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Abteilung Baustoffe
[Building material department]

Test Report B 04 0330.1 E-U

(Transcription of test report B 0330.1 E)

1st copy

employer:	Glaverbel Seapane Lisseweegsesteenweg 14 8380 Zeebrugge Belgium
date of order:	2004-02-27 order-No. / your reference: TP1 018 / 2004
subject:	**Testing of a multi-pane insulating glass system in accordance with DIN EN 1279-2: 2003-06**
test object:	See page 2 Identification of the test specimens by the testing institute: W 409 (1–15)
sampling:	Not official, by employer
receipt of samples:	2004-02-19

Darmstadt, 2004-09-03
our reference: B/Hos

Pages : 5
Tables : 2
Pictures : 1
Enclosures : /

The Managment

i.A.
(by order)

(Dr.-Ing. P. Stagge)

Official in charge

(Dipl.-Ing. H.-J. Hosemann)

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1. Test specimens ([1] according to the ordering party's specifications)

Product designation:		Double-pane insulating glass unit with a duo-seal edge sealing system
Place of manufacture[1]**:**		**Glaverbel Seapane** Lisseweegsesteenweg 14 8380 Zeebrugge Belgium
Date of manufacture[1]**:**		February 04, 2004
Dimensions in mm:		
External dimensions:		500 * 350
Unit configuration:		4 Float / 12 gap between the panes / 4 Float
Sealants:	**1. Inner seal**	
	Material / typ[1]:	**Polyisobutylene / Terostat 969**
	Manufacturer (short-form)[1]:	Henkel Teroson, D-69123 Heidelberg
	Product-Nr.[1]	D 534701285
	Visible width in mm	5,0 – 5,5 (Average value: 5,3)
	2. Outer seal	
	Material / typ[1]:	**Polyurethane / JS 442**
	Manufacturer (short-form)[1]:	Tremco, Slough, England
	Product-Nr.[1]	A: 35118, B: 31003
	Beneath spacer in mm	1,8 – 4,3 (Average value: 3,5)
Desiccant:	Material / typ[1]:	Zeolith / 551
	Manufacturer (short-form)[1]:	Grace, D-67547 Worms
Spacer:	Typ / material[1]:	TGI Wave Spacer / External metalfilm with polypropylen reinforcement (picture 1 on page 5)
	Corner design:	curved
	Connector:	Steel, without additional polyisobutylene
	Manufacturer (short-form)[1]:	TGI, D-34123 Kassel
Gas filling:	Type of gas:	Argon
	Filltechnique	2 drill-holes with butylseal

2. The test is based on the following standards and guidelines:

DIN EN 1279-2: 2003-06

The following symbols are used:

TM	Quantity of desiccant (total weight after drying)
DPi	Dew point temperature (state on delivery)
Ti	Load of the desiccant (state on delivery)
Ti_{av}	Average load of the desiccant (state on delivery)
Tf	Load of the desiccant after climate test
Tf_{av}	Average load of the desiccant after climate test
Tc_{av}	Desiccant's average standard capacity of moisture absorption (determination in line with DIN EN 1279-2, 2003-06, Annex D, with Tc = 20%)
I	Moisture adsorption factor
I_{av}	Average value of the moisture adsorption factors
I_m	Maximum value of the moisture adsorption factors

3. Test results

Specimen no.	DPi in °C	TM in g	Ti in %	Tf in %	$Tf - Ti_{av}$ in %	I in %
7	< -60	27,4	2,58	/	/	/
8	< -60	27,2	2,54	/	/	/
9	< -60	27,3	2,53	/	/	/
10	< -60	27,1	2,47	/	/	/
4	< -60	27,9	/	3,75	1,22	6,98
5	< -60	28,2	/	4,29	1,76	10,07
6	< -60	28,3	/	4,82	2,29	13,11
11	< -60	28,1	/	3,66	1,13	6,47
12	< -60	28,3	/	3,85	1,32	7,56
$\bar{x}$	/	/	**2,53**	**4,07**	**1,54**	**12,29**

