

GlassFit SV-1401 TOP

Test Report 18-015
Denmark DS/EN 1991-1-1 DK NA:2013



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1. INTRODUCTION

On May 19th 2018 the balustrade system **GlassFit SV-1401 TOP** was tested according to the requirements of **DS/EN 1991-1-1 DK NA:2013 - National Annex to Eurocode 1: Actions on structures – Part 1-1: General actions – Densities, self-weight, imposed loads for buildings**. Country of application: Denmark.

The testing was carried out by Comenza Engineers at Comenza's test facilities at Pol. Ind. Ceao, 27003, Lugo, Spain.

This report summarises the test results obtained during the test programme and does not provide interpretation of those results.

2. TEST SAMPLES

The aluminium channel tested was designated as **GlassFit SV-1401 TOP**. The fixing system was designated as **PL-14**. The system is shown in Figure 1 and Figure 2.

The channel was installed by Comenza personnel.

3. TEST PROGRAMME

A horizontal line load was carried out on the aluminium channel with the following glass type installed:

- 17.52mm Laminated Tempered Glass with PVB foil 8/8/4 – size (w x h) 1000 mm x 975 mm

4. TEST METHOD

The channel was bolted to the top of a concrete block. The 1.0 m length of channel was bolted to the block at 250 mm centres using the appropriate fixings.

The appropriate thickness glass panel was fitted into the channel using the "Level In / PL-14" adjustable fixing system such that the plastic clip was to the inside face of the glass (see Figure 2).

A horizontal imposed line load was applied to the glass at a height of 1.000 mm above de datum level of the floor and the deflection measured at the top central point of the panel 1.000 mm above de datum level of the floor. The load was applied via a hydraulic ram and the deflection measured using a digital electronic displacement transducer (see Plate 1 and 2, and Figure 1).

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5. RESULTS

The test was carried out according with the guidance given in **DS/EN 1991-1-1 DK NA:2013 - National Annex to Eurocode 1: Actions on structures – Part 1-1 : General actions – Densities, self-weight, imposed loads for buildings.**

This standard categorises partition walls and parapets for areas of use depending on the loads they have achieved under testing.

The loads achieved by the Comenza Glassfit SV-1401 glazing system tested under horizontal imposed line load are given in Table 1.

All figures quoted in Table 1 contain no safety factors and are direct loads as achieved by the system under test conditions.

Table 2 summarises the suitability of the tested system in accordance with Table 6.12 of **DS/EN 1991-1-1 DK NA:2013 - National Annex to Eurocode 1: Actions on structures – Part 1-1 : General actions – Densities, self-weight, imposed loads for buildings.**

NOTE: The results given in this report apply only to the samples that have been tested.

END OF REPORT

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TABLES

Table 1 – Summary of Performance of Comenza Balustrade System Tested under Horizontal Imposed Line Load

Base	Glass	Height of Applied Load mm	Working Line Load for System (kN/m)	Deflection at Working Line Load for System (mm)
GlassFit SV-1401 Top Level In / PL-14	Laminated Tempered PVB Glass 17.52 mm	1000	0.5	11.08
GlassFit SV-1401 Top Level In / PL-14	Laminated Tempered PVB Glass 17.52 mm	1000	1	26.74

Table 2 – Summary of Suitability of Comenza Balustrade System in Accordance with Table 6.12 of DS/EN 1991-1-1 DK NA:2013- Horizontal loads on partition walls and parapets

Loaded areas	Description	Horizontal uniformly Distributed Line Load qk [kN/m]	SV-1401 TOP Level In PL14 17.52mm LT PVB Glass
Category A	A: Areas for domestic and residential activities	0,5	✓
Category B and C1	B: Office areas	0,5	✓
	C1: Areas where people may congregate: Areas with tables	0,5	✓
Category C2 - C4 and D	C2: Areas where people may congregate: Areas with fixed seats C3: Areas where people may congregate: Areas without obstacles for moving people C4: Areas where people may congregate: Areas with possible physical activities D1: Shopping areas: Areas in general retail shops D2: Shopping areas: Areas in large shops and department stores	1,0	✓
Category C5	C5: Areas where people may congregate: Areas susceptible to large crowds	3,0	-

