Test report

Test report relating to a glass product according to European standard EN 1991-1-1 including Dutch National Annex, Eurocode 1, Actions on structures, Part 1-1, General actions - Densities, self-weight, imposed loads for buildings, concerning the product marked as: Posi-Glaze Side-fixed, manufactured by: Purevista Ltd.

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1 Introduction

1.1 Purpose

The tests have been performed in order to determine whether or not the construction is conforming to the requirements of EN 1991-1-1:2002+C1:2011 [1], and **Dutch** National Annex NB.A : Static horizontal loads and Dutch National Annex NB.B : Concentrated loads on partition walls and parapets, acting as barriers. [2].

1.2 Description of the test specimen

General

Manufacturer construction	Purevista Ltd.
Type rail or clamp	Posi-Glaze base-fixed
Type of glasa	Laminated safety glass
Glass composition(s)	(6+6) Toughened laminate SGP, 1.5mm interlayer (8+8) Toughened laminate PVB (10+10) Toughened laminate PVB (10+10) Toughened laminate SGP
Ankers	Bolts M12

Dim. WxH panel 1	500 x 1300 mm
Dim. WxH panel 2	1000 x 1300 mm

The construction was found test worthy. Testlocation: TÜV Rheinland Nederland, Arnhem.

1.3 Sampling procedure

TÜV Rheinland B.V., acting as Notified Test Laboratory, has had no influence on the selection of the sample. All test specimen within the sample were test-worthy and were received on 01-10-2018.

1.4 Application

The request for testing was submitted by the manufacturer on 16-07-2018, order or reference number or name: 2146. Assignment Form number: 16.A300.

1.5 Method of testing

All applicable tests have been performed according to the European standard EN 410 [1].

1.6 Put out to contract

No tests were performed at third parties.

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 Minister for Housing and the Central Government Sector 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).

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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.

Remark

The reported tests were performed under ISO 17025 accreditation..

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2 Test method

Test results after performing all applicable tests according to European standard EN 1991-1-1:2002+C1:2011 [1], and **Dutch** National Annex NB.A : Static horizontal loads and Dutch National Annex NB.B : Horizontal loads on partition walls and parapets, acting as barriers. [2].

EN 1991-1-1 (Eurocode 1) gives the following information on the implementation of a National Annex :

> ***"National Standards implementing Eurocodes***
> *The National Standards implementing Eurocodes will comprise the full text of the Eurocode (including any annexes), as published by CEN, which may be preceded by a National title page and National foreword, and may be followed by a National annex.*
> *The National annex may only contain information on those parameters which are left open in the Eurocode for national choice, known as Nationally Determined Parameters, to be used for the design of buildings and civil engineering works to be constructed in the country concerned,* i.e. *:*
> *- values and/or classes where alternatives are given in the Eurocode,*
> *- values to be used where a symbol only is given in the Eurocode,*
> *- country specific data (geographical, climatic, etc.), e.g. snow map,*
> *- the procedure to be used where alternative procedures are given in the Eurocode;*
> *It may also contain*
> *- decisions on the application of informative annexes,*
> *- references to non-contradictory complementary information to assist the user to apply the Eurocode.*
> *…..*
>
> ***Additional information specific for EN 1991-1-1***
> *EN 1991-1-1 gives design guidance and actions for the structural design of buildings and civil engineering works, including the following aspects:*
> *- densities of construction materials and stored materials;*
> *- self-weight of construction elements,*
> *- and imposed loads for buildings.*
>
> *EN 1991-1-1 is intended for clients, designers, contractors and public authorities.*
> *EN 1991-1-1 is intended to be used with EN 1990, the other Parts of EN 1991 and EN 1992 to EN 1999 for the design of structures.*

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National annex for EN 1991-1-1

This standard gives alternative procedures, values and recommendations for classes with notes indicating where National choices have to be made, therefore the National Standard implementing EN 1991 1-1 should have a National Annex containing all Nationally Determined Parameters to be used for the design of buildings and civil engineering works to be constructed in the relevant country. National choice is allowed in EN 1991-1-1 through:

- 2.2(3),
- 5.2.3(1) to 5.2.3(5),
- 6.3.1.1(1)P (Table 6.1),
- 6.3.1.2(1)P (Table 6.2),
- 6.3.1.2(10) & (11),
- 6.3.2.2 (1)P (Table 6.4),
- 6.3.3.2(1) (Table 6.8),
- 6.3.4.2(1) (Table 6.l0)
- 6.4 *(1)* (Table 6.12)

