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General technical requirements for plastic furniture

塑料家具通用技术条件

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Table of Contents

General technical requirements for plastic furniture

1 Scope

This Standard specifies terms and definitions, requirements, test methods, inspection rules, marks, instructions on use, packaging, transport, storage for plastic furniture.

This Standard is applicable to plastic furniture products.

2 Normative references

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

GB/T 250-2008, *Textiles - Tests for colour fastness - Grey scale for assessing change in colour*

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

GB/T 1732, *Determination of impact resistance of film*

GB/T 2035, *Terms and definitions for plastics*

GB/T 2411, *Plastics and ebonite - Determination of indentation hardness by means of a durometer (shore hardness)*

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 3326, *Furniture - Main sizes of tables, chairs and stools*

GB/T 3327, *Furniture - Main sizes of storage units*

GB/T 3328, *Furniture - Main sizes of beds*

GB 5296.6, *Instructions for use of products of consumer interest - Part 6: furniture*

GB/T 6739-2006, *Paints and varnishes - Determination of film hardness by*

pencil test

GB/T 9286, *Paints and varnishes - Cross cut test for films*

GB/T 10357.1, *Test of mechanical properties of furniture - Part 1: Strength and durability of tables*

GB/T 10357.2, *Test of mechanical properties of furniture - Part 2: Stability of chairs and stools*

GB/T 10357.3, *Test of mechanical properties of furniture - Part 3: Strength and durability of chairs and stools*

GB/T 10357.4, *Test of mechanical properties of furniture - Part 4: Stability of storage units*

GB/T 10357.5, *Test of mechanical properties of furniture - Part 5: Strength and durability of storage units*

GB/T 10357.6, *Test of mechanical properties of furniture - Part 6: Strength and durability of beds*

GB/T 10357.7, *Test of mechanical properties of furniture - Part 7: Stability of tables*

GB/T 10357.8, *Test of mechanical properties of furniture - Part 8: Stability of chairs with tilting or reclining mechanisms when fully reclined, and rocking chairs*

GB/T 16422.2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc sources*

GB/T 17657-1999, *Test methods of evaluating the properties of wood-based panels and surface decorated wood-based panels*

GB 20286, *Requirements and mark on burning behavior of fire retarding products and subassemblies in public place*

GB 28007-2011, *General technical requirements for children furniture*

GB/T 28202-2011, *Furniture industry terminology*

GB 28481, *Limit of harmful substances of plastic furniture*

QB/T 3826, *Corrosion-resistant testing method of the metal deposits and conversion coatings for the light industrial products - Neutral salt spraying test (NSS)*

Table 3 -- Appearance

S/N	Inspection item		Requirements	Item classification	
				Basic	General
1	Appearance of plastic piece		No cracks, obvious deformation, shrinkage, pinhole	√	
2			No depressions, flashes, wrinkles, sputum	√	
3			No bubbles, impurities, scars, white marks		√
4			Surface shall be smooth and free of scratches, burrs, galling, and stains		√
5			No obvious color difference	√	
6	Furniture hardware appearance	Plating piece	Surface of coating shall be free from rust, burrs and exposed bottom	√	
7			Surface of coating shall be smooth and flat, and there shall be no defects such as blistering, yellowing, speckle, burnt, cracks, scratches and bruises		√
8		Spraying piece	Coating shall be free from leakage and rust	√	
9			Coating shall be smooth and uniform, with consistent color, and shall be free of defects such as sag, crepe, wrinkle, and flying paint		√
10		Metal alloy piece	No rust, oxide film peeling-off, edge, sharp edge	√	
11			Surface is fine and there shall be no defects such as cracks, burrs, and black spots		√
12		Welded piece	Welding part shall be firm and shall be free of de-soldering, soldering, and welding	√	
13			Uniform welds, no defects such as burrs, sharp edges, splashes, cracks		√
14	Other appearance		There shall be no burrs, cutting edges and corners in parts that touch human body or collect objects	√	

Use warpage measuring appliance of which precision is not less than 0.1mm. Select a plate with the most serious warpage. Place appliance on diagonal of the plate to measure. Take the maximum distance as measured value of warpage.

5.3.2 Flatness

Use flatness measuring appliance of which precision is not less than 0.03mm. Select three plates with the most serious unevenness. Measure distance from reference line within a length of 0~150mm on surface. Take the maximum distance as measured value of flatness.

5.3.3 Adjacent side perpendicularity

Use steel ruler or tape measure of which precision is not less than 1mm. Measure lengths of two diagonals and opposite sides of a rectangular plate or frame. Difference shall be measured value of adjacent side perpendicularity.

5.3.4 Dislocation

Use dislocation measuring appliance of which precision is not less than 0.1mm. Select tested part with maximum distance between adjacent surfaces to measure. Select any surface from this adjacent surface as measuring reference surface. Place base surface of appliance on measuring reference surface. Measuring surface of appliance measures another adjacent surface (along with adjacent surface, measure one or more parts). When measured values are both positive (or negative) values, take the maximum absolute value as measured value of dislocation. When measured values are positive and negative, take sum of maximum absolute values as measured value of dislocation and maximum measured value as evaluated value of dislocation.

