

## Test report

**Test report relating to a glass product according to European standard EN 12600, Pendulum impact test for float glass, concerning the product marked as trade mark: thermally toughened glass and laminated glass and type: 4, 5, 6 and 8mm and laminated 33.1 and 33.2mm, manufacturer: KIBING SPECIAL GLASS ZHANGZHOU CO., LTD**

Report number	89207338-02-rev.1
Date	23 April 2015
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Project number	89207338
Project name	14.A335-EN12600
Number of pages	10



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## 1 Introduction

### 1.1 Purpose

The tests have been performed in order to establish whether or not the product meets the requirements of the European standard EN 12150-1 [1].

Revision to this report has been made, on the “Line ID where samples are made” and on the actual thickness of samples.

### 1.2 Description of the samples

#### General

Name of the manufacturer	KIBING SPECIAL GLASS ZHANGZHOU CO., LTD
Address of the manufacturer	CHENG'AN ROAD, KANGMEI TOWNSHIP, DONGSHAN COUNTY ZHANGZHOU, FUJIAN, 363401 CHINA
Production plant of the samples	CHENG'AN ROAD, KANGMEI TOWNSHIP, DONGSHAN COUNTY ZHANGZHOU, FUJIAN, 363401 CHINA
Line ID where the samples are made	TG-1 and LG-1
Production date	2014-12-15
Sampling date	2014-12-15
The product was marked as	Trade mark: thermally toughened glass and laminated glass and type: 4, 5, 6 and 8mm and laminated 33.1 and 33.2mm
Dimensions of the samples	

#### Specific

Nominal thicknesses	4, 5, 6 and 8mm and 33.1 and 33.2 (2=2x0.38 mm)
Configuration	3mm float/pvb/3mm float
Intermediate layer: type, thickness	PVB, 0.38mm
Applied films	n.a.

### 1.3 Sampling procedure

The samples have been submitted by the manufacturer. The test house has had no influence on the selection of the samples.

### 1.4 Application

The request for testing was submitted by the manufacturer on 11<sup>th</sup> December 2014. Assignment Form number: 14.A335.

### 1.5 Method of testing

All applicable tests have been performed according to the European standards EN 12600 [1].

### **1.6 Put out to contract**

The applicable tests were, under responsibility of Notified Body 1750, performed by China Building Material Test & Certification Group Co., Ltd. (CTC), No. 1, Guanzhuang Dongli, Chaoyang District, 100024 BEIJING, P.R. CHINA. The lab is accredited as ISO 17025 lab by CNAS (China National Accreditation Service for Conformity Assessment), registration number L 0690.

### **1.7 Privacy statement**

Due to privacy reasons, the names of involved personnel that executed the tests, are not disclosed in the report. However, this information is available on internal work sheets, test forms etc. in the project file.

### **1.8 Notifications, accreditations, designations**

TÜV Rheinland Nederland B.V. has been notified by the Dutch Ministry of Infrastructure and the Environment as Notified Laboratory (number 1750) and Notified (Factory Production Control) Certification Body (number 0336) for the European Construction Products Regulation 305/2011 (EU).

TÜV Rheinland Nederland B.V. has been accredited by the Dutch Accreditation Council (RvA) as ISO 17025 Test Laboratory (nr. L 484) and ISO 17065 Certification Body (nr. C078).

TÜV Rheinland Nederland B.V. has been designated as Technical Service (Laboratory) by the Approval Authorities for Germany (KBA – E1) and the Netherlands (RDW – E4) for automotive safety glass (ECE R43, 92/22/EC, 2009/144/EC).

TÜV Rheinland Nederland B.V. has been recognised by the German Institute for building technics (DIBt) under number NL005 as test, control and certification body.

### **1.9 Calibration of the test rig**

Date of the last calibration of the test rig according to annex B of EN 12600 [1]: 14 July 2014.

## 2 Test results

Test results after performing all applicable tests according to European standard EN 12600 [1].

### Type: 4mm:

Class	Drop height (mm)	Result test 1	Result test 2	Result test 3	Result test 4
3	190	No breakage	No breakage	No breakage	No breakage
2	450	No breakage	Breakage<4b	No breakage	No breakage
1	1200	Breakage<4b	Breakage<4b	No breakage	Breakage<4b

Average thickness of the 4 measurements	3.97mm
Performance classification	1(C)3

### Type: 5mm:

Class	Drop height (mm)	Result test 1	Result test 2	Result test 3	Result test 4
3	190	No breakage	No breakage	No breakage	No breakage
2	450	No breakage	No breakage	No breakage	No breakage
1	1200	No breakage	No breakage	No breakage	No breakage

Average thickness of the 4 measurements	4.85mm
Performance classification	1(C)1

### Type: 6mm:

Class	Drop height (mm)	Result test 1	Result test 2	Result test 3	Result test 4
3	190	No breakage	No breakage	No breakage	No breakage
2	450	No breakage	No breakage	No breakage	No breakage
1	1200	No breakage	No breakage	No breakage	No breakage