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Section 6 of EN 1991-1-1 (Eurocode 1) describes : **"Imposed loads on buildings"**

With **Table 6.1 : Categories of use**

Category	Specific Use	Example
A	Areas for domestic and residential activities	Rooms in residential buildings and houses; bedrooms and wards in hospitals; bedrooms in hotels and hostels kitchens and toilets.
B	Office areas	
C	Areas where people may congregate (with the exception of areas defined under category A, B, and D1)	**C1:** Areas with tables, etc. e.g. areas in schools, cafes, restaurants, dining halls, reading rooms, receptions. **C2:** Areas with fixed seats, e.g. areas in churches, theatres or cinemas, conference rooms, lecture halls, assembly halls, waiting rooms, railway waiting rooms. **C3:** Areas without obstacles for moving people, e.g. areas in museums, exhibition rooms, etc. and access areas in public and administration buildings, hotels, hospitals, railway station forecourts. **C4:** Areas with possible physical activities, e.g. dance halls, gymnastic rooms, stages. **C5:** Areas susceptible to large crowds, e.g. in buildings for public events like concert halls, sports halls including stands, terraces and access areas and railway platforms.
D	Shopping areas	**D1:** Areas in general retail shops **D2:** Areas in department stores
I) Attention is drawn to 6.3.1.1 (2), in particular for C4 and C5. See EN 1990 when dynamic effects need to be considered. For Category E, see Table 6.3		
NOTE 1 Depending on their anticipated uses, areas likely to be categorised as C2, C3, C4 may be categorised as C5 by decision of the client and/or National annex. NOTE 2 The National annex may provide sub categories to A, B, C1 to C5, D1 and D2 NOTE 3 See 6.3.2 for storage or industrial activity		

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And with **Table 6.12 : Horizontal loads on partition walls and parapets**

Loaded areas	**qk** ***[kN/m]***
Category A	qk
Category B and C1	qk
Categories C2 -to C4 and D	qk
Category C5	qk
Category E	qk
Category F	See Annex B
Category G	See Annex B

NOTE 1 For categories A, Band C1, *qk* may be selected within the range 0,2 to 1,0 (0,5)

NOTE 2 For categories C2 to C4 and D *qk* may be selected within the range 0,8 *kN/m* -to 1,0 *kN/m.*

NOTE 3 For category C5 *qk* may be selected within the range 3,0 *kN/m* to 5,0 *kN/m.*

NOTE 4 For category E *qk* may be selected within the range 0,8 *kN/m* to 2,0 *kN/m.* For areas of category E the horizontal loads depend on the occupancy. Therefore the value of qk is defined as a minimum value and should be checked for the specific occupancy.

NOTE 5 Where a range of values is given in Notes 1, 2, 3 and 4, the value may be set by the National Annex. The recommended value is underlined.

NOTE 6 The National Annex may prescribe additional point loads Qk andlor hard or soft body impact specifications for analytical or experimental verification.

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The Dutch National Annex on European standard EN 1991-1-1:2002+C1:2011 [1], gives the following – additional – requirements for this particular situation :

Replace the representative clause in EN 1991-1-1:2002+C1:2011 [1] by

"Clause 6.4 **Horizontal loads on partition walls and parapets *(acting as barriers)***

Static horizontal loads on partition walls and parapets *(acting as barriers)*must be taken from Annex NB.A.

In addition, impact loads and the permissible effects are considered in accordance with Annex NB.B.

Annex NB.A, gives the following defined loads in table NB.6

Areas	q_{rep}	F_{rep}		
	Prescribed height of zone a	Prescribed height of zone a	Zone b	Zone a+b
Non-common areas, residential function	0,3 kN/m 1 min	0,5 kN 1 min	0,35 kN 10 sec.	0,2 kN 24 h.
Common areas, residential function	0,5 kN/m 1 min	1 kN 1 min	0,35 kN 10 sec.	0,2 kN 24 h.
Non-common areas, cell function	0,5 kN/m 1 min	1 kN 1 min	0,5 kN 10 sec.	0,3 kN 24 h.
All other functions for personell transport, meeting- and sportfunctions and visitors	3 kN/m 5 min	1 kN 5 min	0,7 kN 5 min	0,5 kN 7 x 24 h.
All other areas	0,8 kN/m 5 min	1 kN 5 min	0,7 kN 5 min	0,5 kN 7 x 24 h.

