

No.: SC110120032

Date: Jan. 25, 2011

Page: 1 of 9

The following sample(s) was/ were submitted and identified on behalf of the client as:

Sample Name

Tempered Glass

Sample No.

SC110120032

Test Required

Please see next page(s)

Test Method

Please see next page(s)

Product Specification

thickness: 4mm, 5mm, 6mm, 8mm

Date of Receipt

Jan. 14, 2011

Test Period

Jan. 14, 2011 to Jan. 25, 2011

Test result(s)

: Please see next page(s)

******* To be continued ********

Signed for SGS-CSTC Standards

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.

htm and for electronic format documents.subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability, in the multisation and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interval library within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all the rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. A sunauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The sum of the content of the sample (s) tested and such sample (s) are retained for 30 days only.

SHML 235304



No.: SC110120032

Date: Jan. 25, 2011

Page: 2 of 9

Test Reference

- EN 12150-1:2000 Glass in building Thermally toughened soda lime silicate safety glass Part 1:
 Definition and description
- EN 12150-2:2004 Glass in building Thermally toughened soda lime silicate safety glass Part 2: Evaluation of conformity/Product standard
- 3. EN 1288-3:2000 Glass in building Determination of the bending strength of glass Part 3: Test with specimen supported at two points (four point bending)
- 4. EN 12600:2002 Glass in building Pendulum test Impact test method and classification for flat glass

Test Result:

1. Nominal Thickness 4mm

No.	Test Item	Test Method	Requirement	Test Result	Verdic
1	Nominal thickness and thickness tolerances	EN 12150- 1:2000	±0.2mm	-0.20mm	Pass
2	Flatness	EN 12150-	Overall bow: ≤0.003mm/mm	0.002mm/mm	Door
2	rialitess	1:2000	Local bow: ≤0.5mm/300mm	0.0mm/300mm	Pass
3	Fragmentation test	EN 12150- 1:2000	5 specimens must be tested and meet the requirements: ①In any area of 50mm×50mm, the minimum particle count is 40 pieces; ②A few long fragment will be allowed, but no longer than 100mm	Particle count of 5 specimens were 188, 176 178, 189 and 194, particle with longest length were 21, 19, 11, 27, and 18mm	
4	Resistance against sudden temperature changes and temperature differentials	EN 12150- 1:2000	Specimen must resist against sudden temperature changes and temperature differentials up to 200K	Specimen remain unbroken when sudden temperature changes and temperature differential is 250K	Pass

******* To be continued******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.htm and documents. Subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, in the multiplication and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its introduction in the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their lights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. A wounauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Propression

This document



No.: SC110120032

Date: Jan. 25, 2011

Page: 3 of 9

No.	Test Item	Test Method	Requirement	Test Result	Verdic
				234 N/mm ²	
5	Mechanical strength	EN 1288- 3:2000	≥120N/mm ²	210 N/mm ²	Pass
	Strength	3.2000		143 N/mm ²	
6	Classification of performance under accidental human impact	EN 12600:2002	— (See Note 1)	Performance Classification: 1(C)1(See note 1)	(See Note 1)

Note 1: As per EN 12150-1:2000 Clause 9.5 Classification of performance under accidental human impact.

The safety glass should be classified by testing in accordance with EN 12600. The performance classification should be given as:

 $\alpha(\beta)\Phi$

where,

α 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 of EN 12600;

Classification	Drop height(mm)
3	190
2	450
1	1200

β is the mode of breakage;

Type A – mode of breakage typical of annealed glass;

Type B - mode of breakage typical of laminated glass;

Type C - mode of breakage typical of toughened glass;

Φ 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 of EN 12600.

******* To be continued******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. It is an another electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, is the translation and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intermediate the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all the highest and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Available on request or accessible at http://www.sgs.com/terms_and_conditions. Attention is drawn to the limitation of liability, in the limitation of the time of its intermediate in the limitation of the time of its intermediate in the limitation of the company. Available on requestion and intermediate in the limitation of the company. Available on requestion and intermediate in the limitation of the company is not the limitation of the limitation

235908



No.: SC110120032

Date: Jan. 25, 2011

Page: 4 of 9

The test specimens did not break at the drop height of 190mm, 450mm and 1200mm, the highest drop height class is class 1. So the performance classification is given as 1(C)1.

