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PEOPLE'S REPUBLIC OF CHINA

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GB/T 9756-2018

Replacing GB/T 9756-2009

Synthetic resin emulsion coatings for interior wall

合成树脂乳液内墙涂料

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Foreword

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

This Standard replaces GB/T 9756-2009, *Synthetic resin emulsion coatings for interior wall*. Compared with GB/T 9756-2009, the major technical changes, in addition to editorial changes, are as follows:

- Change the scope of the standard (see Clause 1; Clause 1 of 2009 edition);
- Delete the normative references including “GB/T 1250 and JC/T 412.1-2006” (see Clause 2 of 2009 edition);
- Add the normative references including “GB/T 6682-2008, GB/T 8170-2008 and GB/T 23981-2009” (see Clause 2);
- Add the items, indexes and test methods of low-temperature film-forming properties of primers and finishes (see 4.1, 4.2 and 5.5.5);
- Change the technical indexes of scrub resistance of film of finishes: the qualified product's acceptance index of scrub resistance of film of finishes is changed from “≥ 300 times” into “≥ 350 times”, the first-class product's index is changed from “≥ 1000 times” into “1,500 times” and superior product's index is changed from “≥ 5,000” into “≥ 6,000” (see 4.2; 4.2 of 2009 edition);
- Add the specifications of waterproof abrasive paper used for substrate polishing and the inspection method for substrate flatness for the item of scrub resistance of film (see 5.3);
- Change the contents including wet-film thickness, sample density and unit of test panel area in the calculation equation of primer brushing amount (see 5.4.2.1; 5.2.2.4 of 2009 edition);
- Add the panel making requirements for the arbitration test for the items of contrast ratio and scrub resistance of film (see 5.4.3.2);
- Change the test panel thickness for the item of scrub resistance of film, from “430 mm × 150 mm × (4 ~ 6) mm” into “430 mm × 150 mm × 6 mm” (see Table 5; Table 5 of 2009 edition);
- Add the requirements for brushes during the arbitration test for the item of scrub resistance of film (see 5.5.11);
- Add the processing requirements, when the PVA water solution for the item anti-efflorescence has aggregation, precipitation, etc. during storage (see A.1.1.1; A.1.1.1 of 2009 edition);

Synthetic resin emulsion coatings for interior wall

1 Scope

This Standard specifies the classification and grading, requirements, test methods, inspection rules and marking, packaging and storage, etc. for synthetic resin emulsion coatings for interior wall.

This Standard applies to coatings for interior wall, including primers and finishes, which is based on synthetic resin emulsion, prepared with pigments, body pigments and all kinds of auxiliaries and forms a thin coating layer with a smooth surface after application.

2 Normative references

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

GB/T 1728-1979, *Methods of test for drying time of coatings of paints and putties*

GB/T 1766-2008, *Paints and varnishes – Rating schemes of degradation of coats*

GB/T 1910, *Newsprint*

GB/T 3186, *Paints, varnishes and raw materials for paints and varnishes – Sampling*

GB/T 6682-2008, *Water for analytical laboratory use – Specification and test methods*

GB/T 6750-2007, *Paints and varnishes – Determination of density – Pycnometer method*

GB/T 8170-2008, *Rules of rounding off for numerical values and expression and judgement of limiting values*

GB/T 9265-2009, *Determination for alkali resistance of film of architectural paints and coatings*

method: place the long side of a straight ruler greater than 430 mm closely on the surface of cement panels containing no asbestos fibre; then move along the long and short sides, parallel to cement panels containing no asbestos fibre; observe the gap between straight ruler and cement panels containing no asbestos fibre. If there is no visible gap, then it meet the requirements for flatness.

5.4 Preparation of test sample panels

5.4.1 Sample preparation

When the dilution ratio is not indicated for products to tested, make panels after stirring uniformly. When the dilution ratio is indicated for products to be tested, except for the item of contrast ratio, panels needs to be made for the others to carry out the items of inspection; panels shall be made after mixing uniformly in accordance with the dilution ratio specified; if the proportion is within a range, an intermediate value shall be taken.

5.4.2 Preparation of primer test sample panels

5.4.2.1 Use the brush coating method for primers to make panels. First determine density D of each sample as specified in GB/T 6750-2007; the brush coating-mass m is calculated in accordance with equation (1):

$$m = D \times S \times k \quad \dots\dots\dots (1)$$

where:

m – the value of one pass of brushing coating-mass of wet-film thickness 80 μm , in g;

D – the value of sample density after dilution in accordance with the dilution ratio specified, in g/mL;

S – the value of sample panel area, in cm^2 ;

k – 80×10^{-4} , in cm.