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3 Test results

Profiles were mounted conforming to and under guidance of the manufacturer of the system. Further installation instructions can be found at https://pure-vista.com/nl/posi-glaze-downloads/

Dutch National Annex NB.A, uniformly distributed load or line load (q_k , or q_{rep})

Panel 1, 500x1300mm (wxh)

(6+6) Toughened laminate SGP, 1.5mm interlayer

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	**q_{rep}**		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,15 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,25 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,25 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	**1.50 kN ***	Fail
	All other areas	0,8 kN/m 5 min	**0,50 kN !**	Pass

***The glass broke after 20 sec. The total load of 1.5 kN was reached, but the glass composition did not stay intact..**

(8+8) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	**q_{rep}**		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,15 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,25 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,25 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	**1.50 kN ***	Fail
	All other areas	0,8 kN/m 5 min	**0,50 kN !**	Pass

***The glass broke at the load of 1,5 kN. The glass composition did not stay intact..**

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(10+10) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	q_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,15 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,25 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,25 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	1.50 kN	Pass
	All other areas	0,8 kN/m 5 min	**0,50 kN !**	Pass

(10+10) Toughened laminate SGP

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	q_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,15 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,25 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,25 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	1.50 kN	Pass
	All other areas	0,8 kN/m 5 min	**0,50 kN !**	Pass

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Panel 2, 1000x1300mm (wxh)

(6+6) Toughened laminate SGP, 1.5mm interlayer

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	q_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,30 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,50 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,50 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	**2,90 kN ***	Fail
	All other areas	0,8 kN/m 5 min	**1,0 kN !**	Pass

***The glass broke at the load of 2.9 kN. The glass composition did not stay intact..**

(8+8) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	q_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,30 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,50 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,50 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	**3,00 kN ***	Pass
	All other areas	0,8 kN/m 5 min	**1,0 kN !**	Pass

***The glass broke at the load of 3.0 kN. The glass composition did not stay intact..**

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(10+10) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	q_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,30 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,50 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,50 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	3,00 kN	Pass
	All other areas	0,8 kN/m 5 min	**1,0 kN !**	Pass

(10+10) Toughened laminate SGP

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	q_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,3 kN/m 1 min	0,30 kN	Pass
	Common areas, residential function	0,5 kN/m 1 min	0,50 kN	Pass
	Non-common areas, cell function	0,5 kN/m 1 min	0,50 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	3,0 kN/m 5 min	3,00 kN	Pass
	All other areas	0,8 kN/m 5 min	**1,0 kN !**	Pass

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Dutch National Annex NB.A, <u>concentrated load (Q_k , or F_{rep})</u>

Panel 1, 500x1300mm (wxh)

(6+6) Toughened laminate SGP, 1.5mm interlayer

Requirem.nr.	**Description of the requirement**			**Pass/ Fail / n.a.**
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

(8+8) Toughened laminate PVB

Requirem.nr.	**Description of the requirement**			**Pass/ Fail / n.a.**
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

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(10+10) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

(10+10) Toughened laminate SGP

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

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Panel 2, 1000x1300mm (wxh)

(6+6) Toughened laminate SGP, 1.5mm interlayer

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

(8+8) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

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(10+10) Toughened laminate PVB

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

(10+10) Toughened laminate SGP

Requirem.nr.	Description of the requirement			Pass/ Fail / n.a.
NEN-EN 1991-1-1+C1/NB, NB.A.1	If a floor partition is prescribed at a height in difference with the connecting floor, the connecting terrain, or the conecting water, then at least – and separate – a uniformly distributed load or line load (q_k) and a concentrated load (F_k) must be applied.			
	Area	F_{rep}		
		Req.	**Test-value**	
Table NB.6	Non-common areas, residential function	0,5 kN / 1 min	0,50 kN	Pass
	Common areas, residential function	1 kN / 1 min	1 kN	Pass
	Non-common areas, cell function	1 kN / 1 min	1 kN	Pass
	All other functions for personell transport, meeting- and sportfunctions and visitors	1 kN / 5 min	1 kN	Pass
	All other areas	1 kN / 5 min	1 kN	Pass