2. Nominal Thickness 5mm

No.	Test Item	Test Method	Requirement	Test Result	Verdic
1	Nominal thickness and thickness tolerances	EN 12150- 1:2000	±0.2mm	-0.17mm	Pass
2	Flatness	EN 12150-	Overall bow: ≤0.003mm/mm	0.002mm/mm	Pass
_	rialliess	1:2000	Local bow: ≤0.5mm/300mm	0.0mm/300mm	rass
3	Fragmentation test	EN 12150- 1:2000	5 specimens must be tested and meet the requirements: ①In any area of 50mm×50mm, the minimum particle count is 40 pieces; ②A few long fragment will be allowed, but no longer than 100mm	Particle count of 5 specimens were 156, 208, 178, 164 and 211, particle with longest length were 18, 24, 17, 22 and 19mm	Pass
4	Mechanical strength	EN 1288- 3:2000	≥120N/mm²	161 N/mm ² 170 N/mm ²	Pass
	Suchgui	3.2000		163 N/mm ²	

3. Nominal Thickness 6mm

No.	Test Item	Test Method	Requirement	Test Result	Verdict
1	Nominal thickness and thickness tolerances	EN 12150- 1:2000	±0.2mm	-0.14mm	Pass
2	Flatness	EN 12150-	Overall bow: ≤0.003mm/mm	0.001mm/mm	Page
2	rialitess	1:2000	Local bow: ≤0.5mm/300mm	0.0mm/300mm	Pass

******* To be continued*******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms and conditions. http://www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, in the multisation and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interestion of within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. A winauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The company of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The company of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



No.: SC110120032

Date: Jan. 25, 2011

Page: 5 of 9

No.	Test Item	Test Method	Requirement	Test Result	Verdic	
3	Fragmentation test	EN 12150- 1:2000	5 specimens must be tested and meet the requirements: ①In any area of 50mm×50mm, the minimum particle count is 40 pieces; ②A few long fragment will be allowed, but no longer than 100mm	Particle count of 5 specimens were 214, 213, 209, 217 and 198, particle with longest length were 16, 19, 15, 17 and 15mm		
				160 N/mm ²		
4	Mechanical strength	EN 1288- 3:2000	≥120N/mm ²	175N/mm ²	Pass	
	Strength	0.2000		195N/mm ²		

4. Nominal Thickness 8mm

No.	Test Item	Test Method	Requirement	Test Result	Verdic	
1	Nominal thickness and thickness tolerances	EN 12150- 1:2000	±0.3mm	-0.15mm	Pass	
2	Flatness	EN 12150-	Overall bow: ≤0.003mm/mm	0.001mm/mm	Pass	
2	rialitess	1:2000	Local bow: ≤0.5mm/300mm	0.0mm/300mm	Га55	
3	Fragmentation test	EN 12150- 1:2000	5 specimens must be tested and meet the requirements: ①In any area of 50mm×50mm, the minimum particle count is 40 pieces; ②A few long fragment will be allowed, but no longer than 100mm	Particle count of 5 specimens were 164, 153, 167, 150 and 149, particle with longest length were 23, 22, 27, 22 and 14mm	Pass	
	Mechanical	EN 1288-		216 N/mm ²		
4	strength	3:2000	≥120N/mm²	177 N/mm ² 170 N/mm ²	Pass	

******* To be continued*******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms and conditions, htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability, in the first struction is sues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intermitable of the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their lights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company, and it is a provided after a sunfaction of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Logical Provided Herein and Conditions

The Company is a sunfaction of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The example of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The example of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The example of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The example of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



No.: SC110120032

Date: Jan. 25, 2011

Page: 6 of 9

5. SVHC

Test Requested: As requested by client, SVHC screening is performed according to: (i) Thirty eight (38) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) by June 18, 2010 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Cummary	According to the specified scope and analytical techniques, concentrations of	PASS
Summary	tested SVHC are ≤0.1% (w/w) in the submitted sample.	PASS

Sample Description: transparent glass

Test Method: SGS In-House method-SHTC-CHEM-SOP-97-T, SHTC-CHEM-SOP-302-T. Analyzed by ICP-OES, GC-MS, and UV-VIS.

Test Result: (Substances in the Candidate List of SVHC)

Substance Name	CAS No.	EC No.	Concentration(%)	RL (%)
2,4-Dinitrotoluene	121-14-2	204-450-0	ND	0.050
4,4-Diaminodiphenylmethane(MDA)	101-77-9	202-974-4	ND	0.050
5-tert-butyl-2,4,6-trinitro-m-xylene (musk	81-15-2	201-329-4	ND	0.050
xylene)				
Acrylamide	79-06-01	201-173-7	ND	0.050
Alkanes, C10-13, chloro (Short Chain	85535-84-8	287-476-5	ND	0.050
Chlorinated Paraffins)				
Aluminosilicate Refractory Ceramic	650-017-00-8	-	ND	0.005
Fibres*	(Index no.)			
Ammonium dichromate*	7789-09-5	232-143-1	ND	0.005
Anthracene	120-12-7	204-371-1	ND	0.050
Anthracene oil*	90640-80-5	292-602-7	ND	0.050
Anthracene oil, anthracene paste*	90640-81-6	292-603-2	ND	0.050

******* To be continued******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms and conditions. http://www.sgs.com/terms e-document. <a href="http://www.sgs.com/terms e-document.

