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Glass fiber and magnesium cement board

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Foreword

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

This standard was proposed by China Federation of Building Materials.

This standard shall be under the jurisdiction of National Cement Products Standardization Technical Committee (SAC/TC 197).

The drafting organizations of this standard: Hefei Cement Research and Design Institute, Zhangjiagang Shenggang Green Fireproof Building Material Co., Ltd., Guangzhou New Green Ring Fire-retardant Decorative Materials Co., Ltd.

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Glass fiber and magnesium cement board

1 Scope

This standard specifies the terms and definitions, classification and marking, requirements, test methods, inspection rules, signs, packaging, transportation and storage of glass fiber and magnesium cement board.

This standard applies to glass fiber and magnesium cement board, which is mainly used for indoor non-load-bearing inner wall and ceiling, as well as the base material of various types of decorative board.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest version (including all amendments) applies to this document.

GB/T 100 Slotted countersunk head wood screws

GB/T 1043.1 Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test

GB/T 5464 Non-combustibility test method for building materials

GB 6566 Limits of radionuclides in building materials

GB/T 7019 Test methods for fiber cement products

GB/T 8077-2012 Methods for testing uniformity of concrete admixture

GB 8624 Classification for burning behavior of building materials and products

GB/T 9775 Gypsum plasterboard

GB/T 17657 Test methods of evaluating the properties of wood-based panels and surface decorated wood-based panels

GB18580 Indoor decorating and refurbishing materials - Limit of formaldehyde emission of wood-based panels and finishing products

HG/T 2680-2009 Magnesium sulphate for industrial use

6.3 Appearance quality, size allowable deviation

It is performed according to the provisions of GB/T 9775.

6.4 Physical and chemical properties

6.4.1 Bending strength, apparent density

It is performed according to the provisions of JC 646

6.4.2 Impact-resistance strength

It is performed according to the provisions of GB/T 1043.1.

6.4.3 Moisture content of leaving factory

It is performed according to the provisions of GB/T 17657, and the drying temperature is (65 ± 3) °C.

6.4.4 Dry shrinkage and wet-swelling rate

It is performed according to the provisions of GB/T 7019, and the drying temperature after soaking in wet-swelling rate test is (65 ± 3) °C.

6.4.5 Gripping screw force

It is performed according to the provisions of Appendix C.

6.4.6 Chloride ion content

It is performed according to the provisions of Appendix A.

6.4.7 Leachable chloride ion content

It is performed according to the provisions of Appendix B.

6.4.8 Impermeability

Place the test-piece in a constant-temperature-humidity chamber with the relative humidity of 90% or more and the temperature from 30 °C to 35 °C. After 72 hours, take out the sample and observe whether there is water drop or damp or not.

6.5 Incombustibility

It is performed according to the provisions of GB/T 5464.

6.6 Formaldehyde emission

7.3.1 For the tests of appearance quality and size allowable deviation, randomly select three plates from the same inspection lot.

7.3.2 For the rest of inspection items, randomly select from the above products whose appearance quality and size allowable deviation items are tested to be qualified.

7.4 Decision rules

7.4.1 Appearance quality and size allowable deviation

According to the test results, if the appearance quality and size allowable deviation of plates are in compliance with the corresponding provisions in 5.2.1 and 5.2.2, the batch is qualified; if there is one item which does not meet the requirements of the standard in one piece of plate, extract twice from the same batch to conduct the re-test of the project; if the indicator still does not meet the requirements, then the product is determined to be unqualified.

7.4.2 Physical and chemical properties

According to the test results, if bending strength, apparent density, impact-resistance strength, moisture content of leaving factory, dry shrinkage, wet-swelling rate, gripping screw force, chloride ion content, leachable chloride ion content, impermeability, incombustibility, formaldehyde emission, and radionuclides limits of plates are in compliance with the corresponding provisions in 5.2.3, 5.2.4, 5.2.5, and 5.2.6, respectively, the test item is determined to be qualified; if there is one item which does not meet the requirements of the standard in one piece of plate, extract twice from the same batch to conduct the re-test of the project; if the indicator still does not meet the requirements, then the product is determined to be unqualified..

7.4.3 Overall determination

7.4.3.1 Determination of factory inspection

According to the test results, if the factory inspection items are in compliance with the corresponding provisions of this standard, the batch of products shall be qualified; if one of the items fails to comply with the corresponding provisions of this standard, the batch of products shall be determined to be unqualified.

7.4.3.2 Determination of type test

According to the test results, if the type test items are in compliance with the corresponding provisions of this standard, the batch of products shall be qualified; if one of the items fails to comply with the corresponding provisions of this standard, the batch of products shall be determined to be unqualified.

Appendix A

(Normative)

Determination of chloride ion content

A.1 Reagents

It is performed according to the provisions of 11.1.2. of GB/T 8077-2012

A.2 Instrument and equipment

A.2.1 Square hole sieve: one each with the bore diameter of 0.125mm and 0.25mm.

A.2.2 Balance: The division value is 0.0001g.

A.2.3 Measuring cylinder: 5mL, 100mL.

A.2.4 Beaker: 200mL, 500mL.

A.2.5 Burette: 25mL.

A.2.6 Pipette: 10mL.

A.2.7 Potential meter.

A.2.8 Crusher.

A.3 Sample preparation

Weigh about 40g of test-piece after impact-resistance test; use crusher to grind; use square hole sieve to sieve; after controlling to grind, the particle size range of all samples is from 0.125mm to 0.25mm; collect the particles with the particle size from 0.125 mm to 0.25 mm as the sample under test. The samples are dried at 100°C~105°C until constant weight for spare-use.

A.4 Test steps

A.4.1 Weigh 0.5g of the sample after A.3 treatment, accurate to 0.0001g; place it in a 200mL beaker; add 50mL of water and 4mL of nitric acid; stir it and heat to boil for 5 min; use rapid qualitative filter paper to filter; use distilled water to wash the residue until there is no chloride ion; collect about 200mL of filtrate.

A.4.2 It is performed according to the provisions of 11.1.4.2~11.1.4.4 of GB/T 8077-2012.

Appendix B

(Normative)

Determination of leachable chloride ion content

B.1 Reagents

It is performed according to the provisions of 11.1.2. of GB/T 8077-2012.

B.2 Instrument and equipment

B.2.1 Square hole sieve: one each with the bore diameter of 0.125mm and 0.25mm.

B.2.2 Balance: The division value is 0.0001g.

B.2.3 Measuring cylinder: 5mL, 100mL.

B.2.4 Beaker: 200mL, 500mL.

B.2.5 Volumetric flask: 250mL.

B.2.6 Burette: 25mL.

B.2.7 Pipette: 10mL, 25mL.

B.2.8 Magnetic stirrer.

B.2.9 Potential meter.

B.2.10 Crusher.

B.3 Sample preparation

It is the same as A.3.

B.4 Preparation of sample Leachate

B.4.1 The laboratory preparing the solution under test shall meet the test environment conditions of (20 ± 2) °C.

B.4.2 Weigh 2g of the sample after B.3 treatment, accurate to 0.0001g; place it in a 200mL beaker; add 100mL of water; stir it on a magnetic stirrer for 1h; keep the sample in semi-floating state during the process of stirring; the speed of stirring is 500r/min~1000r/min.