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

LY/T 3231-2020

**Water-based UV-curing coatings on indoor woodenware
(English Translation)**

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Foreword

This document is in accordance with GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

Appendix A of this document is a normative appendix.

This document was proposed and managed by the National Wood-based Panel Standardization Technical Committee (SAC/TC 198).

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1 Scope

This document stipulates the classification, requirements, sample preparation and testing of water-based ultraviolet (UV) curable coating products for indoor wooden products Inspection methods, inspection rules and signs, packaging, transportation and storage.

This document is applicable to water-based UV-curable coatings composed of UV-curable resin, photoinitiator, water and other ingredients. It is mainly used for Factory coating of wooden furniture, floors, doors, wall panels and other wooden products for indoor use.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated reference documents, Only the version corresponding to that date is applicable to this document; for undated references, the latest version (including all amendments) is applicable to this document file.

GB/T 1728-1979 Determination of drying time of paint film and putty film GB/T 1766-2008 Paint and varnish coating aging rating method GB/T 1768-2006 Determination of abrasion resistance of paints and varnishes by rotating rubber grinding wheel method GB/T 3186 Sampling of paints, varnishes and raw materials for paints and varnishes GB/T 4893.1-2005 Determination of resistance to cold liquids on furniture surfaces GB/T 4893.2-2005 Determination of resistance to heat and humidity on furniture surfaces GB/T 4893.3-2005 Determination of resistance to dry heat on furniture surfaces GB/T 6682-2008 Analytical laboratory water specifications and test methods GB/T 6739-2006 Paint and varnish pencil method for determination of paint film hardness GB/T 6753.1-2007 Determination of Grinding Fineness of Paints, Varnishes and Printing Inks GB/T 8170-2008 Numerical rounding rules and the expression and determination of limit values GB/T 9268-2008 Determination of freeze-thaw resistance of latex paint GB/T 9271-2008 Paint and varnish standard test board GB/T 9278 Temperature and Humidity for Condition Adjustment and Test of Coating Samples GB/T 9286-1998 Cross-cut test of paint and varnish film GB/T 9750 Paint product packaging mark GB/T 9754-2007 Paints and varnishes Determination of 20°, 60° and 85° specular gloss of paint films without metallic pigments GB/T 13491 General Rules for Packaging of Coating Products GB/T 15036.1-2018 Solid Wood Flooring Part 1: Technical Requirements GB/T 15104 Decorative veneer wood-based panel GB/T 18187-2000 Brewed vinegar GB 18582-2008 Limits of harmful substances in interior decoration materials and interior wall coatings GB/T 23982-2009 Determination of anti-blocking properties of wood coatings GB/T 23983-2009 Determination of yellowing resistance of wood coatings GB/T 23993-2009 Determination of formaldehyde content in water-based paints-Acetylacetone spectrophotometric method GB/T 23999-2009 Water-based wood coatings for interior decoration GB 24409-2009 Limits

of hazardous substances in automotive coatings GB/T 26704-2011 pencil GB/T 34675-2017 Determination of Volatile Organic Compound (VOC) Content in Radiation Curing Coatings

3 Terms and definitions

There are no terms and definitions that need to be defined in this document.

4.1 Classified by function

- Top coat;
- Primer.

4.2 According to the purpose of topcoat

- Top coat for floor;
- Top coat for furniture;
- Finish paint for other decoration parts.

5.1 Performance indicators

The performance indexes of water-based UV curable coatings for indoor wood products should meet the requirements of Table 1.

a This item is limited to products that have requirements during storage, transportation and use.

b Floor primer does not control this item.

c The test conditions of the project can also be negotiated.

d This item is limited to products with similar features such as resistance to yellowing.

5.2 Hazardous substances

5.2.1

The substances listed in Appendix A shall not be added artificially in the water-based UV curable coating products for indoor wood products.

5.2.2

The limit of harmful substances in water-based UV curable coating products for indoor wood products should meet the requirements of Table 2.

6.1 Sampling

The product is sampled according to GB/T 3186, or it can be sampled according to the method agreed by both parties in the agreement. The sampling amount is determined according to the needs of the inspection.

6.2 Test environment

The state adjustment of the test sample and the temperature and humidity of the test should meet the requirements of GB/T 9278.

6.3.1 Substrate and its treatment

The substrate and coating requirements for inspection of each item are shown in Table 3. The light-colored veneer plywood meets the technical requirements of GB/T 15104, and the substrate should be guaranteed no deformation occurs during the test, and it should be placed for more than 7 days under 5.2 conditions before use. Shuiqinggang (beech) solid wood board or other varieties Solid wood flooring meets the requirements of GB/T 15036.1-2018, and the requirements and treatment of glass plates and aluminum plates should meet the requirements of GB/T 9271-2008.

The requirements for white porcelain tiles for external use or white substrates of other materials shall meet the requirements of GB/T 23983-2009, 6.1.

Note: Light-colored veneer plywood can be made of white beech, white maple, white oak and other light-colored varieties.

6.3.2.1 General requirements

The prescribed wire bar coater is used for blade coating and board coating, and it can also be coated by curtain coating, roller coating, spray coating, brush coating, etc. after negotiation.

Use the wire bar coater of specification 40, and make the plate according to the requirements of Table 3. The curing conditions shall be indicated in the report.

Note: Size 40 means that the diameter of the winding steel wire tightly wound on the stainless steel rod is 0.40 mm.

6.3.2.2 Preparation of single-coated samples

Curing performance, sandability, gloss, pencil hardness, adhesion (primer) items are scraped out with a single paint, and it needs to be allowed to stand after scraping.

The standing conditions are negotiated by both parties, and then solidified according to the stipulated or agreed conditions.