Moisture absorption factor I (%) = $(Tf - Ti_{av}) / (Tc_{av} - Ti_{av}) * 100$

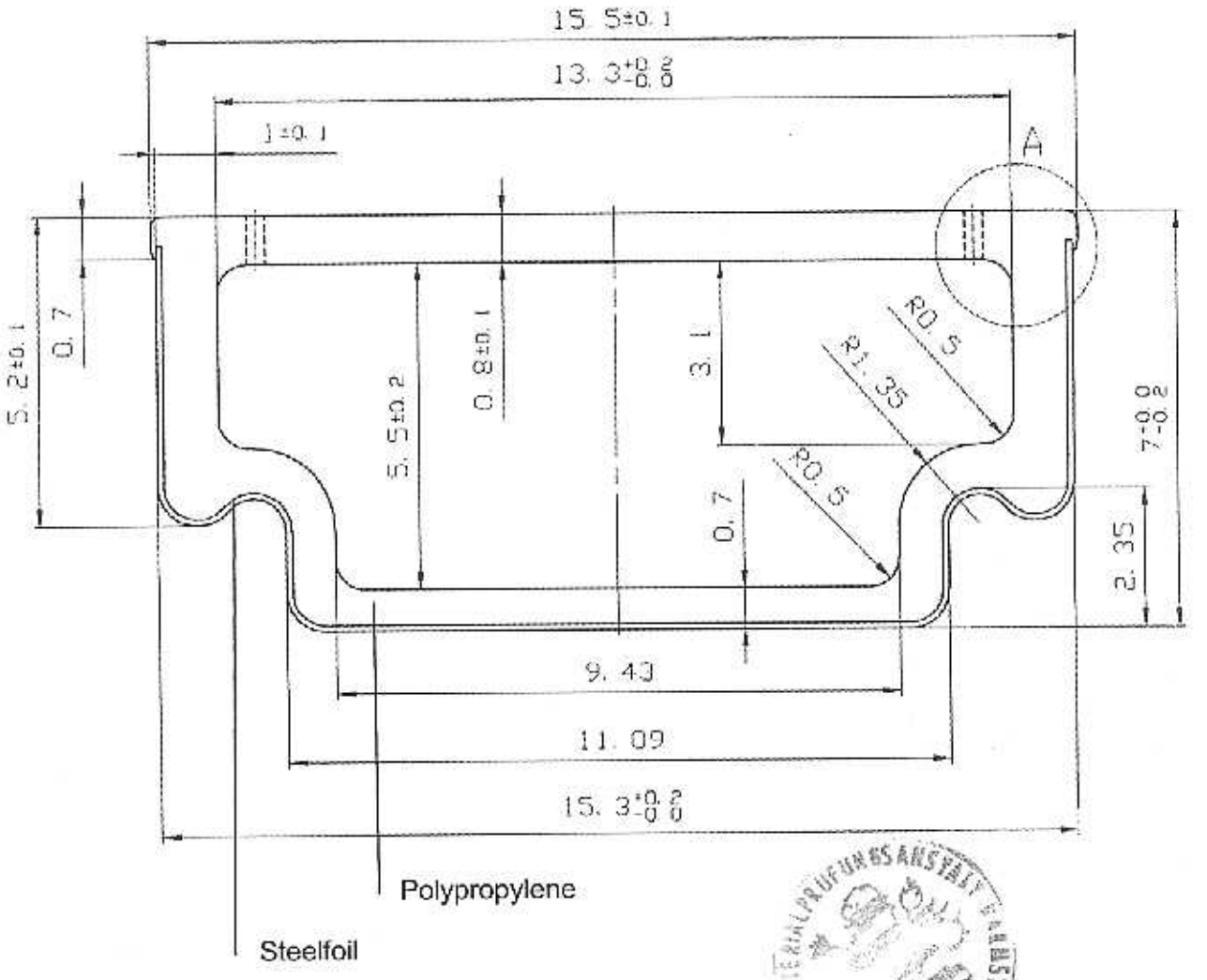
4. Summary and assessment:

Test parameters	Test results	Requirements DIN EN 1279-2: 2003-06
Average load of the desiccant in % (state on delivery)	Ti_{av} = 2,53	/
Average load of the desiccant in % (after environmental test)	Tf_{av} = 4,07	/
Average value of the moisture adsorption factors in %	**I_{av} = 8,84**	**$I_{av} \leq 20$**
Maximum value of the moisture adsorption factors in %	**I_m = 13,11**	**$I_m \leq 25$**

The tested multi-pane insulating glass system

☒ **Complies with the requirements according to DIN EN 1279-2: 2003-06 (4.1)**

☐ **Does not comply with the requirements according to DIN EN 1279-2: 2003-06 (4.1)**



Picture 1: Spacer "TGI Wave Spacer"