



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Limit of harmful substances of interior floor coatings

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1 Scope

This Standard specifies the terms and definitions, product classification, requirements, test methods, inspection rules and package marks etc. involved in the allowable limits of substances harmful to humans and the environment in interior floor coatings.

Note. Interior refers to the inside of places where the top is blocked or the top and the surroundings are blocked, such as industrial plants, underground parking lots, hospitals, schools, gymnasiums and other places. It is relative to places where the top and the surroundings are not blocked.

This Standard applies to various interior floor coatings with organic polymers as the main adhesives, which are painted on the base surface of floors such as cement mortar, concrete, stone, plastic or steel, for decorating and protecting the ground and other special functions (such as antistatic, corrosion resistance, anti-skid, etc.); including primers, mid-coats, topcoats and finishes.

2 Normative references

The following documents are indispensable for the application of this document.

For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

GB/T 1725-2007 Paints, varnishes and plastics - Determination of non-volatile-matter content

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

GB/T 6682 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 9750 Marks for package of coating products

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Volatile organic compounds; VOC Any organic liquid and/or solid which can evaporate naturally under the normal temperature and pressure of the atmospheric environment in which it is exposed.

3.2 Volatile organic compounds content; VOC content The mass of volatile organic compounds in the coatings measured under the specified conditions.

3.3 Water-based floor coatings The floor coatings which use water as the main dispersion medium.

3.4 Solvent-based floor coatings The floor coatings which use non-active organic solvents as the main dispersion medium.

4 Product classification

This Standard divides interior floor coating products into three categories.

5 Requirements

The limit of harmful substances in interior floor coating products shall meet the requirements of Table 1.

6.1 Sampling

The product is sampled according to GB/T 3186, or according to the agreed method. The sampling amount is determined according to the inspection needs.

6.2.5 The test of formaldehyde in water-based floor coatings is carried out

according to the provisions of GB/T 23993-2009.

6.2.6 The total content of free diisocyanates (TDI and HDI) is tested in

accordance with GB/T 18446-2009.

6.2.7 For the sum of phthalates, prepare mixed samples according to the

construction proportion indicated by the product; then test according to the provisions of Appendix C in GB 24613-2009; convert it to the content in the dry coating film.

7.1.1 All the requirements listed in this Standard are type inspection items.

Under normal production conditions, type inspection shall be carried out at least once a year.

7.1.2 Type inspection shall be carried out at any time in one of the following situations.

7.2.1 The determination of inspection results is carried out according to the rounding value comparison method in GB/T 8170-2008.

8.1 For the product package marks, in addition to meeting the requirements of

GB/T 9750, products that pass the inspection according to this Standard can be clearly indicated on the package marks.

8.2 For floor coating products composed of bi-component or multi-component, the construction proportion of each component shall be specified on the package mark or in the product manual.

Appendix A (Normative) Test of volatile organic compounds content, total content of benzene,

toluene, ethylbenzene and xylene, and total content of glycol ethers and ether esters in water-based floor coatings - gas chromatography A.1 Scope A.3 Materials and reagents

A.3.1 Carrier gas. nitrogen or helium; purity is $\geq 99.995\%$.

A.3.2 Fuel gas. hydrogen; purity is $\geq 99.995\%$.

A.3.3 Combustion-supporting gas. air.

A.3.4 Auxiliary gas (septum purge and makeup gas). nitrogen with the same properties as the carrier gas.

A.4 Instruments and equipment A.4.1 Gas chromatograph with the following configuration.

A.4.2 Injector. micro-syringe. The capacity is at least twice the injection volume.

A.4.3 Sample preparation bottle. about 20 mL glass bottle with a sealable cap.

A.4.4 Balance. Accuracy is 0.1 mg.

A.5 Test conditions of gas chromatography A.6 Test procedures A.6.1 General All tests are carried out in two parallel determinations.

A.6.2 Density The density test is carried out according to GB/T 6750-2007. The test temperature is $(23 \pm 2)^{\circ}\text{C}$.

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