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PLATES



Plate 1 – Generic Test Arrangement

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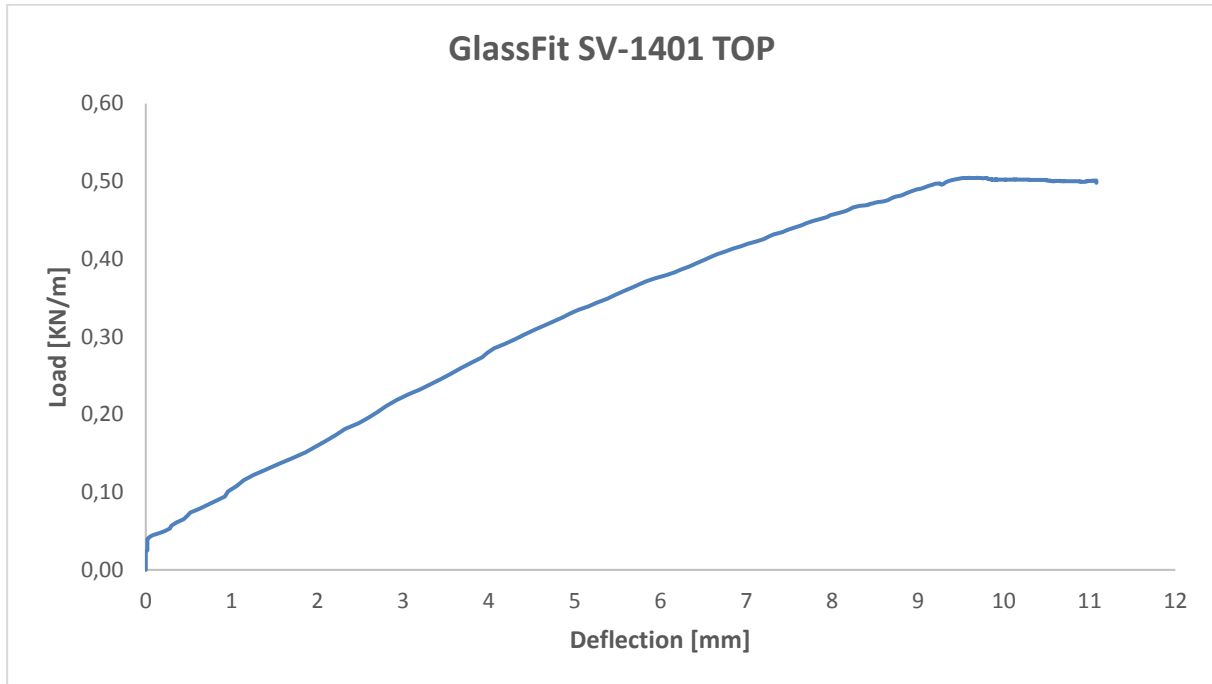


Plate 2 – Generic Test Arrangement

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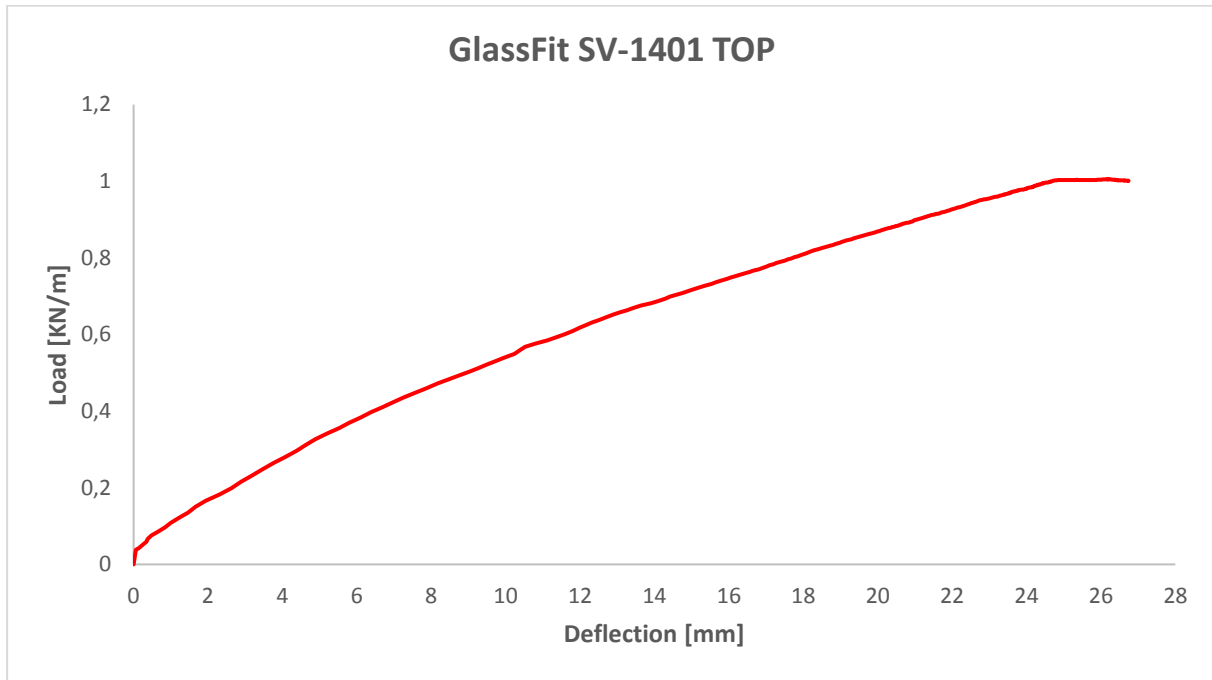
CHARTS