SHML 235909



No.: SC110120032

Date: Jan. 25, 2011

Page: 7 of 9

Substance Name	CAS No.	EC No.	Concentration(%)	RL (%)
Anthracene oil, anthracene paste,	91995-15-2	295-275-9	ND	0.050
anthracene fraction*				
Anthracene oil, anthracene paste, distn.	91995-17-4	295-278-5	ND	0.050
lights*				
Anthracene oil, anthracene-low*	90640-82-7	292-604-8	ND	0.050
Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	ND	0.050
Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	ND	0.050
Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0	ND	0.050
Boric acid*	10043-35-3	233-139-2	ND	0.005
	11113-50-1	234-343-4		
Cobalt dichloride*	7646-79-9	231-589-4	ND	0.005
Diarsenic pentaoxide*	1303-28-2	215-116-9	ND	0.005
Diarsenic trioxide*	1327-53-3	215-481-4	ND	0.005
Dibutyl phthalate (DBP)	84-74-2	201-557-4	ND	0.050
Diisobutyl phthalate	84-69-5	201-553-2	ND	0.050
Disodium tetraborate, anhydrous*	1303-96-4	215-540-4	ND	0.005
	1330-43-4			
	12179-04-3			
Hexabromocyclododecane (HBCDD) and	25637-99-4	247-148-4	ND	0.050
all major diastereoisomers identified	and	and		
(α-HBCDD, β-HBCDD, γ-HBCDD)Δ	3194-55-6	221-695-9		
Lead chromate*	7758-97-6	231-846-0	ND	0.005
Lead chromate molybdate sulphate red	12656-85-8	235-759-9	ND	0.005
(C.I. Pigment Red 104)*				
Lead hydrogen arsenate*	7784-40-9	232-064-2	ND	0.005
Lead sulfochromate yellow (C.I. Pigment	1344-37-2	215-693-7	ND	0.005
Yellow 34)*				

******* To be continued******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.htm and,for electronic format documents,subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms-e-document.htm. Attention is drawn to the limitation of liability, in terminisation and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interval following of within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all they rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. A cunauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Values otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



No.: SC110120032

Date: Jan. 25, 2011

Page: 8 of 9

Substance Name	CAS No.	EC No.	Concentration(%)	RL (%)
Pitch, coal tar, high temp.*	65996-93-2	266-028-2	ND	0.050
Potassium chromate*	7789-00-6	232-140-5	ND	0.005
Potassium dichromate*	7778-50-9	231-906-6	ND	0.005
Sodium chromate*	7775-11-3	231-889-5	ND	0.005
Sodium dichromate*	7789-12-0	234-190-3	ND	0.005
	and			
	10588-01-9			
Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	ND	0.005
Trichloroethylene	79-01-6	201-167-4	ND	0.050
Triethyl arsenate*	15606-95-8	427-700-2	ND	0.005
Tris(2-chloroethyl)phosphate	115-96-8	204-118-5	ND	0.050
Zirconia Aluminosilicate Refractory	650-017-00-8	-	ND	0.005
Ceremic Fibres*	(Index no.)			

Notes 2:

- (1) RL = Reporting Limit. All RL are based on homogenous materialND = Not detected (lower than RL), ND is denoted on the SVHC substance.
- (2) △CAS No. of diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
- (3) * The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website: www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm
 Calculated concentration of boric acid, disodium tetraborate, anhydrous and tetraboron disodium heptaoxide, hydrate are based on the water extractive boron and sodium by ICP-OES.

RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, sodium, chromium, chromium (VI), silicon, aluminum, zirconium, boron, and potassium respectively), except molybdenum RL=0.0005%.

******* To be continued******

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions. http://www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, in horizontal printing and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its interval within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from the property of the company. This document cannot be reproduced except in full without prior written approval of the Company. A company of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

The company is a stated of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. The company is a stated of the content or appearance of the sample(s) tested and such sample(s) are retained for 30 days only.



No.: SC110120032

Date: Jan. 25, 2011

Page: 9 of 9

Remark:

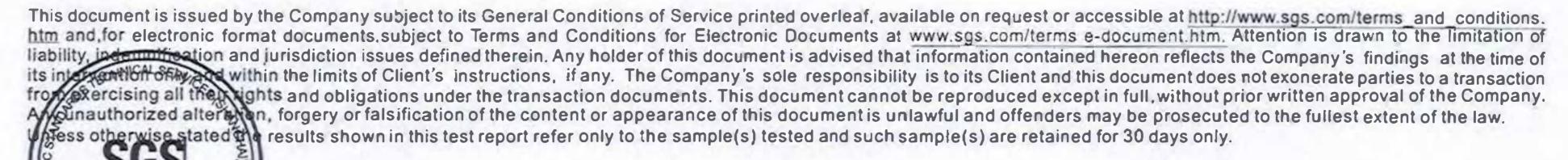
(1)The chemical analysis of specified SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA:

http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

These lists are under evaluation by ECHA and may subject to change in the future.

- (2)In accordance with Regulation (EC) No 1907/2006, any EU producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation, if (a) the substance in the Candidate List is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance in the Candidate List is present in those articles above a concentration of 0.1% weight by weight (w/w).
- (3)Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance in the Candidate List.
- (4)If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

****** End of report *******



SHML 235912