Each pass of brushing coating-mass: the calculated brush coating-mass ± 0.1 g.

When, for some primers of low viscosity, it is impossible to make panels in accordance with the calculated brush coating-mass, the brush coating-mass can be reduced as appropriate, and the actual brush coating-mass shall be indicated in report; when, for some primers, it is impossible to make panels in accordance with the calculated brush coating-mass, then water shall be added to dilute, and the dilution ratio and actual brush coating-mass shall be indicated in report.

5.4.2.2 Unless agreed otherwise, the type of base material, dimensions of test panel, number of test panel, coating amount and curing periods of inspection items of primer making-panels shall be as specified in Table 3.

5.5.3.1 Application property of primers

Use a brush to brush sample on the smooth surface of test panels; if there is no difficulty in the movement of the brush, then it is assessed as "Without obstacle in brush coating".

5.5.3.2 Application property of finishes

Use a brush to brush sample on the smooth surface of test panels; control the coating amount to the wet-film thickness about 100 μm . Make the long sides of test panel in the horizontal direction; place the short sides vertically to form an angle of 85° to the horizontal plane. After 6 h, use the same method to brush the second pass of sample; if, during the second pass of brush coating, there is no difficulty in the movement of the brush, then it is assessed as "Without obstacle in the second pass of brush coating".

5.5.4 Low-temperature stability

Carry out 3 cycles of test in accordance with Method A of GB/T 9268-2008.

5.5.5 Low-temperature film-forming property

Place 200 g of sample, base material and 200 μm gap wet-film preparator in the environment at $(5 \pm 1)^\circ\text{C}$; take out after 2 h; within 30 s, use the wet-film preparator just taken out to coat one pass; immediately put the test panel back (for a cryogenic box having the forced air blast function, one metallic cover shall be placed over the surface of the test panel during test); take out the test panel after 24 h; immediately check the drying degree using surface drying Method B of GB/T 1728-1979 and carry out visual inspection for film appearance. If the film is dry, without cracking, blooming or visible cissing, then it is assessed as "No abnormal in film-forming at 5°C".

5.5.6 Film appearance

Place the test panel aside for 24 h after the test of 5.5.3; carry out visual inspection for film. If there is no visible cissing and the film is uniform, then it is assessed as "Normal".

5.5.7 Drying time

Carry out test using the surface drying Method B of GB/T 1728-1979.

5.5.8 Alkali resistance

Carry out test as specified in GB/T 9265-2009; if at least two of three test panels are free from the defects such as bubbling and lifting, then it can be assessed as "No abnormal". In case of any defect as above, it shall be described as specified in GB/T 1766-2008.

5.5.9 Anti-efflorescence

Annex A

(Normative)

Method for testing anti-efflorescence

A.1 Main materials and apparatus

A.1.1 Preparation of PVA-iron blue water dispersion liquid

A.1.1.1 Preparation of 2% (mass fraction) PVA (powdery polyvinyl alcohol 1788) water solution

Add a calculated amount of water into a container; add powdery polyvinyl alcohol 1788 slowly while stirring rapidly; after the addition of polyvinyl alcohol is finished, continue to stir rapidly until it is fully stirred (at least 1 h); remove it when there is no block or caked masses; after filtration on a 177 μm filter-screen; allow it to stand in the test environment as specified in 5.2 with the storage period not exceeding 1 month; in case of aggregation, deposition, etc., use it after mixing uniformly by mechanical stirring at a low speed.

A.1.1.2 Preparation of PVA-iron blue water dispersion liquid

Add a calculated amount of 2% (mass fraction) PVA water solution (A.1.1.1) into a container; add slowly LA09-03 iron blue pigment as required in HG/T 3001-1999 while stirring; the mass ratio of 2% (mass fraction) PVA water solution (A.1.1.1) to iron blue pigment is 4:1; stir rapidly for about 10 min ~ 15 min until uniform; after removing, allow to stand for 12 h in the test environment as specified in 5.2 before use, with the storage period not exceeding 15 d. Iron blue pigment is preferably supplied on a unified basis, so as to ensure its quality.

A.1.2 2% (mass fraction) sodium hydroxide water solution

One day before test, prepare and store in a closed container; store overnight in the test environment as specified in 5.2 to ensure the temperature of the solution achieves standard conditions.

A.1.3 Base material for test

Use cement MDF board containing no asbestos fibre reinforcement as the base material; the dry volume density of test panel is $(1.2 \pm 0.1) \times 10^3 \text{ kg/m}^3$; it is preferably supplied on a unified basis, so as to ensure its quality. Clear the floating ash on the surface; take test panel out after immersing in water for 7 d; store in the test environment for at least 7 d as specified in 5.2.

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