Test report

Test report relating to a glass product according to European standard EN 1279-2:2002, Long term test method and requirements for moisture penetration, concerning the product marked as: Insulating glass with Finotech® SQ5 and Finotech® SQ110 sealants, demonstrator: Finotech Switzerland AG

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Client	Finotech Switzerland AG Talacherring 6a 8103 Unterengstringen Switzerland
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Contents

1 Introduction

1.1 Purpose

The tests have been performed in order to establish whether or not an insulating glass unit with sealants Finotech® SQ5 and Finotech® SQ110 meets the requirements of the European standard EN 1279-2 [1].

1.2 Description of the samples

General

Name of the manufacturer (demonstrator)	Finotech Switzerland AG
Address of the manufacturer	Talacherring 6a 8103 Unterengstringen Switzerland
Production plant of the samples	Anonymous
Line ID where the samples are made	automatic production line for insulating glass
Production date	30 November 2013
Sampling date	14 December 2013
The product was marked as	Insulating glass with Finotech® SQ5 and Finotech® SQ110 sealants
System description, file number	n/a
Dimensions of the samples	(502 ±2) mm x (352 ±2) mm

Specific

Type of glass	Clear float glass
Configuration of the samples	4-12-4 mm
DESICCANT	
Trademark / type of desiccant	molecular sieve
INNER sealant	
Trademark / type of inner sealant	Finotech® SQ5
Kind of inner sealant	polyisobutylene (butyl)
OUTER sealant	
Trademark / type of outer sealant	Finotech® SQ110
Kind of outer sealant	Two-component silicone
SPACER	
Trademark / type of spacer	Aluminium
Trademark / type of corners	1x corner key, 3x bent

1.3 Sampling procedure

The samples have been submitted by the manufacturer. The test house has had no influence on the selection of the samples.

1.4 Application

The request for testing was submitted by the assignor on 11 November 2013. Assignment Form number: 13.A190-EN-1279-2-4-6-rev2.

1.5 Method of testing

All applicable tests have been performed according to the European standards EN 1279-2 [1].

1.6 Put out to contract

The applicable tests were, under responsibility of Notified Body 1750, performed by China Building Material Test & Certification Group Co., Ltd. (CTC), No. 1, Guanzhuang Dongli, Chaoyang Distrtict, 100024 BEIJING, P.R. CHINA. The lab is accredited as ISO 17025 lab by CNAS (China National Accreditation Service for Conformity Assessment), registration number L 0690.

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 and accreditations

TÜV Rheinland Nederland B.V. has been notified by the Dutch Ministry of Infrastructure and the Environment as Notified Test Laboratory (number 1750) and Notified Product Certification Body (number 0336) for the European Construction Products Regulation EU No 305/2011.

TÜV Rheinland Nederland B.V. has been accredited by the Dutch Accreditation Council (RvA) as ISO 17025 Test Laboratory (accreditation number L 484) and EN 45011 Certification Body (accreditation number C078). The RvA is signatory of the international ILAC-MRA arrangements for laboratory and inspection accreditation and IAF arrangements for management systems, products, services, personnel and other similar programmes of conformity assessment for global recognition.

TÜV Rheinland Nederland B.V. has been designated as Technical Service (Laboratory) by RDW competent Administrative Department (Approval Authority) for the Netherlands to grant approvals as mentioned in Directive 70/156/etc. and in the 1958 Agreement of the Economic Commission for Europe of the United Nations (UN-ECE) for glass as used in the automotive sector: ECE Regulation 43, safety glazing; EC Directive 92/22, Safety glass; EC Directive 2009/144, Glazing cat. T. (designation number RDW-99050043-01).

2 Test results

Test results after performing all applicable tests according to European standard EN 1279-2 [1].

