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NATIONAL STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

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GB/T 13306-2011

Replacing GB/T 13306-1991

Plates

标牌

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Foreword

This Standard is drafted according to the rules given in GB/T 1.1-2009 "Directives for Standardization-Part 1: Structure and Drafting of Standards".

This Standard replaces GB/T 13306-1991 "Plates". Compared with GB/T 13306-1991, the main technical changes of this Standard are as follows:

- Adjust the structure and contents of this Standard;
- Add the marking method of plates;
- Modify the material requirements and surface treatment requirements in the technical requirements.

This Standard was proposed by and shall be under the jurisdiction of China Machinery Industry Federation.

Drafting organizations of this Standard: China Productivity Center for Machinery, and Hefei Anlian Trading Co., Ltd.

Chief drafting staffs of this Standard: Li Weirong, Feng Feng, Tang Dong, and Dou Zhi.

The previous edition replaced by this Standard is:

- GB/T 13306-1991.

Plates

1 Scope

This Standard specifies the PLATES' types and dimensions, marking, technical requirements, inspection methods, inspection rules, packing, storage and transportation.

This Standard is applicable to the nameplates, operational sign plates, illustration plates, line schematic diagram plates, design data chart plates, safety sign plates and others (generally referred to as "plates") of various electromechanical equipment, instruments and apparatuses, and various components.

The Chapter "Types and Dimensions" in this Standard is not applicable to the panels, dial plates, trademarks and artistic decoration plates of instruments, apparatuses and household electrical appliances. However, the technical requirements (see Chapter 5) in this Standard may be acted as a reference for the above products.

2 Normative References

The following documents are essential for the application of this Standard. For the dated references, only the dated editions are applicable to this document. For undated references, the latest edition of the normative document (including all amendments) referred to applies.

GB/T 191 "Packaging - Pictorial Marking for Handling of Goods"

GB/T 730 "Textiles - Tests for Colour Fastness - Quality Control of Blue Wool Reference Materials 1 to 7"

GB/T 827 "Rivets for Name Plate"

GB/T 1720 "Method of Test for Adhesion of Paint Films"

GB/T 1804 "General Tolerances - Tolerances for Linear and Angular Dimensions without Individual Tolerance Indications"

GB/T 2423.3 "Environmental Testing for Electric and Electronic Products - Part 2: Testing Method - Test Cab: Damp Heat Steady State"

GB/T 2423.16 "Environmental Testing for Electric and Electronic Products -

1:3.2	12×40	34						
1:4	12×50	44						
1:5	12×63	57						
1:1	16×16	-	-	1.0	-	-	-	
1:1.25	16×20				2.0	1.7	2	
1:1.6	16×25	21			3.0	2.2		
1:2	16×32	26						
1:2.5	16×40	34						
1:3.2	16×50	44						
1:4	16×63	57						
1:5	16×80	74						
1:1	20×20	-			-	-	-	-
1:1.25	20×25	21				2.0	1.7	2
1:1.6	20×32	26			1.0	3.0	2.2	
1:2	20×40	34						
1:2.5	20×50	44						
1:3.2	20×63	57						
1:4	20×80	74						
1:5	20×100	94						
1:1	25×25	19						
1:1.25	25×32	26						
1:1.6	25×40	34						
1:2	25×50	44						
1:2.5	25×63	57						
1:3.2	25×80	74						
1:4	25×100	94						
1:5	25×125	115	1.5	5.0	2.7			
1:1	32×32	26	26	1.0	3.0	2.2	4	
1:1.25	32×40	34						
1:1.6	32×50	44						
1:2	32×63	57						
1:2.5	32×80	74						
1:3.2	32×100	92	24	1.5	4.0			
1:4	32×125	117						
1:5	32×160	152						
1:1	40×40	34	34	1.0	3.0	2.2		
1:1.25	40×50	44						
1:1.6	40×63	57						
1:2	40×80	74						
1:2.5	40×100	92	32	1.5	4.0			
1:3.2	40×125	117						
1:4	40×160	152						
1:5	40×200	188	28	2.5	6.0	2.7		

1:2	160×315	290	135	6.0	12.5	4.3
1:2.5	160×400	375				
1:3.2	160×500	475				
1:4	160×630	600	130		15.0	
1:5	160×800	770				
1:1	200×200	180	180	5.0	10.0	3.2
1:1.25	200×250	230				
1:1.6	200×315	295				
1:2	200×400	375	175	6.0	12.5	4.3
1:2.5	200×500	475				
1:3.2	200×630	600	170		15.0	
1:4	200×800	770				
1:1	250×250	225	225		12.5	
1:1.25	250×315	290	225	6.0	12.5	4.3
1:1.6	250×400	375				
1:2	250×500	470	220		15.0	
1:2.5	250×630	600				
1:3.2	250×800	760	210	8.0	20.0	5.3
1:1	315×315	285	285	6.0	15.0	4.3
1:1.25	315×400	370				
1:1.6	315×500	470				
1:2	315×630	590	275	8.0	20.0	5.3
1:2.5	315×800	760				
1:1	400×400	360	360			4.3
1:1.25	400×500	460				
1:1.6	400×630	590				
1:2	400×800	740	340	10.0	30.0	6.4
1:1	500×500	460	460	6.0	20.0	4.3
1:1.25	500×630	580	450	8.0	25.0	5.3
1:1.6	500×800	740	440	10.0	30	6.4
1:2	500×1000	940				
1:1	630×630	580	580		25	8.4
1:1.25	630×800	750				
1:1.6	630×1000	940	570	30		
1:2	630×1250	1180	560	35		
1:1	800×800	740	740	30		
1:1.25	800×1000	940				
1:1.6	800×1250	1180	730	35		
1:2	800×1600	1530				
1:1	1000×1000	930	930			
1:1.25	1000×1250	1180				
1:1.6	1000×1600	1530				
1:2	1000×2000	1910	910	15	45	