Chart 1 – Load Versus Deflection Curves for Comenza Glassfit SV-1401 Top Level In / PL -14 [Q=0,5 kN/m]



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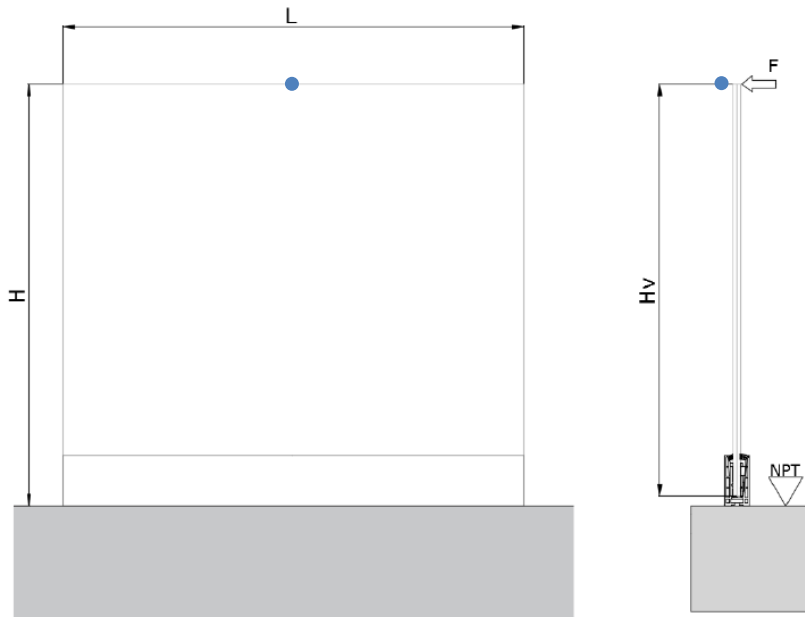
Chart 2 – Load Versus Deflection Curves for Comenza Glassfit SV-1401 Top Level In / PL -14 [Q=1 kN/m]