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Dutch National Annex NB.B, Dynamic Impact loads on barriers at differences in heights

(6+6) Toughened laminate SGP, 1.5mm interlayer

Test	Place of impact	Drop height in meters	Height of impact, from top of profile in mm	Dim. W x H in mm	Construction remains in tact
1	Middle of width and top of construction	0,75	Appr.1200 mm	500 x 1300 mm	Pass
1	Middle of width and top of construction	0,75	Appr.1200 mm	1000 x 1300 mm	Pass

(8+8) Toughened laminate PVB

Test	Place of impact	Drop height in meters	Height of impact, from top of profile in mm	Dim. W x H in mm	Construction remains in tact
1	Middle of width and top of construction	0,75	Appr.1200 mm	500 x 1300 mm	Pass
1	Middle of width and top of construction	0,75	Appr.1200 mm	1000 x 1300 mm	Pass

(10+10) Toughened laminate PVB

Test	Place of impact	Drop height in meters	Height of impact, from top of profile in mm	Dim. W x H in mm	Construction remains in tact
1	Middle of width and top of construction	0,75	Appr.1200 mm	500 x 1300 mm	Pass
1	Middle of width and top of construction	0,75	Appr.1200 mm	1000 x 1300 mm	Pass

(10+10) Toughened laminate SGP

Test	Place of impact	Drop height in meters	Height of impact, from top of profile in mm	Dim. W x H in mm	Construction remains in tact
1	Middle of width and top of construction	0,75	Appr.1200 mm	500 x 1300 mm	Pass
1	Middle of width and top of construction	0,75	Appr.1200 mm	1000 x 1300 mm	Pass

Period of testing

The tests took place in the period of January 2019.

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4 Conclusion

The tested construction, marked by the manufacturer as: Posi-Glaze , type: Side-fixed, in the configuration and dimensions as mentioned in paragraph 1.2 of this report, meet the requirements of European Standard EN1991-1-1 [1] (Eurocode 1) and the requirements of Dutch National Annex NB.A, Statische horizontale belasting op vloerafscheidingen and Annex NB.B, Stootbelasting op afscheidingen bij een hoogteverschil van NEN-EN 1991-1-1+C1/NB [2].

The test results exclusively relate to the tested objects.

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5 References

1. European standard NEN-EN 1991-1-1+C1,
   Eurocode 1: Actions on structures – Part 1-1: General actions – Densities, self-weight, imposed loads for buildings,
   European Committee for Standardization, December 2011.

2. Dutch National Annex NEN-EN 1991-1-1:2002+C1:2011/NB ,
   Nederlands Normalisatie-instituut, december 2011.

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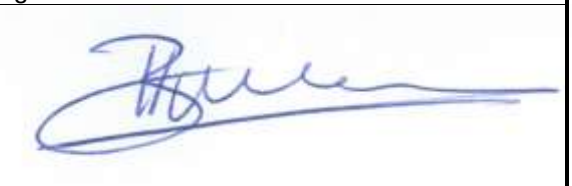
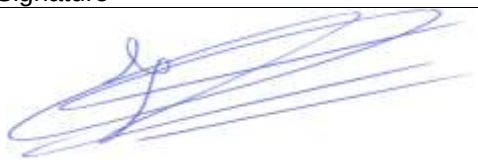
6 Signatures

Author	Signature
Mr. R. Brandhorst Specialist	
Peer review	Signature
Mr. S. el Bardai Specialist	
Review	Signature
Mr. H. van Ginkel LSM	

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7 Drawings and pictures of the tested construction(s)

