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

JY/T 0445-2011

**Glass Mortars for Teaching
(English Translation)**

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Table of Contents

Foreword	
1 Scope	
2 Normative references	
3 Classification and naming	
3.1 Product Classification	
3.2 Model Nomenclature	
4 Requirements	
4.1 Materials	
4.2 Dimensions	
4.3 Appearance	
4.4 Chemical stability	
4.12 Internal stress	
4.13 Environmental test	
5 Test method	
6 Inspection rules	
6.1 Inspection classification	
6.2 Inspection items and methods	
6.3 Lot rules and sampling methods	
6.4 Non-conformance determination	
6.5 Review rules	
6.6 Quality supervision inspection	
7 Marking, packaging, transportation and storage	
7.1 Signs	
7.2 Packaging, transportation and storage	

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Please note that some elements of this standard may involve patents. The issuer of this standard should not be held responsible for identifying these patents.

This standard was proposed by the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

This standard is under the jurisdiction of the National Technical Committee for Standardization of Teaching Instruments (SAC/TC125).

This standard was drafted. Sichuan Longchang Glass Instrument Factory, Zhejiang Educational Technology Center, Sichuan Ziyang Glass Instrument Factory, Sichuan Scientific industry teaching equipment limited liability company.

1 Scope

This standard specifies the classification and naming of glass mortars, technical requirements, test methods, inspection rules, packaging, transportation, and storage.

This standard applies to glass mortars for teaching.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB 191-2008 packaging storage and transportation pictogram GB/T 2828.1-2003 Counting sampling inspection procedures. Part 1. Sampling plan for batch inspection according to acceptance quality limit (AQL) JY 0001-2003 General quality requirements for teaching instruments and equipment products JY 0002 Inspection rules for teaching instruments and equipment products JY 0026-1991 teaching instrument and teaching equipment product model naming method JY/T 0423-2011 General quality requirements and test methods of teaching glass instruments

3.1 Product Classification

According to the inner diameter, it is divided into six specifications. phi60mm, phi75mm, phi90mm, phi120mm, phi150mm, and phi180mm.

3.2 Model Nomenclature

The model name of the product is in accordance with the provisions of JY 0026-1991.

The name of the glass mortar is.

L - YB - Y - 60

Product specifications, unit. mm Product feature code, round Product name Pinyin prefix, mortar Product model classification code, glass instrument Model example.

L-YB-Y-60. a round glass mortar with an inner diameter of 60 mm.

4.1 Materials

It should be made of transparent soda lime glass without obvious yellow-green.

4.2 Dimensions

The external dimensions and tolerances of the various types of glass mortars shall conform to Table 1, and the dimension symbols are shown in Figures 1 and 2.

Table 1 Dimensions and tolerances in millimeters

Specifications	Full height H	Bottom height h	Mouth diameter D	Wall thickness S	Mortar length L	Mortar head diameter d	Mortar diameter d	Bottom diameter D	Phi 60	Phi 75	Phi 90	Phi 120	Phi 150	Phi 180
	37 ± 3	15 ± 3	$8 \sim 10$	42 ± 2	55 ± 5	55 ± 5	55 ± 5	11 ± 2	85 ± 5	$5 \sim 7$	$90 \sim 110$	15 ± 3	$9 \sim 11$	54 ± 2
	9 ± 2	70 ± 3	$5 \sim 7$	$80 \sim 100$	15 ± 3	$8 \sim 10$	42 ± 2	55 ± 5	11 ± 2	85 ± 5	$5 \sim 7$	$90 \sim 110$	15 ± 3	$9 \sim 11$
	15 ± 3	$9 \sim 11$	54 ± 2	$Phi 90$	65 ± 5	13 ± 2	100 ± 5	$6 \sim 10$	$105 \sim 135$	20 ± 5	$12 \sim 14$	722	Phi	
	120	75 ± 5	15 ± 3	135 ± 5	$7 \sim 13$	$130 \sim 170$	25 ± 5	$15 \sim 17$	88 ± 2	$Phi 150$	82 ± 3	15 ± 3		
	165 ± 5	$7 \sim 13$	$165 \sim 205$	30 ± 5	$20 \sim 23$	105 ± 2	$Phi 180$	103 ± 3	15 ± 3	200 ± 5	$7 \sim 13$			
	$175 \sim 215$	35 ± 5	$23 \sim 26$	132 ± 2										

Figure 1 Pestle Figure 2 Mortar

4.3 Appearance

4.3.1

The appearance defects allowed are to comply with Table 2.

Table 2 Permitted appearance defects

Specifications	Bubble	Stones	Air bubbles, stones	Allowed total	Striped scissors print	Phi
60, Phi 75	$\leq 3\text{mm}$	≤ 3 pieces	$\leq 1.5\text{mm}$	≤ 2 pieces	≤ 4 pieces	Phi 90, Phi 120
	≤ 3 pieces	$\leq 2\text{mm}$	≤ 2 pieces	≤ 4 pieces		Phi 150, Phi 180
	$\leq 2.5\text{mm}$	≤ 2 pieces	≤ 4 pieces			

4.3.2

The appearance defects that should not exist shall be in accordance with JY/T 0423-2011 Section 4.1.1.

4.3.3

The mortar should not have a convex bottom.

4.3.4

The wall thickness and bottom thickness of the mortar shall be uniform without sudden changes. The uniformity of wall thickness shall be in accordance with 4.1.1.2 of JY/T 0423-2011.

4.3.5

There should be no steps or unevenness in the mortar.

4.3.6

The frosted surface of the mortar's inner wall should be greater than 1/2 of the height of the mortar.

4.3.7

The frosted surface of the pestle head should cover the end, with an area larger than 1/3 of the semicircular surface of the pestle head. There should be no light spots on the end of the pestle head surface.

4.3.8

The pestle allows for taper.

4.4 Chemical stability

Should meet water resistance HGB level 1, acid resistance H1 level, alkali resistance A2 level.

4.12 Internal stress

The internal stress should not be greater than 160nm/cm.

4.13 Environmental test

The environmental test shall be in accordance with Chapter 8 of JY/T 0423-2011.

5 Test method

5.1

Dimensions are measured with a vernier caliper with a graduation value of 0.02mm and a steel ruler with a graduation value of 0.5mm.

4.3.6, 4.3.7. The length of the appearance defect shall be tested with a reading microscope and shall meet the corresponding requirements of this standard.

5.2

Wall thickness and uniformity shall be tested in accordance with Article 4.1.3 of JY/T 0423-2011 and shall comply with Article 4.2 and 4.3.4 of this standard.

5.3

Water resistance, acid resistance and alkali resistance are tested according to Article 6.5.5 of JY/T 0423-2011, and shall comply with 4.4 of this standard.