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APPENDIX: Figures

Figure 1 – Configuration of the model

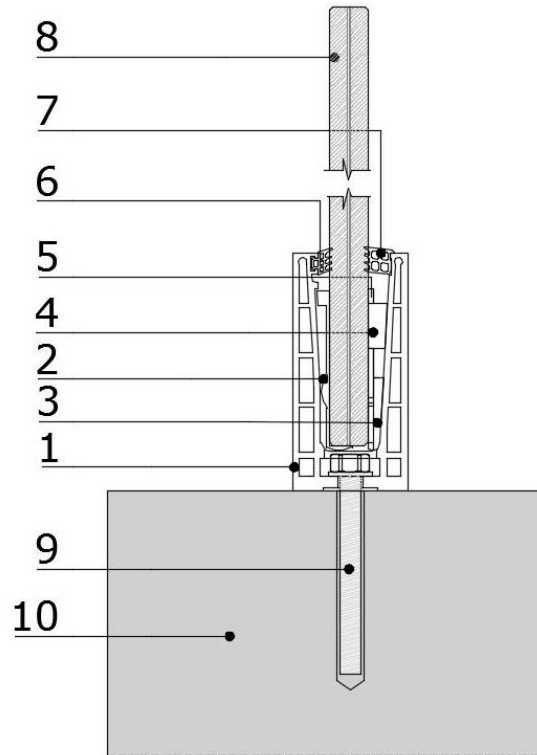


Horizontal force [kN/m]	Q	0,5 - 1
Length of the railing system[mm]	L	1000
Total force applied over the railing system[kN]	F=QxL	0,5 - 1
Effective height of the railing [mm]	H	1000
Effective height of the glass [mm]	H_v	975

- TRANSDUCER

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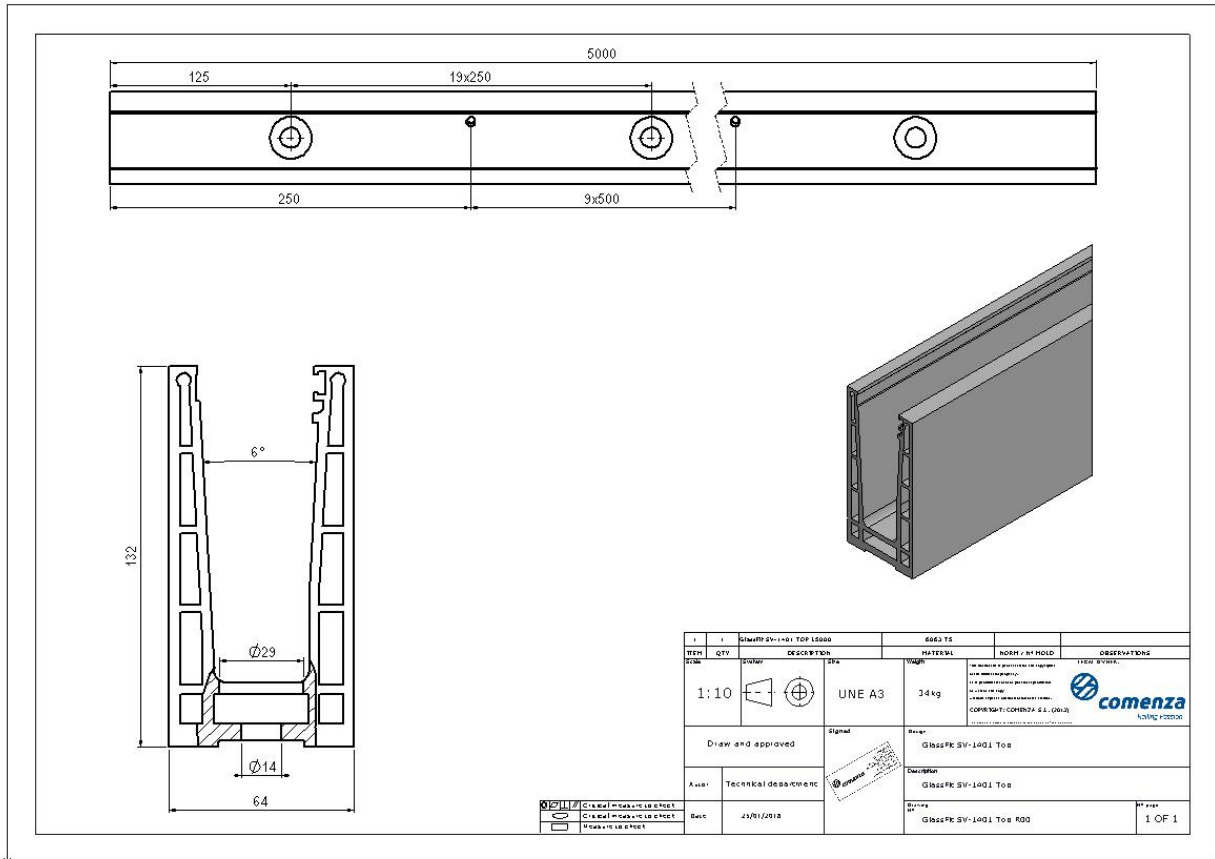
Figure 2 – Glassfit SV-1401 TOP – components



