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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 31539-2015

Pultruded fibre reinforced polymer composite structural profiles

结构用纤维增强复合材料拉挤型材

Issued on: May 15, 2015 **Implemented on: February 1, 2016**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine;
Standardization Administration of the PRC

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. The standard proposed by China Building Materials Federation. The standard fiber-reinforced plastic by the National Standardization Technical Committee (SAC/TC39) centralized. This standard is drafted by: Tsinghua University, Beijing glass Composite Material Co., Ltd., China Metallurgical Construction Research Institute Limited. Participated in the drafting of this standard. Zhuzhou Times New Material Technology Co., Ltd., Nanjing Sebel composite limited liability companies, large Even Polytechnic University, Chongqing International Compound Materials Co., Ltd., Nantong long Shing New Material Technology Co., Ltd., Nantong US-Composite Materials Co., Nantong Mingkang Composite Materials Co., Jinling DSM Resins Co., Ltd., Nanjing Jianhui Composite Material Co., Ltd. The main drafters of this standard. Feng Peng, Qin Zhaoping, Yang Yongxin, Guoxiang, Wang Yan Lei, Ren Sinan, Li Weijie, fields, Ding Shangzong. Structural fiber-reinforced composite materials pultrusion profiles

1 Scope

China's national standard for pultruded fibre reinforced polymer composite profiles used as structural members. It specifies the classification, coding and marking, the raw materials, the requirements, the test methods, the inspection rules, and the marking, packaging, transport and storage of these profiles. It applies to glass fibre reinforced pultruded composite profiles used as load-bearing structure in construction, bridges, power and chemical industries, and profiles reinforced with other fibres may take it as a reference. Pultrusion pulls continuous fibre through a resin bath and a heated die, producing a constant-section profile with the fibres running along its length. The result is a structural member with a strength-to-weight ratio comparable to steel, immunity to corrosion, and electrical insulation - which is why these profiles are used for walkways, ladders, gratings and supports in chemical plant, for structures in the splash zone, and for anything that must not conduct near live equipment. It is also a member with properties nothing like steel's,

and that is what the standard has to manage. It is strongly anisotropic: very strong along the fibres, far weaker across them, so a bolted connection or a notch behaves quite differently from the same detail in steel. It has a low modulus relative to its strength, so a design is governed by deflection rather than by stress. It is elastic to failure with no yield, so it gives no warning. And its resin softens with temperature and degrades in ultraviolet light. Two normative annexes give the test methods that address the connection problem directly: the screw pull-out capacity of a profile, and the performance of a full cross-section in reduction. Issued on 15 May 2015 and in force since 1 February 2016.

This standard specifies the structure of the fiber-reinforced composite pultruded profiles classify, code and tags, materials, requirements, test methods, inspection Inspection rules, marking, packaging, transportation and storage. This standard applies to buildings, bridges, electric power, chemical and other industries for the load-bearing structure, reinforced with glass fiber reinforced fiber material complex Pultruded composite material (hereinafter referred to as FRP profiles), use other fiber reinforced pultruded profiles can refer to use.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 1408.1 insulating materials electric strength test methods - Part 1. Tests at power frequencies

GB/T 1446 Test methods for fiber reinforced plastic properties General Plastic tensile properties

GB/T 1447 fiber reinforced Performance test method

GB/T 1448 fiber-reinforced plastic compression Plastic bending performance test method

GB/T 1449 fiber reinforced Between plastic interlaminar shear strength test method

GB/T 1450.1 fiber reinforced Plastic water absorption test method

GB/T 1462 fiber reinforced

GB/T 2408 Determination of burning plastic properties of horizontal and vertical Plastic aging performance test method

GB/T 2573 glass fiber reinforced

GB/T 2576 non-fiber-reinforced plastic resin content test methods for melting points Plastic resin content test method

GB/T 2577 glass fiber reinforced Plastic thermal conductivity test method

GB/T 3139 fiber reinforced Plastic Barcol hardness test GB/T 3854 enhancements

GB/T 3961 fiber reinforced plastics

3 Terms and Definitions

GB/T 3961 defined by the following terms and definitions apply to this document.

3.1 Structural fiber-reinforced composite materials pultrusion profiles pultrudedfiberreinforcedpolymercompositesstructuralprofile Using pultrusion production, with constant cross-sectional shape, load-bearing structure as a fiber-reinforced composite material components products.