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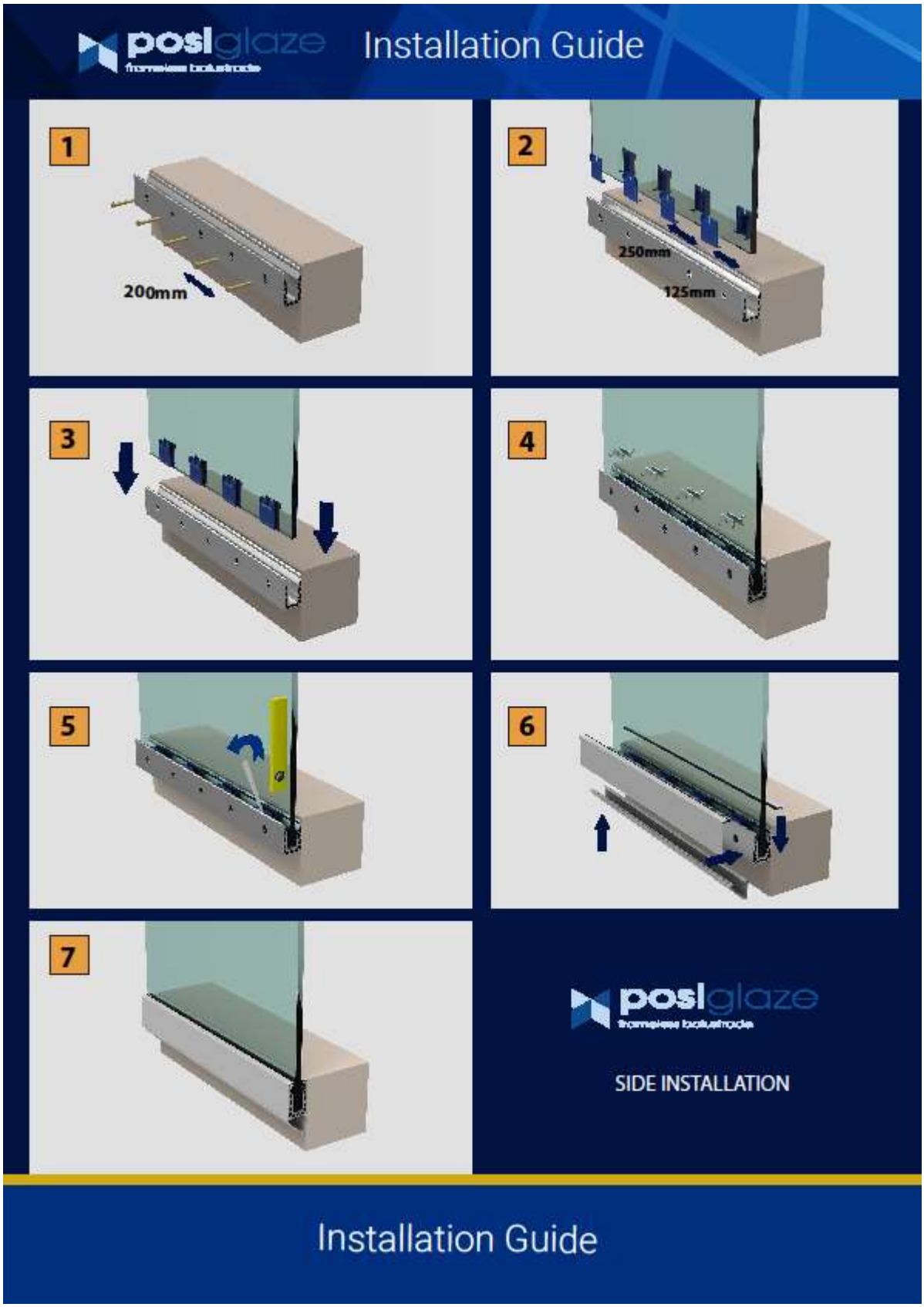

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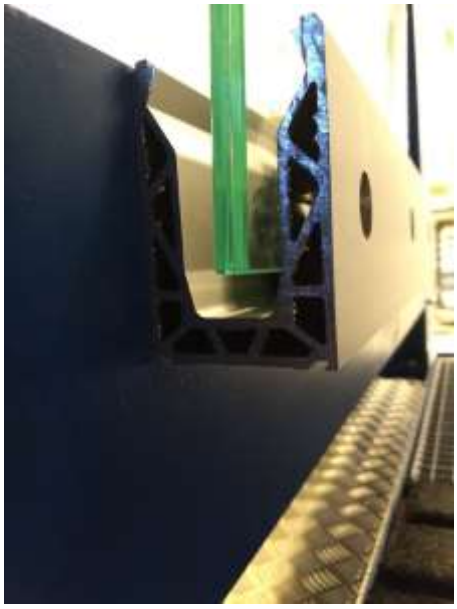
Posi-Glaze Side-fixed profile

Complete assembly



Posi-Glaze profile mounted

Glass-block

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Line-load assembly

Impact load assembly

(This is the end of this report).

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