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General technical requirements for wooden furniture

木家具通用技术条件

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General technical requirements for wooden furniture

1 Scope

This document stipulates the requirements, inspection rules and markings, instructions for use, packaging, transportation and storage of wooden furniture; describes the corresponding test methods; defines terms and definitions; gives classifications.

This document is applicable to the quality control of wooden furniture design, production, sales services, inspection and testing.

2 Normative references

The contents in the following documents constitute an indispensable clause in this document through normative references in the text. Among them, only the version corresponding to the date is applicable to this file; the latest version (including all modifications) of the reference files without the date is applicable to this file.

GB/T 250 Textiles - Tests for color fastness - Grey scale for assessing change in color

GB/T 1043.1 Plastics - Determination of Charpy impact properties - Part 1: Non-instrumented impact test

GB/T 1927.4-2021 Test methods for physical and mechanical properties of small clear wood specimens - Part 4: Determination of moisture content

GB/T 2828.1-2012 Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection

GB/T 3920-2008 Textiles - Tests for color fastness - Color fastness to rubbing

GB/T 4893.1-2021 Test of surface coatings of furniture - Part 1: Determination of surface resistance to cold liquids

GB/T 4893.2-2020 Test of surface coatings of furniture - Part 2: Determination of resistance to wet heat

GB/T 4893.3-2020 Test of surface coatings of furniture - Part 3: Determination of resistance to dry heat

GB/T 4893.4-2023 Test of surface coatings of furniture - Part 4: Determination of

5.8 Limited amount of hazardous substances (basic items)

It shall comply with the corresponding provisions of GB 18584-2024. The testing of formaldehyde, benzene, toluene, xylene, total volatile organic compounds (TVOC) is only applicable to indoor wooden furniture products.

5.9 Electrical safety (basic item)

The electrical part in the product shall comply with the relevant provisions of GB 44246-2024.

5.10 Flame retardancy (basic item)

The soft cladding in the product shall comply with the relevant provisions of GB 17927-2024.

6 Test methods

6.1 Determination of main dimensions and their deviations

The test piece shall be placed on a flat panel or flat ground and measured using a steel ruler or tape measure with accuracy of no less than level II. The dimensional deviation is the difference between the product identification value and the measured value.

6.2 Shape and position tolerance measurement

6.2.1 Warpage

Warpage determination instrument with an accuracy of no less than 0.1 mm is used. Select the panel with the most severe warpage; place the instrument on the diagonal line of the panel for measurement; use the maximum distance as the measured value of warpage.

6.2.2 Flatness

A flatness measurement device with an accuracy of no less than 0.01 mm is used. Select 3 panels with the most severe unevenness; measure the distance between the reference line within a length of 0 mm ~ 150 mm on their surface; use the maximum distance as the flatness measurement value.

6.2.3 Adjacent edge perpendicularity

Use a steel ruler or steel tape measure with accuracy of no less than level II, to measure the two diagonal lines and opposite sides of the rectangular panel or frame; the difference is the measurement value of the adjacent side perpendicularity.

6.2.4 Distance deviation

A distance deviation measurement device with an accuracy of no less than 0.1 mm is used. During measurement, the maximum distance between the two adjacent surfaces of the door and the frame or the door and the door, door and drawer, drawer and frame, drawer and drawer shall be selected. In the adjacent surface, one surface is selected as the measurement reference surface. The base surface of the appliance is placed on the measurement base surface. The measurement of the appliance is used to measure another adjacent surface (and one or more parts are measured along the adjacent surface). When the measured value is both positive (or negative), the maximum absolute value is the measured value of distance deviation; when the measured value is positive or negative, the sum of the maximum absolute value is the measured value of distance deviation, meanwhile the maximum measured value is the rated value of distance deviation.

6.2.5 Parting

The measurement is performed using a feeler gauge with an accuracy of no less than 0.01 mm. Before measurement, the drawer or door shall be opened and closed 3 times, to keep the drawer or door in the closed position. When measuring the drawer parting, the drawer shall be close to any side, to measure the maximum parting on the other side. When measuring the door parting, the largest parting shall be measured; the maximum measured value shall be used as the rating value for the parting.

6.2.6 Foot stability

Place the test piece on a flat plate or on a flat ground; use a feeler gauge with an accuracy of no less than 0.01 mm, to measure the distance between the foot or bottom surface and the flat plate; record the maximum value as the measured value.

