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

GB/T 17470-2007

Replacing GB/T 17470-1998

**Glass fibre mats - Chopped strand and continuous filament
mats**

玻璃纤维短切原丝毡和连续原丝毡

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Foreword

This Standard makes reference to EN 14118.2003 "Reinforcement - Specifications for Textile Glass Mats (Chopped Strand and Continuous Filament Mats)". This Standard replaces GB/T 17470-1998 "Glass Fiber Chopped Strand Mat". Compared with GB/T 17470-1998, the main changes in this Standard are as follows: - The standard name was changed; - Product specification and variety were added; and the scope of application was expanded; - The requirements of grading and classification of products were deleted; - The requirements of the mass (weigh) of mat roll were deleted; - The requirements of hand lay-up molding were added; - Appendix B (Normative) "Determination of Width of Glass Fiber Mat" was added; - Technical index of some items was increased. Appendixes A and B in this Standard are normative. This Standard was proposed by the China Building Material Industry Association. This Standard shall be under the jurisdiction of the National Technical Committee 245 on Glass Fiber of Standardization Administration of China (SAC/TC 245). Drafting organizations of this Standard. Nanjing Fiberglass Research & Design Institute, Owens Corning (China) Investment Co., Ltd., Changzhou Tianma Group Co., Ltd. (Building Materials No. 253 Plant), HeBei Jinniu Energy Resources Co., Ltd. Glass Fiber Branch,

Taishan Fiberglass Inc., and Jushi Group Co., Ltd. Participating drafting organizations of this Standard. Chongqing International Composites Co., Ltd., Nanjing TianMing Fiberglass Products Co., Ltd., and Danyang Zhongya Fiberglass Products Co., Ltd. Chief drafting staffs of this Standard. Wang Yumei, Chen Shang, Fang Yunwei, Shi Zhuo, and Gao Xudong. The previous edition replaced by this Standard is as follows: - GB/T 17470-1998. Glass Fiber Mats - Chopped Strand and Continuous Filament Mats

1 Scope

China's national product standard for glass fibre chopped strand mat and continuous filament mat - the reinforcement used in hand lay-up, in pultrusion and in cement matrices. It specifies the classification and code, the product specifications, the requirements, the test methods, the inspection rules, and the marking, packaging, transport and storage of mats made from glass fibre. It applies to chopped strand mats and continuous filament mats used to reinforce plastics and hydraulic matrices, and may also be applied to continuous monofilament mats and needled mats. It does not apply to stitch-bonded mats, to veils, or to glass fibre mats used for thermal and acoustic insulation. A mat is glass strands laid down in random orientation and held by a binder. Random orientation is the point: it gives equal properties in every direction in the plane, which is what a moulder wants for a shell of complex shape where a woven fabric would not drape. Everything that decides whether a mat works comes down to the binder and the mass per unit area. The binder has to hold the mat together during handling and then dissolve or soften in the resin quickly enough for the mat to conform to the mould and wet out completely - too fast and the mat falls apart before it is in place, too slow and the laminate has dry spots and the fibre pattern shows through. Hence the standard sets the mass per unit area and its tolerance, the binder content, the solubility in styrene, the tensile breaking force and the moisture content, and it specifies how each is measured. The classification and code system makes the type, binder and area weight readable from the designation, and the inspection rules fix the lot, the sampling and the acceptance. Issued on 26 March 2007 and in force since 1 October 2007, it replaces GB/T 17470-1998.

This Standard specifies the classification and code, product specification, requirements, test methods, inspection rules, marking, packaging, transportation, and storage of chopped strand and continuous filament mats (hereinafter referred to as "mats") made from glass fiber. This Standard is applicable to chopped strand mats made from glass fiber (hereinafter referred to as "chopped strand mats") and continuous filament mats made from glass fiber (hereinafter referred to as "continuous filament mats") used for the reinforcement of plastics and hydraulic matrices. It may also be applicable to glass fiber continuous monofilament mats and punched mats. This Standard is not applicable to stitched bonded mats and veils made from glass fiber, nor to glass fiber mats used for thermal and sound insulation.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this Standard. For dated references, the subsequent amendments or revisions of these publications do not apply. However, parties who enter into an agreement based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T 191 Packaging - Pictorial marking for handling of goods

GB/T 1449 Fiber-reinforced plastic composites - Determination of flexural properties

GB/T 1549 Methods of chemical analysis of soda-lime-alumina and borosilicate glass

GB/T 6006.1 Test method for glass mats - Part

3 Classification and Designation

3.1 Product classification According to their composition, glass is divided into three categories: non alkali glass, middle alkali glass, and E-CR glass.

3.2 Product designation Designation for mats includes the following elements.

4 Product Specifications

4.1 Chopped strand mat Typical specification of chopped strand mat is shown in Table 1.

4.2 Continuous filament mat Typical specification of continuous filament mat is shown in Table 2.

5.1 Physiochemical properties

5.1.1 Alkali oxide content It shall meet the following requirements.

5.1.4 Water content For the mats with powder binder, the water content shall not be greater than 0.20 %; for the mats with emulsion binder, the water content shall not be greater than 0.50 %.

5.1.5 Tensile breaking strength

5.1.6 Cinnamene solvability Cinnamene solvability of chopped strand mat shall be in accordance with those specified in Table 6.

5.1.7 Bending strength of laminated wood Bending strength of laminated wood made from glass fiber mats and resins shall be in accordance with those specified in Table

7. Unless otherwise specified by the manufacturer, laminated wood shall be made from

multipurpose unsaturated polyester resin.

5.2 Appearance quality

5.2.1 The edge of mat roll shall be straight and even, and roll shall be tight and uniform.

5.2.2 The mat surface shall be free from any defect of slit, pore space, stain, oil stain, sundries, strand clews, bad-dispersed binder, rare faction of partial strands, partial poor bond and anomalistic edges, which may affect the application of mat.

6 Test Methods

6.1 Alkali oxide content In accordance with those specified in GB/T 1549.

6.2 Mass per unit area It shall be determined in accordance with those specified in GB/T 9914.3 to obtain each individual testing value; and the mean of tolerance and individual tolerance can be calculated respectively by Equations (1) and (2).

6.3 Combustible content In accordance with the requirements of GB/T 3453.

6.4 Water content In accordance with the requirements of GB/T 9914.1.

6.5 Tensile breaking strength In accordance with the requirements of GB/T 6006.2.

6.10 Width If the both edges are finished edge, measured it by the steel tape with a precision of 1 mm. Measurement shall be carried out along the external surface of mat roll and parallel to the roller. Measure three times with mat distributed uniformly; and calculate the mean value of measurement result.

6.11 Appearance quality Visual inspection on production lines.

7.1 Exit-factory inspection and type inspection

7.1.1 Exit-factory inspection The products shall be carried out with exit-factory inspection before leaving the factory. Exit-factory inspection items shall include. mass per unit area, combustible content, tensile break strength, width, water content and appearance quality.

7.3 Judgment rules

7.3.1 Judgement shall be carried out depending on the rounding value of mean of test results of unit product. If all single items of unit product meet the requirements of

5.1 and 5.2, then this unit product shall be judged as qualified; otherwise, it is judged as unqualified.

8.1 Markings

8.1.1 Product markings shall include.