

Test report

Number: 2018-11-4922-05

Client: TPI All Seasons Company Limited
26/56 TPI Tower, Chan Tat Mai Rd.
10120 Tungmahamek, Sathorn, Bangkok
Thailand

Commission: Classification of laminated safety glass according to DIN EN 12600:
2003-04

Product: Vistasafe VS 102
Vistasafe VS 103

Number of pages: 6

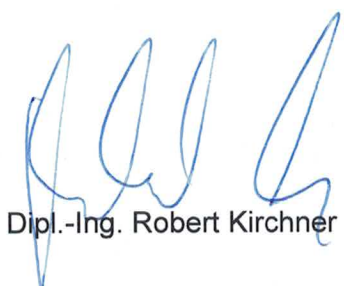
Applicable guidelines:

DIN EN 12600:2003-04 Pendulum test – impact test method and classification for flat
glass

Rohrbach, 29. July 2019


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The test results in this test report refer to the test material as indicated in this report.

Reprinting this test report requires our written approval.
Publishing this test report – even only extracts – is strictly prohibited.

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1 Testing material

Basic glass: Float glass according to DIN EN 572-2

Processed to: Laminated safety glass according to DIN EN ISO 12543-2:2011-12

Test material: 4 Glass panes 876 x 1938 mm Nominal thickness 8

Glass composition:

4 mm float glass / 0,76 mm VISTASAFE VS 102 / 4 mm float glass

PK-Numbers: 53 - 56

4 Glass panes 876 x 1938 mm Nominal thickness 8

Glass composition:

4 mm float glass / 0,76 mm VISTASAFE VS 103 / 4 mm float glass

PK-Numbers: 61 - 64

Sampling: carried out by the client

Sample receipt: 18 June, 2019

2 Test device

The following test device had been used:

- Digital caliper
- Folding rule
- Digital micrometer
- Test stand for pendulum impact test DIN EN 12600:2003-04

The test device used are subjected to test device surveillance.

3 Testing procedures and results

3.1 Testing procedure

The testing procedure had been carried out according to DIN EN 12600:2003-04 section 5 at the test specimen.



Fig. 1: Pendulum test stand with test specimen

4 mm float glass / 0,76 mm VISTASAFE VS 102 / 4 mm float glass			
PK-Number	Drop height [mm]	Fracture	Fracture behaviour
53	190	No	-
	450	Yes	B
	1200	Not tested	-
54	190	No	-
	450	Yes	B
	1200	Not tested	-
55	190	No	-
	450	Yes	B, Penetration test passed
	1200	Not tested	-
56	190	No	-
	450	Yes	B
	1200	Not tested	-

4 mm float glass / 0,76 mm VISTASAFE VS 103 / 4 mm float glass			
PK-Number	Drop height [mm]	Fracture	Fracture behaviour
61	190	No	-
	450	Yes	B
	1200	Not tested	-
62	190	No	-
	450	Yes	B, Penetration test passed
	1200	Nicht geprüft	-
63	190	No	-
	450	Yes	B
	1200	Not tested	-
64	190	No	-
	450	Yes	B, Penetration test passed
	1200	Not tested	-

3.2 Fracture behaviour

The testing procedure had been carried out as pendulum impact test.

The fracture behaviour matches type B, which is typical for laminated safety glass.



Fig. 2: Test specimen 55 with fracture behaviour of type B

3.3 Classification

According to the test result, the tested product has to be classified as follows:

Type	Class
4 mm float glass / 0,76 mm VISTASAFE VS 102 / 4 mm float glass	2 (B) 2
4 mm float glass / 0,76 mm VISTASAFE VS 103 / 4 mm float glass	2 (B) 2