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TEST

INSTITUT IGH, d.d.
Zavod za materijale i konstrukcije
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Building Physics Laboratory
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1 Introduction

This classification report defines the classification assigned to product, Double glass PV module, in accordance with the procedures given in the Standard HRN EN 13501-1:2019.

CLASSIFICATION OF REACTION TO FIRE IN ACCORDANCE WITH HRN EN 13501-1:2019

Client:	Solvis d.o.o., Ulica Vesne Parun 15, HR-42000 Varaždin
Manufacturer:	Solvis d.o.o., Ulica Vesne Parun 15, HR-42000 Varaždin
Classification made by:	INSTITUT IGH d.d. IGH Laboratory, Materials and Structures Department, Building Physics Laboratory, Janka Rakuše 1, HR-10000 Zagreb, Croatia
Evidence number of notified body in NANDO base :	NB 2477
Building product:	Double glass PV module
Classification Report No.:	EN-72570/011/25-040/25
No. of copies:	2
Date of issue:	2025-06-04

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2 Details for the classified product (data delivered by client)

2.1 General information

Double glass PV module is photovoltaic module composed by heat-treated glass, EPE/POE encapsulant, monocrystalline photovoltaic cells, junction box and silicone adhesive.

2.2 Opis proizvoda

Constitution of product Double glass PV module:

Other characteristics	SVNNN-XXX E GG33 ZZZZZZ L (for front and back glass 3 mm thick) SVNNN-XXX E GG66 ZZZZZZ L (for front and back glass 6 mm thick) SV – brand name (Solar Vision) NNN – cell number in PV module E - mono-Si cell XXX – power of PV module depending of number and cell type GG – glass glass PV module 33 - front and back glass 3 mm thick 66 - front and back glass 6 mm thick ZZZZZZ – cell type or dimension designation
Mass of layers	Glass: 8 kg/m² (glass 3 mm thick) ili 15 kg/m² (glass 6 mm thick) Encapsulant: 0,48 kg/m² Cells: 0,34 kg/m² Encaspulant : 0,48 kg/m² Glass: 8 kg/m² (glass 3 mm thick) ili 15 kg/m² (glass 6 mm thick)
Thickness of layers	Glass: 3 mm +/- 0,5 mm ili 6 mm +/- 0,5 mm Encaspulant+cells+encapsulant: 1,5 mm +/- 0,5 mm Glass: 3 mm +/- 0,5 mm ili 6 mm +/- 0,5 mm
Colour	Cells: blue/black
End use	BIPV (Building integrated PV module)

Institut IGH d.d. is not responsible for dana delivered by client.

Product is attached to an aluminium under construction with an air gap of 40 mm from substrate with A1 reaction to fire class A1 (HRN EN 13501-1) – cement panels with thickness 12,5 mm, density 1000 kg/m^3.

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3 Reports and results for classification

3.1 Test reports

Laboratory name	Client name	Test report	Test method
Institut IGH d.d. IGH Laboratory, Materials and Structures Department, Building Physics Laboratory, Janka Rakuše 1, HR-10000 Zagreb, Croatia	Solvis d.o.o., Ulica Vesne Parun 15, HR-42000 Varaždin	72570/011/25-036/25 dated 2025-05-20 and 72570/011/25-039/25 dated 2025-06-03	HRN EN ISO 11925-2:2020, HRN EN 13823:2022

3.2 Test results

Test method	Criterion for class B-s1,d0	No. of tests	Measured mean value	Compliance with parameters
HRN EN ISO 11925-2:2020 (exposure 30 s) Double glass PV module - front and back glass 3 mm thick:				
- surface flame exposure:	$F_s \leq 150$ mm	6	< 150 mm	yes
- edge flame exposure	$F_s \leq 150$ mm	6	< 150 mm	yes
- flaming droplets/particles:	no filter paper ignition	12	no filter paper ignition	yes
Double glass PV module - front and back glass 6 mm thick:				
- surface flame exposure:	$F_s \leq 150$ mm	6	< 150 mm	yes
- edge flame exposure	$F_s \leq 150$ mm	6	< 150 mm	yes
- flaming droplets/particles:	no filter paper ignition	12	no filter paper ignition	yes
HRN EN 13823:2022 Double glass PV module - front and back glass 3 mm thick:				
	$FIGRA_{0,2MJ} \leq 120$ W/s	3	61,6 W/s	yes
	$THR_{600s} \leq 7,5$ MJ	3	7,0 MJ	yes
	$LFS <$ edge of specimen	3	< edge of specimen	yes
- smoke production:	$SMOGRA \leq 30$ m^2/s^2	3	1,5 m^2/s^2	yes
	$TSP_{600s} \leq 50$ m^2	3	24,3 m^2	yes
- flaming droplets/particles:	without flaming droplets/particles (within 600 sec)	3	no flaming droplets/particles	yes
Double glass PV module - front and back glass 6 mm thick:				
	$FIGRA_{0,2MJ} \leq 120$ W/s	3	21,8 W/s	yes
	$THR_{600s} \leq 7,5$ MJ	3	1,3 MJ	yes
	$LFS <$ edge of specimen	3	< edge of specimen	yes
- smoke production:	$SMOGRA \leq 30$ m^2/s^2	3	1,2 m^2/s^2	yes
	$TSP_{600s} \leq 50$ m^2	3	6,7 m^2	yes
- flaming droplets/particles:	without flaming droplets/particles (within 600 sec)	3	no flaming droplets/particles	yes

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4 Classification and field of application

4.1 Reference of classification

Classification is in accordance with standard HRN EN 13501-1:2019.

4.2.1 Product classification

Product, Double glass PV module, manufacturer Solvis d.o.o., Ulica Vesne Parun 15, HR-42000 Varaždin, in relation to its reaction to fire behaviour is classified: **B.**

Additional classificationin in relation to smoke production: **s1.**

Additional classificationin in relation to flaming droplets/particles: **d0.**

Fire behaviour		Smoke production			Flaming droplets/particles	
B	-	s	*1*	,	d	*0*

Reaction to fire classification: B-s1,d0

4.3 Field of application

This classification is valid for Double glass PV module - front and back glass thickness from 3 mm to 6 mm, described with this document and Test report No. 72570/011/25-036/25 and 72570/011/25-039/25 on substrates euroclass A1 and A2-s1,d0 density 1000 kg/m^3 or more, mechanically attached to substrate with cavity on backside.

5 Limitations

Time limit: without limitation with requirement that the dated editions of the standards to which this classification refers are valid.

This Classification document doesn't represent approval of the type or certification of the product.

The Test Laboratory didn't participate in the product test sampling procedure, despite that it has appropriate data provided by client to ensure traceability of test samples.

Decision No.: KLASA: UP/I-360-01/21-08/23, URBROJ: 531-4-02-01-02/01-21-8 on 2021-12-02

Responsible person :

Tomislav Vuić, univ. spec. aedif.

Head of the Building Physics Laboratory :

dr. sc. Mladen Bezjak, dipl. ing. stroj.