Example 3: Round plates made of commercial purity aluminium 1060, with $D=32\text{mm}$:

Y32-1060 GB/T 13306

Example 4: Sector plates made of commercial purity aluminium 1050A, with $B=16\text{mm}$, $R=32\text{mm}$ and $\varphi=75^\circ$:

Sh16×32×75°-1050A GB/T 13306

5 Technical Requirements

5.1 Dimension and Tolerance of Plates

5.1.1 The plate may be fixed on the product by adopting feasible methods such as sticking, rivets for name plate (GB/T 827), tapping screw, or screw. When the plate is assembled with the product by matching drilling, the diameter of the fastening holes on the plate shall be in accordance with those specified in Table 1 ~ Table 5; when the plate is assembled with the product by prebored holes, then the diameter of fastening holes shall be in accordance with those specified in Table 6.

Table 6 Diameter of Fastening Hole

Unit: mm

Diameter of fastening nail	1.6	2	2.5	3	4	5	6	8
Diameter of fastening hole d	2	2.6	3.1	3.6	4.8	5.8	7	9

5.1.2 The distance between fastening holes (b and l), the diameter of the hole core circle (d_1), the diameter of fastening hole (d), the outline dimensions (B , L and R) and the angle (φ) of fastening holes; and the limit deviations of the 4 right-angles of rectangular plate shall be in accordance with those specified in Table 7.

Table 7 Limit Deviations

Unit: mm

Basic dimensions	b, l, d_1			B, L, R	D	d	φ and right angle
	≤ 250	$> 250 \sim 400$	> 400				
Limit deviations	± 0.2	± 0.25	js12	js14	h14	H13	V (Maximum roughness)

5.1.3 The plate shall be free from torsional deformation, and free from obvious depression and embossment. Its flatness tolerance in the whole plane shall be in accordance with those specified in Table 8. When there are special requirements, the flatness tolerance shall be determined through negotiation between supplier and demander.

5.4 Appearance requirements

5.4.1 For the plates with frame, the frame line around the fastening holes is allowed to be made into arc shape.

5.4.2 The plates stuck by gum are not required to have fastening holes.

5.4.3 The perimeter of plate shall be free from obvious burrs, tooth form and waveform. The front face shall be flat, smooth and clean. The frame lines shall be symmetrical, smooth and continuous, and shall be without fracture.

5.4.4 The size of characters and symbols as well as the thickness of lines shall be regular and striking, be arranged uniformly, and shall not be broken or unclear.

5.4.5 The surface shall be free from cracks and obvious scratching lines as well as the rusty stain, spot and shadow that affect the clearness. The coating shall be free from gas cavities, gas bubbles, mist, blur, wrinkles, peeling or peeling indication and obvious particle impurities.

5.4.6 When sticking the plate, the phenomena such as folds, wrinkles, self coiling, tearing and seepage of adhesive, shall not be present.

5.4.7 The colour of plate shall be clear, striking and uniform without film colour. The plates overprinted with two or more kinds of colours, the edges between colours shall be regular and clear, and the joint place of two kinds of colours shall have no gap.

5.4.8 According to the requirements of product, the plate surface may be treated with dull finish and be made into unglazed or matt.

5.5 Performance requirements

5.5.1 The adhesion of coating shall not be less than Grade 4 as specified in GB/T 1720.

5.5.2 The colour fastness to sunlight shall meet those specified in GB/T 730: It shall not be less than Grade 4 for indoor purpose; and shall not be less than Grade 6 for outdoor purpose.

5.5.3 For the anodized aluminium plates, the thickness of oxide film in dark colour on the front face shall not be less than 10µm; and that of the oxide film in light colour shall not be less than 5µm.

5.5.4 The sealing quality of the oxide film of anodized aluminium plate shall meet those specified in 4.4 "hole sealing quality" of GB/T 8013.1-2007.

5.5.5 When it is required to do abrasion resistance test for the anodized

6.11 The fungus resistance shall be inspected according to the method specified in GB/T 2423.16.

7 Inspection Rules

7.1 The plates shall not leave the factory until they pass the inspection by the manufacturer's inspection department.

7.2 The dimensions and appearance quality of the plates shall be inspected for acceptance according to the general inspection level II and acceptance quality level (AQL) 4.0 by adopting the "normal inspection double sampling plan" specified in GB/T 2828.1.

7.3 The performance quality of the plates shall be inspected for acceptance according to the special inspection level S-2 and acceptance quality level (AQL) 2.5 by adopting the "normal inspection double sampling plan" specified in GB/T 2828.1.

8 Packing, Transportation and Storage

8.1 Packing: Under normal transportation and preservation conditions, the package of the plate shall protect the plate against damages.

8.2 For the plates that are packed in a same packing unit (bag or box), their types, dimensions, material designations and contents shall be the same.

8.3 The product quality certificate shall be contained in the packing case.

8.4 The external surface of packing case (box or bag) shall be clearly indicated as follows:

- a) Name or mark of product;
- b) Name and trademark of manufacturer;
- c) Product quantity;
- d) Exit-factory date;
- e) Mass of each case.

8.5 During the process of transportation and storage, the plates shall be protected against damp, heavy pressure and crash; and shall not be contacted with acid, alkali and other corrosive materials as well as the harmful gas and solvent. The paper box (case) shall not be laid laterally or inversely.

8.6 The pictorial marks of transportation and storage shall be in accordance with those specified in GB/T 191.

END

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