





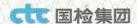
TEST REPORT

Report No.: WT2020E09A00936

Entrusted by:	Shenzhen China Gaoren Electrical New Materical Co., Ltd.
Sample Name:	Laminated glass
Test Type:	Entrustment Test

China National Safety Glass & Quartz Glass Test Center

China Building Materials Test and Certification Group Co., Ltd.



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- 2. This test report is invalid without the signatures of the related persons.
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- 4. Any doubt should inform us within 15 days after receiving the test report.
- 5. The entrustment test samples and relevant information are provided by entrusted body, the laboratory does not responsible for authenticity. The results shown in this report refer only to the samples tested.
- 6. This test report is printed on anti-counterfeiting paper. Copies made from original should have grid shadings. The numbers on the back of the data sheet are random and do not related with the report.

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Sample name	Laminated glass	Test type	Entrustment test	
Entrusted by	Shenzhen China Gaoren Electrical New Materical Co., Ltd.	Trademark		
Manufactured by	Shenzhen China Gaoren Electrical New Materical Co., Ltd.	Sample status	Samples meet the test requirements	
Reception date	November 11, 2020	Sample quantity	19 Pieces	
Manufacture date/Batch number		Model or size	Shown on each data sheet	
Test method	Shown on each data sheet	Test date	November 13, 2020- November 30, 2020	
Criterion	GB 15763.3-2009 Safety g glass	lázing materials in	building—Part3: Laminated	
Test item	High temperature resistance, humidity resistance, radiation resistance, ball impact peeling test and shot-bag impact test			
Test conclusion		impact peeling test	nce, humidity resistance, conform to the resultements of Page 2 to Page 6.* December 18, 2020	

Remark:

Submitted by entrusting party:

1. Interlayer: 0.8mm EVA film;

2. Class of shot bag impact test: II-1.

Approved by: FReported by: FRE



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Test item	High temperature resistance				
Test method	ethod GB 15763.3-2009 Safety glazing materials in buildingPart 3: Laminated glass, clause 7.8				
Criterion	Requirement of GB 15763.3-2009: 1. It is permitted for the specimens to bring forth cracks, but nei bubbles nor other defects shall be found beyond 13mm from the edge any cracks developed during the test. 2. Three specimens shall be tested. If all the specimens meet requirements, the test result is deemed to be satisfied. If one speciments the requirements, the result of the test is deemed to be failure. We two specimens meet the requirements, three new specimens shall be tested, and all the new specimens meet the requirements, the result of test is deemed to be satisfied.				
	Test Results				
Sample No.	Status after high temperature resistance test				
1	No bubbles nor other defects.				
2	No bubbles nor other defects.				
3	No bubbles nor other defects.				
Item conclusion	Pass				
Remark	 Test address: Guanzhuang; Main test equipment: Q-09 ZF-68 Boiling test chamber; Sample size: Sample No.1: 300mm×300mm×9.57mm, Sample No.2: 300mm×300mm×9.49mm, Sample No.3: 300mm×300mm×9.51mm. 				

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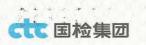
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Test item	Humidity resistance				
Test method	GB/T 5137.3-2002 Test methods of safety glazing materials used on road vehicles Part 3: for resistance to radiation, high temperature, humidity, fire and simulated weathering test, clause 7				
Criterion	Requirement of GB 15763.3-2009: 1. Neither bubbles nor other defects shall be found beyond 15mm from uncut edges of the specimen, beyond 25mm from the cut edges or bey 10mm from any cracks developed during the test. 2. Three specimens shall be tested, after the test, if all the specimens the requirements, the test result is deemed to be satisfied. If one speciments the requirements, the result of the test is deemed to be failure. We two specimens meet the requirements, three new specimens shall be tested, and all the new specimens meet the requirements, the result of test is deemed to be satisfied.				
	Test Results				
Sample No.	Status after humidity resistance test				
4	No bubbles nor other defects.				
5	No bubbles nor other defects.				
6	No bubbles nor other defects.				
Item conclusion	Pass				
Remark	1、Test address: Guanzhuang; 2、Main test equipment: J-42 HS-010B Constant temperature and humidity chamber; 3、Sample size: Sample No.4: 300mm×300mm×9.48mm, Sample No.5: 300mm×300mm×9.43mm, Sample No.6: 300mm×300mm×9.44mm.				