6.2.7 Sag and swing

Determination is carried out using a steel ruler or steel tape measure with an accuracy of no less than level II. Place the steel ruler or steel tape measure on the horizontal plane and side adjacent to the measurement part of the test piece. Extend the test piece out of two-thirds of the total length. Measure the free sagging of the horizontal side of the drawer and the left and right swings of the side of the drawer. The measured maximum value is used as the measured value of sag and swing.

6.5 Determination of physical and chemical property

6.5.1 Physical and chemical properties of paint film coating

6.5.1.1 Test location

Generally, it can be used on the surface of the product horizontal components. When sampling is difficult, it can also be performed on specimens that are exactly the same as the sample material and process.

6.5.1.2 Paint film liquid resistance

According to the provisions of GB/T 4893.1-2021, 10% sodium carbonate solution is used for 24 h; 10% acetic acid solution is used for 24 h. One test area is selected each for acid resistance and alkali resistance.

6.5.1.3 Damp heat resistance of paint film

According to the provisions of GB/T 4893.2-2020, 20 min, 70 °C. Select 1 test area for the test.

6.5.1.4 Dry heat resistance of paint film

According to the provisions of GB/T 4893.3-2020, 20 min, 70 °C. Select 1 test area for the test.

6.5.1.5 Paint film adhesion

According to the provisions of GB/T 4893.4-2023, use the coating cross-cutting method. Select 1 test area for the test.

6.5.1.6 Cold & hot temperature difference resistance of paint film

According to the provisions of GB/T 4893.7-2013, at high temperature (40 ± 2) °C and relative humidity (95 ± 3)%, perform it for 1 h. At low temperature (-20 ± 2) °C, perform it for 1 h, for 3 cycles. Select 1 test area for the test.

6.5.1.7 Paint film wear resistance

According to the requirements of GB/T 4893.8-2023, the number of tests is 60 revolutions. Select 3 test areas for the test.

6.5.1.8 Paint films impact resistance

According to the provisions of GB/T 4893.9-2013, the impact height is 50 mm. Select 1 test area for the test.

6.5.1.9 Paint film yellowing resistance

According to the provisions of QB/T 5660-2021, use the blue wool cloth of level 6. Select 1 test area for the test.

6.5.2 Physical and chemical performance test of cladding (flexible and overlaid)

6.5.2.1 Testing location

Generally, it can be used on the surface of the product horizontal components.

6.5.2.2 Hot & cold cycle resistance

According to the provisions of 4.40 in GB/T 17657-2022, the number of test pieces is 3.

6.5.2.3 Dry heat resistance

According to the provisions of GB/T 4893.3-2020, perform it for 20 min at 70 °C. Select 1 test area for the test.

6.5.2.4 Damp heat resistance

According to the provisions of GB/T 4893.2-2020, perform it for 20 min at 70 °C. Select 1 test area for the test.

6.5.2.5 Scratch resistance

Load 0.5 N according to the provisions of 4.42 in GB/T 17657-2022. The number of test pieces is 3.

6.5.2.6 Surface gluing strength

According to the provisions of 4.16 in GB/T 17657-2022, the number of test pieces is 3.

6.5.2.7 Contamination resistance

The measurement is carried out according to the provisions of 4.43 in GB/T 17657-2022. Category 5 contaminants with the "*" mark are selected as conventional test pollutants. The test time of acetone and coffee is 16 hours; the test time of the remaining three is 10 minutes. Select 1 test area for each pollutant for testing.

6.5.2.8 Wear resistance

When the surface decorative layer material is polyvinyl chloride film, it shall follow the provisions of 4.45 in GB/T 17657-2022. Other surface decorative layers are ground for 60 revolutions, according to the provisions of GB/T 4893.8-2023.

method described in QB/T 2537-2001. The total mass of the general leather test head is 1000 g, using 500 dry frictions and 250 wet frictions; the total mass of the suede and similar leather test head is 500 g, using 50 dry frictions and 25 wet frictions.

6.5.5.2 Textile fabric pH

The determination is performed according to the method described in GB/T 7573-2009.

6.5.5.3 Leather pH

The determination is performed according to the method described in QB/T 2724-2018.

6.5.5.4 Adhesion firmness of genuine leather and film leather (moving film leather) coatings

The measurement is performed according to the method described in GB/T 39452-2020. Samples are taken on the seat or back of the sample, or samples can also be taken on the same material as the sample.