5.3.5 Splitting

Use feeler gauge to measure. Before measurement, it shall open and close drawer or door three times to make drawer or door in closed position. Then measure splitting value at 5mm inside splitting ends. Take the maximum value as evaluated value of splitting.

5.3.6 Sag, swing degree

Use steel ruler or tape measure of which precision is not less than 1mm to measure. Place steel ruler on horizontal and side surfaces adjacent to measuring part of test piece. Extend test piece at 2/3 of total length. Measure free sag of horizontal edge of drawer and left-right swinging value of drawer side. Take maximum value as measured value of sag and swing degree.

5.3.7 Foot stability

Place test piece on a flat plate or on a flat ground. Use feeler gauge to measure some foot or distance between bottom and flat plate.

5.4 Appearance

5.4.1 Discoloration, color fading

Test 3 positions respectively on product appearance or interior finish. Use a wet skim white gauze with bare hands to apply a force to rub back and forth 3 times at each place. Reciprocating distance of rubbing is 200mm~300mm. Observe whether gauze has color on painted part.

5.4.2 Holes and gaps

In accordance with 7.5.3 in Gb 28007-2011.

5.4.3 Other appearance

It shall, under natural light or approximate natural light (e.g. 40W fluorescent light) of which illumination is in a range of 300lx~600lx, within a line of sight of 700mm~1000mm, use visual inspection or steel ruler of which precision is 0.5mm to measure. When there is a dispute, three people shall jointly test and use the same opinion of two or more people as test result.

5.5 Physical and chemical properties

5.5.1 Plastic piece

5.5.1.1 Heat-cold resistance cycle

In accordance with 4.31.1 in GB/T 17657-1999.

5.5.1.2 Hardness

In accordance with GB/T 2411.

5.5.2 Other pieces

5.5.2.1 Hardness

In accordance with GB/T 6739-2006.

5.5.2.2 Impact strength

In accordance with GB/T 1732.

5.5.2.3 Corrosion resistance

5.5.2.3.1 Preparation of test plate

Strength and durability of tables and tea tables shall be performed according to provisions on level 3 in GB/T 10357.1. Strength and durability of chairs and stools shall be performed according to provisions on level 3 in GB/T 10357.3. Strength and durability of single-layer bed shall be performed according to provisions of GB/T 10357.6. Strength and durability of cabinets and racks shall be performed according to level 2 in GB/T 10357.5. Stability of tables and tea tables shall be performed according to provisions of GB/T 10357.7. Stability of chairs and stools shall be performed according to provisions of GB/T 10357.2 and GB/T 10357.8. Stability of cabinets and racks shall be performed according to provisions of GB/T 10357.4.

5.7 Hazardous substance limit

In accordance with GB 28481.

5.8 Flame retardancy

Flame retardancy of plastic furniture used in public places shall be performed in accordance with GB 20286. Flame retardancy of plastic furniture used in other places shall be performed according to agreement between supplier and purchaser.

5.9 Marks

Check whether product has marks. Check mark contents according to 7.1.

5.10 Instructions on use

Check whether product has instructions on use. Check contents of instructions on use according to 7.2.

6 Inspection rules

6.1 Inspection classification

Inspection is classified into exit-factory inspection and type inspection.

6.2 Exit-factory inspection

6.2.1 Inspection items

Exit-factory inspection items include 4.2, 4.3, 4.4, 4.9 and 4.10.

6.2.2 Sampling and batching rules

Exit-factory inspection shall be subjected to full inspection. Since batch size is large, if it is difficult to perform full inspection, it shall perform sampling

6.3.2 Type inspection timing

Type inspection shall be performed in one of the following situations:

a) during normal production, type inspection shall be performed regularly; inspection period is usually one year;

b) when great changes happen on raw and auxiliary materials and production process thereof;

c) production is resumed after discontinued production for a long time;

d) when trial model identification for new product or old product produced in transferred plant;

e) when user requests type inspection and it is specified in order contract;

f) when quality supervision agency requires type inspection.

6.3.3 Sampling rules

Within an inspection period, randomly extract 2 samples from products that are produced recently, one for inspection and the other for storage.

6.3.4 Type inspection procedures

Inspection procedures shall follow a principle of minimizing correctness of remaining inspection items.

6.3.5 Determination of inspection results

6.3.5.1 Determination of single product

When all basic items are accepted, when rejected general items do not exceed 4, this product shall be determined as accepted otherwise it shall be rejected.

6.3.5.2 Determination of set products

Each product of this set of products shall be determined according to 6.3.5.1. When each product is determined as accepted, this set of products shall be accepted otherwise shall be rejected.

6.3.6 Re-inspection rules

If product is determined as rejected by type inspection, when there is objection to test result, it shall re-inspect stored spare sample. Inspect rejected items and un-inspected items due to test piece damage. Assess according to 6.3.5 and indicate “re-inspection” in inspection results.

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