) and thickener-free bulk molding compound (DMC) basic gauge

[Plastics-Prepregs-Bulkmouldingcompound(BMC)anddoughmouldingcompound(DMC)-

Basisforaspecification]

3 Terms and definitions

The following terms and definitions as defined in ISO 472, ISO 8605 and ISO 8606 apply to this document.

3.1

Reactive activity

The maximum slope of the time-dependent temperature profile of the thermoset material during curing, in degrees Celsius per second (°C/s).

3.2

Curing characteristics curingbehaviour

The characteristic parameters obtained by molding a thermosetting material under normal molding conditions can be expressed by the following parameters.

--- curing time;

--- Thermal expansion;

--- shrinkage caused by the curing reaction;

--- Net shrinkage (reaction shrinkage minus thermal expansion).

The size of these parameter values depends on the molding conditions actually employed.