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

GB/T 10357.2-2013

Replacing GB 10357.2-1989

**Test of mechanical properties of furniture - Part 2: Stability of
chairs and stools**

家具力学性能试验 第2部分：椅凳类稳定性

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Foreword

GB/T 10357 "Test of mechanical properties of furniture" is divided into eight parts. - Part

1 Scope

GB/T 10357.2-2013 is the Chinese national standard on test of mechanical properties of furniture - part 2: stability of chairs and stools, in the field of domestic and commercial equipment, entertainment, sport. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 10 October 2013 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2014. Classification: ICS 97.140, CCS Y80. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Part of GB/T 10357 specifies two stability test methods for straight-backed chairs and stools. Test method and calculation method. The loading-force method and loading-force position specified by these two test methods are the same, and the obtained test results are equivalent. This Part applies to various straight-back chairs, stool-type furniture, deck chairs and backrest-tiltable seat-chairs which are adjustable to be straight-back state, and they are used in households, hotels, restaurants and other occasions. This Part does not apply to multi-seat chairs, multi-purpose chairs, deck chairs and backrest-tiltable seat-chairs which are adjustable to be lying state.

2 General test conditions

2.1 Specimen Samples shall be the fully assembled products which are ready to be delivered for use. When there are several assembly methods, it shall be assembled and tested according to the method which is the most detrimental to the stability, and it shall be recorded in the inspection report. When there is no special instructions, it shall not fasten connection parts during the test period.

2.2 Precision Unless otherwise specified, ADOPT the following measurement precision.

2.3 Test placing requirements Before the test, it shall use the stopping block to limit the legs of specimen in case of moving the specimen, however, it shall not hinder the specimen to capsize. For chairs equipped with swivel base, the base shall be rotated to the corresponding position at where the seat surface can be tilted the-most-easily.

3 Test facility

3.1 General requirements for test equipment Unless otherwise specified, any suitable test equipment can be adopted for the test. Because the test results only depend on whether the force is applied correctly rather than on the equipment itself.

3.2 Load pad Rigid circular object is 200 mm in diameter, and its loading surface is spherical, the curvature radius of the spherical surface is 300 mm, the radius of the rounding circle of the edge is 12 mm (See Figure 1). When loading pad is applied at the loading-force portion of the specimen, it shall not restrict the specimen from free tilting.

3.3 Stopping block It is a device used to prevent the specimen from moving but not to limit it from tilting. Its height shall not be greater than 12 mm. If the structure of specimen is special, it is allowed to use greater dimensions, however, its maximum height shall be just enough to prevent the specimen from moving.

4.1 Test method

4.1.1 Test of forward-capsize of chair LEAN the stopping block against the front side of the chair legs (The specific locations are shown in Figure 2); through the loading pad, vertically APPLY 600 N force at the centerline of the seat surface where is 60 mm away from the frontier; then along the horizontal direction, outwardly APPLY 20 N external-force at position of the contacting seat surface; and STAY for at least 5s. (See Figure 2). RECORD whether the chair is capsized and the actually applied force. 4

1.2 Test of lateral-capsize of non-armrest chair LEAN the stopping block against the outside of the lateral chair legs (The specific locations are shown in Figure 3);

4.1.3 Test of lateral capsize of armchair LEAN the stopping block against the outside of the lateral chair legs (The specific locations are shown in Figure 4). Vertically and downwardly

APPLY 250 N force at any intersection of - within the range of 100mm laterally away from the centerline of seat surface AND within the range of 175 mm~250 mm away from the rear edge of the seat surface. And then through the loading pad, vertically and downwardly APPLY 350 N force at the most unstable position on the armrest where is 40 mm away from the edge of armrest's outer side. Then along the horizontal direction, outwardly APPLY 20 N external-force at position of armrest's vertical force loading, and STAY for at least 5s (See Figure 3). RECORD whether the chair is capsized and the actual applied force.

4.2.2 Test of forward capsize of armchair and test of lateral capsize of non-armchair One after the other, LEAN the stopping block against the front side of the front chair-legs and the outside of the two lateral chair-legs. Then one after the other, forwardly APPLY an incremental force F_0 along the midpoint of intersecting line of seat-surface and chair-back, and horizontally APPLY an incremental force F_0 along the intersecting lines of seat-surface and chair-back towards the lateral constrained chair-legs direction. Until the chair-legs which is opposite to the constrained legs just leave off the ground. RECORD the unloading capsize force, and MEASURE the distances of h and a .

4.2.4 Test of backward capsize of chair LEAN the stopping block against the rear of the back chair-legs; then APPLY a gradual increasing force F_0 , along the horizontal backward direction, onto the centerline of chair-back where is 300 mm above the unloaded seat-surface; until the front legs are just leaving off the ground. If the height of chair-back is lower than 300 mm, it shall exert the force at the upper-edge of chair-back.

7 Stability of tables; - Part

8.Stability of chairs and rocking chairs which have inclining and reclining mechanical properties when they are fully leaned backward. This Part is part 2 of GB/T 10357. This Part is drafted according to the rules given by GB/T 1.1-2009. This Part replaces GB/T 10357.2-1989 "Test of mechanical properties of furniture - Stability of chairs and stools". Compared with GB/T 10357.2-1989, main technical changes of this Part are as follows: - MODIFY the standard name, so to be consistent with the standard number; - MODIFY the position of test load, CHANGE "the loading position at centerline of seat surface where is 50 mm away from the frontier and the edge" TO "where is 60 mm away from the frontier and the edge", MODIFY the armrest loading position from

37.5 mm away from the outer edge of the armrest TO 40mm away from that; - ADD the staying time of test load; - MODIFY the requirements of anticline angle when the anticline angle of test chair is adjustable. CHANGE "the anticline angle shall be adjusted to 100°~110° position" TO "the back of chairs shall be adjusted to the most vertical position". - CONVERT the chart in Appendix A directly into calculation formula, and DELETE Appendix A. Please note that some of the contents of this document may involve patents. The issuing organizations of this document do not assume responsibility for the identification of these patents. This Part was proposed by China Light Industry Federation. This Part shall be

administered by National Furniture Standardization Technical Committee (SAC/TC 480). Drafting organizations of this Part. National Centre for Quality Supervision & Inspection of Furniture Products (Guangdong), and Dongguan Furniture Co., Ltd. Participating organizations of this Part. Zhongshan Tailong Office Supplies Co., Ltd., Zhongshan Huasheng Furniture Manufacturing Co., Ltd., Zhongshan Sihai Furniture Manufacturing Co., Ltd., Chaozhou Yangguang Technology Development Co., Ltd., Zhongshan Paige Furniture Co., Ltd., Shanghai Institute of Quality Inspection and Technical Research, Shenzhen Academy Of Metrology & Quality Inspection, National Centre for Quality Supervision & Inspection of Furniture and Indoor Environment, Zhejiang Furniture and Hardware Institute, and Zhongshan Guojing Furniture Co., Ltd. Main drafters of this Part. Hai Lingbo, Deng Yanping, Wang Hongqiang, Liang Depei, Luo Jufen, Yang Jianhua, Liao Guifu, He Jianhua, Li Yanchun, Xu Jun, Chen Dongen, Zhang Shuyan, Luo Xin, Liang Mijia, Gao Hanguang, Chen Qiugui, Liang Xikun, Xu Fei, Wu Yanjiao, He Zhixiong, and Chen Weipeng. The previous standard replaced by this Part is as follows: - GB/T 10357.2-1989. Test of mechanical properties of furniture Part