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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 23440-2025

Replacing GB 23440-2009

Inorganic waterproof and leakage-preventing materials

无机防水堵漏材料

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1 Scope

This document specifies the classification and labeling, technical requirements, test methods, inspection rules, as well as packaging, marking, transportation, storage and shelf life of inorganic waterproof and leakage-preventing materials.

This document is applicable to the production and inspection of inorganic waterproof and leakage-preventing materials used for leakage-preventing, waterproofing and anti- seepage in construction projects.

2 Normative references

GB 175

GB/T 176-2017

GB/T 1346

GB 8076

GB/T 17671

GB/T 50082

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Inorganic waterproof and leakage-preventing material

A powdery material made of sulphoaluminate cement and Portland cement as main components, mixed with additives evenly and used for leakage-preventing, waterproofing and anti-seepage.

3.2 Impermeability pressure of coating

The pressure difference between the reference mortar specimens coated with the inorganic waterproof and leakage-preventing material mixing slurry specified in this document and those not coated with the inorganic waterproof and leakage-preventing material mixing slurry specified in this document during the impermeability test at the specified age.

3.3 Impermeability pressure of specimen

The pressure value of the impermeability test on the anti-seepage test piece made of inorganic waterproof and leakage-preventing material after being cured to the specified age.

4.1 Classification

The inorganic waterproof and leakage-preventing materials (codenamed FD) are divided into Type I and Type II according to setting time and purpose.

a) Type I is a slow-setting waterproof and anti-seepage material mainly used on dry and wet base surfaces.

b) Type II is a fast-setting waterproof and leakage-preventing material mainly used in leaking or gushing areas.

4.2 Labeling

Products are marked in the order of code, type, and executive standard number.

EXAMPLE. Type I inorganic waterproofing and leakage-preventing materials that comply with this document are marked as. FD-I GB/T 23440-2025

5 Technical requirements

The performance of inorganic waterproof and leakage-preventing materials shall comply with the requirements of Table 1.

6.1.1 Laboratory environmental conditions. The temperature is (20±2) °C, and the

relative humidity shall not be less than 50%.

6.1.2 Wet curing conditions for specimens. The temperature is (20±1) °C, and the

relative humidity shall not be less than 90%.

6.1.3 Specimen water curing conditions. The temperature is (20±1) °C.

6.1.4 Before testing, the test water, specimens and instruments used shall be placed

under the conditions specified in 6.1.1 for at least 24 hours.

6.2 Test water consumption

The test water volume is provided by the specimen provider. If the mix ratio provided is within a specific range, the median of that range should be used as the test mix ratio.

The test water volume used shall also be recorded and reported. The test water shall comply with the requirements of JGJ 63.

6.3 Appearance

Visual inspection.

6.4 Chloride ion content

The test shall be conducted in accordance with the provisions of 6.31 of GB/T 176- 2017.

6.5 Setting time

The test shall be carried out according to GB/T 1346.The inorganic waterproof and leakage-preventing material being tested is substituted for the cement in GB/T 1346.

The water consumption is determined according to 6.2.Record the time when water is totally added to the specimen at one time as the starting time of the setting time.

For Type I products, stir at low speed for (30±1) seconds, then at high speed for (150±1) seconds. Place the prepared slurry into a test mold, scrape it flat, and then cure it according to the conditions specified in 6.1.2.

For Type II products, stir at low speed for (5±1) seconds, then at high speed for (15±1) seconds. If the mixture is not uniform, extend the high-speed stirring time until it is uniform. Place the prepared slurry into a test mold, scrape it flat, and then cure it according to the conditions specified in 6.1.2.The process from adding water to compacting and leveling the slurry in the test mold should be completed within 75 seconds.

After the test molds for Type I and Type II products are prepared, the continuous measurements are conducted until the final setting time begins. For Type II products, the measurement is performed every 1 minute.

6.6.1 Type I

The test is conducted in accordance with GB/T 17671.The specimen weight is 2000 g.

The water consumption is determined according to 6.2.Each set of three specimens, measuring 40 mmx40 mmx160 mm, is molded. Immediately after molding, the specimens are cured according to the conditions specified in 6.1.2.After (24±2) hours, they are demolded and immediately cured according to the conditions specified in 6.1.3.

The compressive and flexural strengths at the corresponding ages are measured, and the test results are evaluated.

6.6.2 Type II

The test is conducted according to GB/T 17671.The specimen weight is 1000 g. The water consumption is determined according to 6.2.Each time, one specimen of 40 mmx40 mmx160 mm should be molded. Two groups, six specimens in total, are molded. One group of three age specimens is tested each time.

First, add half of the specimen to the mixing pot, then add water, and finally the remaining sample. After adding all the materials, stir at low speed for (5±1) seconds, then at high speed for (15±1) seconds. If it is not stirred to be uniform, extend the high- speed stirring time appropriately until it is uniform.

Quickly load the mixed slurry into the test mold. Simultaneously, use a 10 mm diameter tamping rod to evenly tamp the mold from the center toward each end in the lengthwise direction 8~12 times. Then, raise the mold by 5 mm~10 mm on one side in the lengthwise direction and vibrate it, 5 times on each side. Use a metal straight-edge ruler to smooth any slurry that extends beyond the mold. Alternatively, use a vibration table conforming to JG/T 245 to compact it for 10~15 seconds, while simultaneously loading and smoothing the slurry. If the setting time is too fast, cool the specimen, mixing water, mixing pot, and test mold to (5±2) °C before preparing the test specimen.

Immediately after molding, the specimens shall be cured for (30±5) minutes according to the conditions specified in 6.1.2 and then demolded. After demolding, the specimens shall continue to be cured according to the conditions specified in 6.1.3.The compressive strength and flexural strength at the corresponding age are measured and the test results are evaluated. The strength test at the age of 1 hour shall be carried out within (60±5) minutes.

6.7 Impermeability

6.7.1 7 d impermeability pressure of coating

6.7.1.1 Preparation of reference mortar specimens

6.7.1.1.1 Raw materials The raw materials used to prepare the reference mortar specimens are as follows.