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Test item	Radiation resistance					
Test method	GB 15763.3-2009 Safety glazing materials in buildingPart 3: Laminated glass, clause 7.10					
Criterion	Requirement of GB 15763.3-2009: (1) \[\frac{T_1 - T_2}{T_1} \] \times 100\% \leq 3\% \] where \[\frac{T_1}{T_1} : \text{regular luminous transmittance before UV-irradiation} \] \[\frac{T_2}{T_2} : \text{regular luminous transmittance after UV-irradiation} \] (2) After test, there shall not be any remarkable changes, like discoloration, bubble and turbidity, found in the specimen. (3) Three specimens shall be tested, after the test, if all the specimens meet the requirements, the test result is deemed to be satisfied. If one specimen meets the requirements, there new specimens shall be re-tested, and if all the new specimens meet the requirements, the result of the test is deemed to be satisfied.					
	Test Results					
Sample No.	Status after radiation resistance test					
7	(1) $\frac{ 82.3\% - 82.0\% }{82.3\%} \times 100\% = 0.4\%$ (2) After test, no remarkable changes, like discoloration, bubble and turbidity, is found in the specimen.					
8	(1) $\frac{ 82.2\% - 82.0\% }{82.2\%} \times 100\% = 0.2\%$ (2) After test, no remarkable changes, like discoloration, bubble and turbidity, is found in the specimen.					
9	(1) $\frac{ 82.5\% - 82.3\% }{82.5\%} \times 100\% = 0.2\%$ (2) After test, no remarkable changes, like discoloration, bubble and turbidity, is found in the specimen.					
Item conclusion	Pass					
Remark	 Test address: Guanzhuang; Main test equipment: Q-01 SGT-A Visible light transmittance meter, Q-32-5 SGR-III Radiation chamber; Sample size: Sample No.7: 300mm×300mm×9.21mm, Sample No.8: 300mm×300mm×9.42mm, Sample No.9: 300mm×300mm×9.42mm. 					

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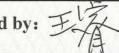


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Test item	Ball impact peeling test				
Test method	GB 15763.3-2009 Safety glazing materials in buildingPart 3: Laminated glass, clause 7.11				
Criterion	Requirement of GB 15763.3-2009: 1. The interlayer shall not be torn or exposed portions due to the splinters detached from the test piece. 2. Six specimens shall be tested, after the test, if five or more samples meet the requirements, the result of the test is deemed to be satisfied. If three or less specimens meet the requirements, the result of the test is deemed to be failure. If four specimens meet the requirements, six specimens shall be re-tested. If all the new specimens meet the requirements, the result of the test is deemed to be satisfied.				
		Test	Results		
Sample No.	Thickness mm	Weight of the ball/g	Impact height/mm	Status after impact	
10	9.32	1042	3000	The interlayer is not torn or exposed portions while one side broke.	
11	9.30	1042	2400	The interlayer is not torn or exposed portions while one side broke.	
12	9.31	1042	3000	The interlayer is not torn or exposed portions while one side broke.	
13	9.32	1042	3800	The interlayer is not torn or exposed portions while one side broke.	
14	9.36	1042	3000	The interlayer is not torn or exposed portions while one side broke.	
15	9.28	1042	3800	The interlayer is not torn or exposed portions while one side broke.	
Item conclusion	Pass				
Remark	2. Main test 6 Impact ma		J-54-4 Micron	neter (Digital display), Q-37 MCJ-	

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Rep	ort N	um	ber: WT2020E	.09A009.	36		Page 6 o	016
Test it	em		Shot-bag impact test					
Test metho	t (GB 15	5763.3-2009 Safety glazing materials in buildingPart 3: Laminated glass, clause 7.12					
Criter	t t ria t	Requirement of GB 15763.3-2009: II -1: 3 group test pieces shall be tested at a height of 300mm, 750mm and 1200mm. After impact all the specins shall not break and/or shall break safely. II -2: 2 group test pieces shall be tested at a height of 300mm and 750mm. After impact all the specimens shall break or shall break safely. But another group test pieces shall be tested at height of 1200mm, any sample break unsafely. III: 1 group test pieces shall be tested at a height of 300mm. After impact all the specimens shall not break at break safely. But another group test pieces shall be tested at height of 1200mm, any sample shall be break unsafely. The requirements of the specimens which break safely: a) When breakage occurs with appearance of numerous cracks and fissures, but remains substantially in on piece and no tear or shear or opening develops within the vertical specimens through which a 76 mm diameter sphere can pass using a force of 25 N. b) When breakage occurs, the crack-free particles shall be selected within 3 minutes subsequent to the impand shall weigh no more than the equivalent weight of 100cm ² of the original specimen. The largest sing particle shall weigh less than the mass equivalent to 44cm ² of the original specimen.						
XX		M		Tes	Result	205		
	30.80				Impact height /mm	040/0		
Sample No.	Thickn mm	05.4	300 Status after impact / weight of detached particles(g)/ weight of the largest particle(g)	76mm ball can pass through or not	750 Status after impact / weight of detached particles(g)/ weight of the largest particle(g)	76mm ball can pass through or not	Status after impact / weight of detached particles(g)/ weight of the largest particle(g)	76mm ball car pass through
16	10.4	5		1 100 1 100 100 100 100 100 100 100 100			Broke safely/0/0	No
17	10.2.	3	5. 5 	y la e 'x		-	Broke safely/0/0	No
18	10.3	0		1 1 1 1 1		Name 1	Broke safely/0/0	No
19	10.4.	3					Broke safely/0/0	No
Classi	fication	100						
Item co				18 18 18 18		THE W		3,4
Remarks			display), J-76 HP 3. Sample size: 19	nent: J-02 S -100 Digital 930mm×864	BI-II Shot-bag impact display force gauge; mm; atrusting party: The he			

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The end of the report

