

Durability of a blind in laminated – insulation glass

Test report no.: 11 - 000898 - PR01

(PB-K14-09-de- 02)



Certificate

Client: GLASTECH Produktions- and Verfahrenstechnik GmbH

Bahnhofstr. 34

3363 Hausmening

Austria

Product / type of Construction	Laminated insulating glass with integrated Lamella between Panes
Nomenclature	Eurotherm IGS
Manufacturer	Glastech Produktions- and Verfahrenstechnik GmbH
Dimension	sample : 2500 x 2500 mm
Coating	Climagaurd Premium T
Control	Eclipse Global Pvt. Ltd.

Eurotherm IGS

corresponds to requirements of **ift** guidelines VE07/2, paragraph 6 on the durability with UV irradiation



Sample: 25,841 cycles.

ift Rosenheim

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Principle

ift guidelines VE 07/2:2004-10 laminated-insulation glass with moving sun protection systems integrated in in between slab area.

Instructions for use

This test report serves for certification of the durability of a laminated drop constructed in between area of slab from laminated –insulating glass.

Validity

The named data and results refer exclusively to the tested and described objects.

The testing of durability permits no testimony about further performance and quality decisive characteristics of the present construction.

Publication instructions

The **ift**-bulletin is valid"conditions and instructions for use of **ift**-test documentation"

The cover page can be used as a summary.

Content

The certification encloses in all 5 pages

1. Subject matter
2. Execution
3. Individual results
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1. Subject matter

1.1. sample (all dimensions in mm)

Component	laminated Insulating glass , with Lamella between panes
Nomenclature	Eurotherm IGS*
Installation situation	vertical
Sample	
Dimensions of vitrification (BxH)	2000 X 2500 mm
Construction	8 ESG – 29 – 6 ESG low –e*
Coating	ClimaGaurd Premium T*
Coating level	position 3*
Gas type	Argon*
Volume in %	90*
Spacer	
Material/manufacturer	Aluminium SZR 29 Fa. Eclipse Global pvt *
Corner design	hidden corner angle with butylising and gas proof soldered plate
Slat drop in SZR	
Type /manufacturer	15mm Alu brush finished,Fa. Eclipse GlobalPvt*
Lamella width	15mm*
Lamella distance	12.5mm*
Pull cord	Polyester Yarn --Braided polyester yarn mesh with polyester fibre, thermally treated *polyester yarn, thermally treated
Conducting cord	Polyester yarn thermally fixed
Motor	Motor with planetary drive,electric supply 24 VDC inclusive of Encoder*
Type/manufacturer	RE Max /Maxon*
Change mechanism	separated turn mechanism, end switch above and below, incl sp. cord storage in bearing bracket
Type/manufacturer	Eclipse global Pvt. Ltd.*
Control	Eclipse*
Manufacturer	Eclipse Global Pvt. Ltd.*

The description bases itself on the inspection of sample in **ift**. Article nomenclature number as well as material data is data of the client. (further manufacturer data are characterised with*). The exact product nomenclature and details of construction are furnished by client.

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2 Execution

2.1 Trial

The selection of trial takes place through the client

Quantity	5
Delivery	18.12.2012 through the client
Registration number	33805

2.2 Procedure

Basis

ift guidelines VE07/2: 2005-08 laminated –insulating glasswith moving sun protection system integrated in disc inner area, chapter 5, testing of durability of moving, integrated components.

Deviations There are no deviations of test procedure respectively of test conditions

Summary

The sample is tested without additional radiations for the duration of 20,000 cycles at room temperature. A motion cycle represents one complete run in and run out ,where by the Isamella is carried once from 1. End position and then to the 2. End position and back again. After this duration a concluding evaluation is carried out. The repeat function is carried out either when there is a irreversible functional disturbance or the 20,000 motion cycles are attained. After ending this motion cycle and its corresponding evaluation the motion cycle is started again.

Till date an irreversible functional disturbance took place at 25,842 cycles.

2.3 Test execution

Date /period	18 Dec 2012 till 18 March 2013
Tester	Dipl.-Ing. (FH) Stefan Hehn

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3 Results

3.1 results after 20,000 cycles

Corresponding to test plan of ift guidelines VE07/2: 2005-08 the samples undergo a receiving inspection, an assessment of after approx. 10,000 cycles and an end assessment after 20,000 cycles.

Table 1 visual assessment of sample

Nos.	criteria	Principle/requirement	Entry test	10,000 cycles	20,000 cycles
1	Damage to glass surface Cracks etc.	Guideline for assessment of visual quality of insulated glass	i. O	i.O.	i.O.
2	Glass breakage	Visual assessment	i.O.	i.O.	i.O.
3	Damage to the coating, abrasion on coating	Visual assessment	i.O.	i.O.	i.O.
4	Lamella remain hanging under one another	Visual assessment	i.O.	i. O	i.O.
5	Lamella bend haphazardly	Nos. is 2% of total number of Lamella	i.O.	i.O.	i.O.
6	Awry lift of fixture	Deviation from horizontal $\leq 6\text{mm/m}$	i.O.	i.O.	i.O.
7	Warpage of lamination (L)	$L_{\max} \leq \pm 5 \text{ mm}$	i.O.	i.O.	i.O.
8	Dwell angle of Lamella $\Delta\alpha_{\max} \leq 10$	Final position 1 above (ascend) Final position 1 below (ascend) Final position 2 above (descent) Final position 2 below (descent)	α 15° 15° 34° 36°	α 15° 15° 34° 36°	α 16° 17° 35° 36°
9	Deviations from reference velocity $\Delta V < 20\%$	Measurement of travel time Ascend time: Descent time:	1:57 1:51	1:52 1:45	1:53 1:45
14	Operation power during ascend	measurement	n.z.	n.z.	n.z.
15	Length change of drop	Allowed change 1% of total length of drop Maximum 20mm	Band overlies on spacer	Band overlies on spacer	Band overlies on spacer
16	Touching of lamination on spacer	Visual assessment, discoloration of lamination end, abrasion traces and pollution in SZR	i.O.	i.O.	i.O.
17	torn conducting cord	Visual assessment	i.O.	i.O.	i.O.
18	Torn pull cord	Visual assessment	i.O.	i.O.	i.O.

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19	Aborted parts in SZR	Visual assessment	i.O.	i.O.	i.O.
20	Stoppage of motor	Visual assessment	i.O.	i.O.	i.O.
21	Malfunction of deviations, gear, mechanism	Visual assessment	i.O.	i.O.	i.O.
22	Dysfunction of end cutoff	Visual assessment	i.O.	i.O.	i.O.
23	Breakdown of control	Visual assessment	i.O.	i.O.	i.O.
24	Failure of control	Visual assessment	i.O.	i.O.	i.O.
25	sound development during activation of construction	Clear change of sound development	i.O.	i.O.	i.O.
26	Discoloration of Lamella end through abrasion	Visual assessment	i.O.	i.O.	i.O.
27	abrasion traces in SZR	Visual assessment	i.O.	i.O.	i.O.
28	Pollution in SZR e.g. Butyl on the lamination	Visual assessment			

i.O. = in order (no dysfunction determined)

n.z. = not applicable to this sample

-- = has not been determined

3.2 Increase in count of cycles

A concluding evaluation was not possible due to irreversible disturbance in function at the time.

4. Evaluation

The requirement on the guidelines VE 07/2 acc. to para 6 are fulfilled by trial sample. The trial sample is fully functional after 25,841 motion cycles.

ift Roseheim

02 May 2013