Item	References	Quantity	Units	
1	Aluminum profile ref: SV-1401 TOP	1	metre	
2	L Spacer ref: PL-20	PL - 14	4	unit
3	"Bottom wedge" ref: PL-21 17,52		4	unit
4	"Top wedge" ref: PL-22 17,52		3	unit
5	Device "Top wedge" ref: PL-23		3	unit
6	Rubber ref: PL-24		1	metre
7	Rubber ref: PL-25		1	metre
8	Laminated tempered glass 88.4 [17.52] Dimensions (LxH): 1000x975	1	unit	
9	Threaded Rod M12x160mm	4	unit	
	FIS VS 300T chemical anchor	1	unit	
10	Concrete base	1	unit	

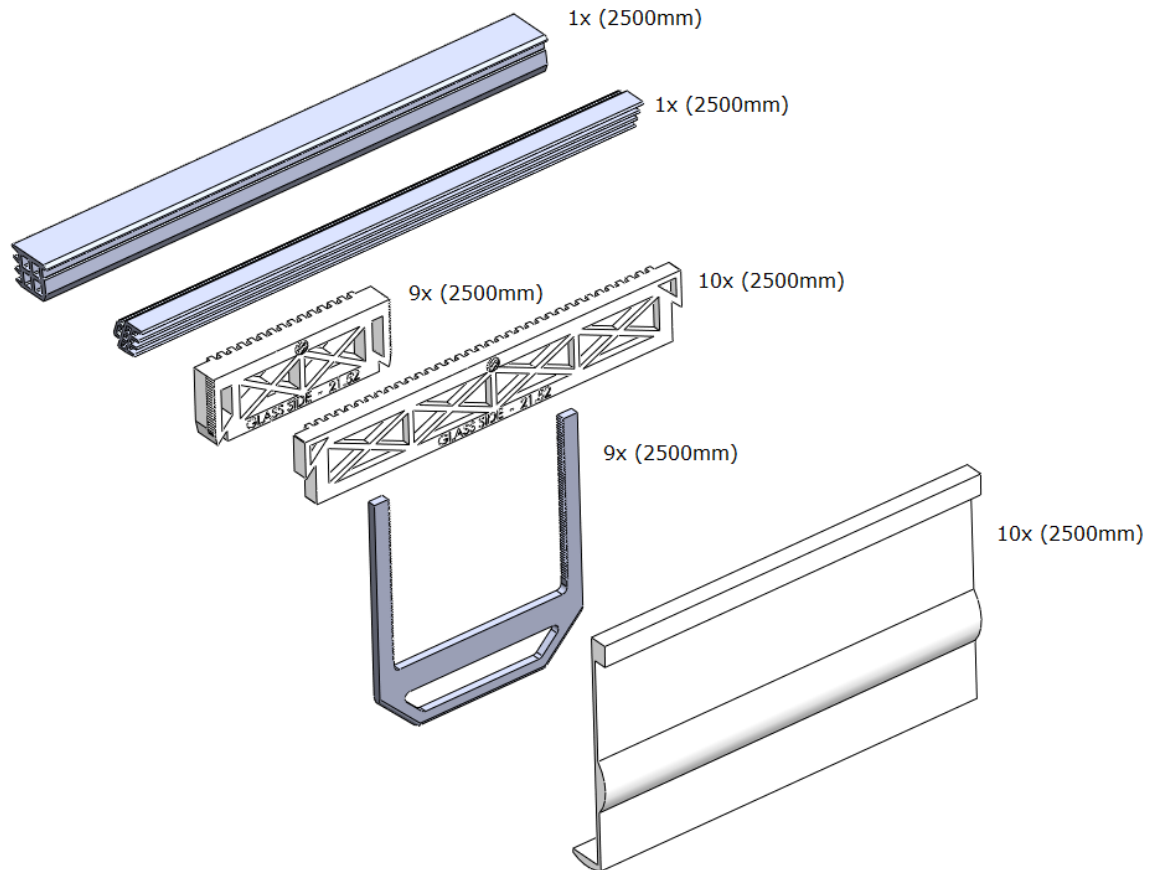
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Figure 3 – Glassfit SV-1401 TOP



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Figure 4 – Level In / PL-14 adjustable fixing system



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