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Inorganic waterproof and leakage-preventing materials

无机防水堵漏材料

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Inorganic waterproof and leakage-preventing materials

1 Scope

This Standard specifies the terms and definitions, classification, requirements, test methods, inspection rules, packaging, marking, transportation, and storage of inorganic waterproof and leakage-preventing materials.

This Standard is applicable to inorganic waterproof and leakage-preventing materials for waterproofing, impermeability, and leakage-preventing of construction engineering and civil engineering.

2 Normative references

The following documents contain provisions which, through reference in this Standard, constitute provisions of this Standard. For the dated references, their subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest editions of these documents are applicable. For undated reference documents, the latest editions apply to this Standard.

GB 175-2007 Common Portland Cements

GB/T 1346 Test methods for water requirement of normal consistency, setting time and soundness of the portland cement

GB/T 17671 Method of testing cements - Determination of strength (ISO method)

GBJ 82 Testing methods for long-term and long-lasting performance of ordinary concrete

JC/T 985-2005 Cementitious self-leveling floor mortar

3 Terms and definitions

The following terms and definitions apply to this Standard.

Inorganic waterproof and leakage-preventing materials

6.4 Compressive strength and flexural strength

FORM according to the method specified in GB/T 17671. When slow-setting type product is formed, WEIGH 2000 g of sample. According to the amount of added water recommended by the manufacturer, ADD water. FORM a set of three 40 mm×40 mm×160 mm test pieces each time. For fast-setting type product, WEIGH 1000 g of sample each time. According to the amount of added water recommended by the manufacturer, ADD water. FORM two sets, a total of six 40 mm×40 mm×160 mm test pieces each time. For the demolding time, Type I is demolded after formed for (24±2)h; Type II is demolded within 1 h after forming. After demolding, it is cured according to 6.1.2. Determine the compressive and flexural strength of the corresponding age. The test results are evaluated in accordance with GB/T 17671.

6.5 Impermeability pressure

6.5.1 Impermeability pressure of coating

6.5.1.1 Preparation of reference mortar test piece

USE standard sand and 42.5 grade ordinary Portland cement ingredients in accordance with GB 175-2007. WEIGH 350 g of cement and 1350 g of standard sand; after stirring well, ADD 350 mL of water. After the above materials are stirred in a cement mortar mixer for 3 min, they are loaded into a truncated conical bottom metal impermeability test mold with an upper aperture diameter of 70 mm, a lower aperture of 80 mm, and a height of 30 mm for forming. Vibrate on the vibration table for 20 s. After 5 min, USE the scraper to scrape off the excess slurry and smooth it. The number of molded test pieces is 12 (For six of them, when forming, the thickness of the test piece is reduced by about 2 mm on the corresponding upstream face or downstream face by adding cushion or scraping). DEMOLD after curing according to 6.1.2 for (24±2)h; then CURE according to 6.1.3. If it is not clear that the product is used for the upstream face or the downstream face, according to the upstream face and the downstream face respectively, three test pieces are formed. Otherwise, according to the upstream face or the downstream face, six test pieces are formed.

6.5.1.2 Impermeability pressure of reference mortar test piece

TAKE six reference mortar test pieces which are prepared according to 6.5.1.1 and have been cured to 14 d. After the surface is dried, USE a sealing material to seal and place in a permeameter for a water permeability test. The water pressure starts from 0.2 MPa, is held for 2 h, and increased to 0.3 MPa. Every 1 h thereafter, the water pressure is increased by 0.1 MPa. When the end face of three of the six test pieces shows water seepage, the test may be stopped. RECORD the current water pressure value. When four of the six test pieces do

P_0 - The impermeability pressure of reference mortar test piece, in megapascals (MPa);

P_1 - The impermeability pressure of coating plus reference mortar test piece, in megapascals (MPa).

6.5.2 Impermeability pressure of test piece

6.5.2.1 Preparation of test piece

MIX the ingredients according to 6.4 and fill the impermeability test mold once. Vibrate on a vibration table for forming. Slow-setting type is vibrated for 2 min. Fast-setting type is vibrated for 20 s. SCRAPE off the excess slurry and smooth it. Prepare six test pieces. First, according to 6.1.2, moisturize and cure for (24±2)h; then according to 6.1.3, CURE to the prescribed age.

6.5.2.2 Test procedure

The test piece is cured to 7 d age. According to 6.5.1.2 and 6.5.1.4, carry out the test. USE the maximum pressure value when four of the six test pieces in each group do not show water seepage as the impermeability pressure of the test piece.

6.6 Bond strength

USE the concrete slab conforming to 6.3 of JC/T 985-2005 and the tensile bond strength forming frame specified in 6.4.5. The concrete slab, after being immersed in water for 24 h according to the conditions of 6.1.3, is taken out. After the surface water stain is wiped off, according to 6.8 of JC/T 985-2005, carry out the test.

6.7 Heat resistance

6.7.1 Preparation of test piece

USE standard sand and 42.5 grade ordinary Portland cement conforming to GB 175-2007. In a mass ratio of cement : sand : water=1 : 2 : 0.4, prepare the ingredients. After stirring in the mortar mixer specified in GB/T 17671 for 3 min, they are loaded into a 40 mm×160 mm×10 mm test mold, to form three test pieces. DEMOLD after curing according to 6.1.2 for 24 h; then CURE according to 6.1.3 to the prescribed age. TAKE the test piece cured to 7 d out. WEIGH 1000 g of sample. According to the amount of added water recommended by the manufacturer, ADD water. STIR in the paste mixer according to GB/T 17671. Slow-setting type is stirred for 3 min. Fast-setting type is stirred for 20 s. USE a scraper to scrape the slurry on the base surface of the test piece by two layers. When scraping, it shall use a little force and make it a few times back and forth

b) Trial-production pattern evaluation of new products;

c) When the production resumes after suspension of half a year or more;

d) When there is a major change in the formulation, production process, or raw materials;

e) When the exit-factory inspection is significantly different from the previous type inspection.

7.2 Lot grouping

30 t of the same category of products produced continuously is one lot. Less than 30 t is also counted as one lot.

7.3 Sampling

EXTRACT randomly from each lot of products. For those packaged in 5 kg or more, samples shall be taken from not less than three packages. For those packaged in less than 5 kg, samples shall be taken from not less than ten packages. The samples taken are thoroughly mixed well. The total mass of the samples is 10 kg. DIVIDE the samples into two, one for the inspection and one for the standby.

7.4 Decision rules

7.4.1 Appearance

If the test piece meets the appearance requirements, its appearance is judged to be qualified. If the test piece does not meet the appearance requirements, then this lot of products is judged to be unqualified.

7.4.2 Physical and mechanical properties

On the basis of qualified appearance inspection, carry out the tests for physical and mechanical properties. If all test results meet the requirements of Clause 5 of this Standard, this lot of products is judged to be qualified. If only one test result does not meet the standard requirements, it is allowed to use the standby samples to re-inspect all the items inspected. If the test result meets the standard requirements, this lot of products is judged to be qualified. If there are still items in the re-inspection which do not meet the standard requirements, this lot of products is judged to be unqualified.

8 Packaging, marking, transportation, and storage

8.1 Packaging

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