6.5.6 Corrosion resistance test of metal handles

The determination is performed according to the method described in QB/T 3826-1999.

6.6 Mechanical performance test

6.6.1 Strength and durability of tables

It is performed according to the provisions of GB/T 10357.1. The test level is selected according to the applicable conditions; the test level 2 is generally selected.

6.6.2 Strength and durability of chair and stool

Chair and stools are in accordance with the provisions of GB/T 10357.3. The test level is selected according to the applicable conditions; the test level 3 is generally selected.

6.6.3 Strength and durability of single-layer bed

It is performed according to the provisions of GB/T 41650-2022.

6.6.4 Strength and durability of bunk bed

It is performed according to the provisions of GB/T 24430-2023.

6.6.5 Strength and durability of cabinet

It is performed according to the provisions of GB/T 10357.5-2023.

6.6.6 Table stability

It is performed according to the provisions of GB/T 10357.7.

6.6.7 Stability of chairs and stools

The recliner and rocking chairs are subject to the provisions of GB/T 10357.8; other chairs and stools are subject to the provisions of GB/T 10357.2.

6.6.8 Cabinet stability

It is performed according to the provisions of GB/T 10357.4-2023. The stability of the frame is performed with reference to this document.

6.6.9 Bunk bed stability

It is performed in accordance with the provisions of GB/T 24430-2023.

6.7 Structural safety

It is performed in accordance with the provisions of GB 28008-2024.

6.8 Limited content of hazardous substances

It is performed in accordance with the provisions of GB 18584-2024.

6.9 Electrical safety

The electrical safety in the product is carried out in accordance with the provisions of No.1 in Table A.1 of GB 44246-2024.

6.10 Flame retardancy

It is performed in accordance with the provisions of GB 17927-2024.

7 Inspection rules

7.1 Inspection classification

Inspections are divided into exit-factory inspection and type inspection.

In the exit-factory inspection items of a single product, if the basic items are fully compliant, meanwhile the number of noncompliant items in general item is not more than 3, it is judged as qualified. If it is lower than the requirements for the qualified product, it is judged as unqualified exit-factory product.

7.2.3.2 Determination of batch products

For the product in the sample volume taken according to Table 7, if the number of unqualified products is less than or equal to the number of acceptance (Ac), the batch of products shall be determined to be a qualified batch; if the number of unqualified products is greater than or equal to the number of rejection (Re), the batch of products shall be determined to be a unqualified batch.

7.3 Type Inspection

7.3.1 Inspection items

All items in Chapter 5 except contract requirements and arbitration inspection shall be included.

7.3.2 Inspection timing

During formal production, inspection shall be carried out regularly. Type inspection shall be carried out in one of the following situations:

a) During the type finalization of new product or old product after trans-plant production;

b) When there are major changes in the structure, materials, processes of the product, which may affect the performance of the product;

c) When the production is restored after suspension for more than half a year;

d) When the exit-factory inspection results are significantly different from the last type inspection.

7.3.3 Sampling rules

During one inspection cycle, 2 pieces (sets) of samples are randomly selected from the same qualified batch of products with exit-factory inspection, of which 1 piece (set) is sent for inspection and 1 piece (set) is sealed.

7.3.4 Inspection procedures

Follow the principle that does not affect the accuracy of subsequent inspection items.

7.4 Rules for determining test results

In the type inspection items, all basic items shall be in compliance; if there are no more than 4 noncompliant items in general items, the product will be evaluated as a qualified product. Those that are below the requirements of qualified products are unqualified products. If all randomly taken samples are qualified according to 7.3.3, the type inspection of this batch of products will be determined to be qualified.

7.5 Re-inspection rules

If the product fails the type inspection, it can be re-inspected once for the same batch of samples (including sealed samples). The re-inspection item is the noncompliant items in the first inspection or the uninspected items due to sample damage. It shall be evaluated in accordance with the provisions of 7.4; the "re-inspection" shall be indicated in the inspection results. Customized furniture without similar products will no longer be tested.

8 Marking, instructions for use, packaging, transportation and storage

8.1 Marking

Product markings shall include at least the following:

a) Product name, specifications, models;

b) Implemented standard number;

c) The name of the main material and its use location;

d) Certificate of inspection and production date;

e) Chinese producer name and address.

8.2 Instructions for use

The preparation of product instructions shall be in accordance with the provisions of GB/T 5296.6; the content shall at least include:

a) Product name, specification model, standard number;

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