Requirements and end result

Required	Value of the test	Pass / fail
4.1 Moisture penetration index		
Insulating glass units shall fulfil their functions during an economically reasonable working life. Therefore the following values are verified on test specimens submitted to the climate test described in this Part of the standard.		
The average moisture penetration index I_{av} over the five test specimen shall not exceed 0.20	I_{av} over the five test specimen = 0.10	pass
The unit with the highest moisture penetration index shall have an index value *I* not exceeding 0.25	Highest moisture penetration index *I* = 0.14	pass

Prior to ageing, all 15 IGU's were visually inspected. No special deviations above variations due to the production process were found. After the visual inspection the test specimen were analysed on dew points. All IGU's showed dew points lower then -60°C. The test specimen were randomly numbered and the moisture contents (T_i & T_f) were determined. From these results the individual penetration indices I and I_{av} were calculated.

Detailed test results

			T_c* [%]	20.34	
Initial values					
Specimen no.	m_o [g]	m_i [g]	m_r [g]	T_i [%]	
7	53.2198	76.8023	76.3847	1.80	
8	54.8362	77.9764	77.5628	1.82	
9	51.2187	75.5637	75.0128	2.32	
10	54.3728	78.8264	78.3746	1.88	
Average				**1.96**	
After climate exp.					
Specimen no.	m_o [g]	m_i [g]	m_r [g]	T_f [%]	I
4	62.6388	82.9232	82.0715	4.38	0.13
5	49.7215	65.6469	65.0875	3.64	0.09
6	53.3018	73.7354	73.0509	3.47	0.08
11	54.2917	77.8293	77.0910	3.24	0.07
12	56.7298	80.5547	79.5239	4.52	0.14
Average					**0.10**

3 Conclusion

The tested glass product, marked as: trade mark: Insulating glass with Finotech® SQ5 and Finotech® SQ110 sealants, manufactured by: Finotech Switzerland AG, with inner sealant with trade mark/type: Finotech® SQ5 and outer sealant with trade mark/type: Finotech® SQ110 , meets the applicable requirements as stated in the European standard EN 1279-2 [1].

The test results exclusively relate to the tested objects.

Remark 1

Due to the fact that the purpose of this test report is not an initial type test for a IG manufacturer no system description can be mentioned to be used as reference. This report is thus also not allowed to be used in cascading and/or shared ITT procedures (if allowed or applicable). The identification of the actual IG manufacturer for this ITT report is not relevant and is called anonymous or published only if the IG manufacturer has given written agreement that his/her name is allowed to be mentioned. When this statement is not communicated on forehand to TÜV Rheinland, then anonymous will be used per default.

4 References

1 European standard EN 1279-2:2002 (E),
Glass in building – Insulating glass units – Part 2: Long term test method and requirements for moisture penetration,
European Committee for Standardization, November 2002.

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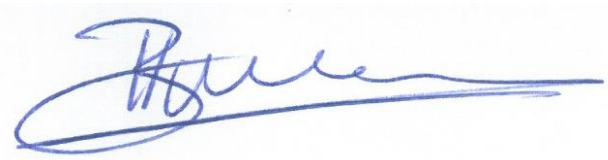
5 Signatures

Author	Signature
Mr. M.A.A.M. Schets, B.Sc. Specialist	
Peer review	Signature
Mr. R. Brandhorst Specialist	
Approved by	Signature
Mr. W. Notten Local Business Field manager	

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Summary of report nº: 89216332-02 **Date: 14 January 2020**

Insulating glass units - Moisture penetration results according to EN 1279-2

For details, see the test report

Company (demonstrator):	Name:	Finotech Switzerland AG
	Address:	Talacherring 6a 8103 Unterengstringen Switzerland
Plant:	Name:	Anonymous
	Address:	

System description, file number: n/a

Product name: The glass product: insulating glass with inner sealant: Finotech® SQ5 and outer sealant: Finotech® SQ110 and aluminium spacer

System conforms: **YES** | | (Delete whichever is not applicable)

NOTE Comparisons of moisture penetration indices of different insulating glass unit systems are meaningless

Signature: M.A.A.M. Schets
Project leader

Signature: W. Notten
Local Business field manager

(This is the end of this report).