Average thickness of the 4 measurements	5.89mm
Performance classification	1(C)1

**Type: 8mm**

Class	Drop height (mm)	Result test 1	Result test 2	Result test 3	Result test 4
3	190	No breakage	No breakage	No breakage	No breakage
2	450	No breakage	No breakage	No breakage	No breakage
1	1200	No breakage	No breakage	No breakage	No breakage

Average thickness of the 4 measurements	7.87mm
Performance classification	1(C)1

**Type: 6.38mm:**

Class	Drop height (mm)	Result test 1	Result test 2	Result test 3	Result test 4
3	190	No breakage	No breakage	No breakage	No breakage
2	450	No breakage	Breakage<4a	Breakage<4a	Breakage<4a
1	1200	Breakage	---	----	----

Average thickness of the 4 measurements	6.16mm
Performance classification	2(B)2

**Type: 6.76mm:**

Class	Drop height (mm)	Result test 1	Result test 2	Result test 3	Result test 4
3	190	No breakage	No breakage	No breakage	No breakage
2	450	No breakage	Breakage<4a	No breakage	No breakage
1	1200	Breakage<4a	Breakage<4a	Breakage<4a	No breakage

Average thickness of the 4 measurements	6.53 mm
Performance classification	1(B)1

**Explanation**

**EN 12600 § 6 Classification**

**6.1 General**

Glazing conforming to this European Standard is classified as follows:

- its performance under the impact test;
- the drop height at which breakage occurred;
- the drop height at which the product passed in accordance with a) of clause 4;
- the drop height at which the product passed in accordance with b) of clause 4;
- the mode of breakage of the material if it remains unbroken after the impact test.

## 6.2 Drop height class

Glazing shall be classified as follows:

- Class 3: material that conforms to the requirements of clause 4 when tested by the method given in clause 5 at a drop height of 190 mm;
- Class 2: material that conforms to the requirements of clause 4 when tested by the method given in clause 5 at drop heights of 190 mm and 450 mm;
- Class 1: material that conforms to the requirements of clause 4 when tested by the method given in clause 5 at drop heights of 190 mm, 450 mm and 1 200 mm.

## 6.3 Mode of breakage

If all test pieces remain unbroken at the drop height appropriate to its intended drop height class, the mode of breakage shall be determined as per Annex C. The mode of breakage shall be described as follows:

- Type A: numerous cracks appear forming separate fragments with sharp edges, some of which are large (typical of annealed glass);
- Type B: numerous cracks appear, but the fragments hold together and do not separate (typical of laminated glass);
- Type C: disintegration occurs, leading to a large number of small particles that are relatively harmless (typical of toughened glass).

## Performance classification

The performance classification of a glass product shall be given as follows:

### $\alpha$ ( $\beta$ ) $\varphi$

where

- $\alpha$  is the highest drop height class at which the product either did not break or broke in accordance with a) or b) of clause 4;
- $\beta$  is the mode of breakage;
- $\varphi$  is the highest drop height class at which the product either did not break or when broke, broke in accordance with a) of clause 4.

When a glass product breaks at a drop height of 190 mm and the breakage is not in accordance with a) of clause 4 then the value of  $\varphi$  quoted shall be zero.

### 3 Conclusion

The glass product, marked as: Trade mark: thermally toughened glass and laminated glass and type: 4, 5, 6 and 8mm and laminated 33.1 and 33.2mm, manufacturer: KIBING SPECIAL GLASS ZHANGZHOU CO., LTD, meets the applicable requirements as stated in the European standard EN 12600 [1].

The test results exclusively relate to the tested objects.

#### **Remark 1**

When and if changes are made in production method and/or equipment, assessment according to this standard shall be reconsidered and re-tests shall be performed when the changes can lead to different specifications of the glass. The decision and responsibility lies at the manufacturer.

#### **Remark 2**

If no reference of the product description was supplied by the manufacturer, than that document shall be added to this test report by the manufacturer. It was to the manufacturer's responsibility that the samples delivered for Initial Type Test are representative to the production and deviations from perfection were included in the delivered test samples.



## 4 References

- 1 European standard EN 12600:2002 (E),  
Glass in building – Pendulum test – Impact test method and classification for float glass,  
European Committee for Standardization, November 2002.
- 2 Report CTC, China Building Material Test & Certification Group Co. LTD., no. WTCE00315,  
dated 13<sup>th</sup> February 2015.
- 3 Report CTC, China Building Material Test & Certification Group Co. LTD., no. WTCE00316,  
dated 13<sup>th</sup> February 2015.

## 5 Signatures

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Specialist	
<b>Approved by</b> Mr. H. van Ginkel	Signature 
Business field manager	

(This is the end of this report).