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Client Details:

Solex Energy Limited
Eweleaze Farm
Osmington
Dorset
DT3 6ED

Quote Number:

Q2404002

Product Identification:

Solex PV electric tiles

Sample Arrival Date:

15-Jan-25

Sample Number(s):

S24040030

Applied Method:

The test was carried out in accordance with;
DD CEN/TS 1187:2012 – Test 4
Test Methods for External Fire Exposure to Roofs

Test Performance Date(s):

7-Feb-25 to 11-Feb-25

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The applied method(s), test result(s) and the uncertainties (if requested) with confidence probability are given on the following pages which are part of this technical report.

Prepared By

Phil Dean
Testing technician

Reviewed By

Chris Davey
General Manager

1. Referenced Standards

Testing has been carried out in accordance with the following standards:

DD CEN/TS 1187:2012 Test Methods for External Fire Exposure to Roofs – Test 4: Method with Two Stages Incorporating Burning Brands, Wind and Supplementary Radiant Heat

BS EN 13238:2010 Reaction to Fire Tests for Building Products – Conditioning Procedures and General Rules for Selection of Substrates

2. Sample Description

The following descriptions relate to the sample(s) subjected to test. The sample(s) and descriptions were provided by the test sponsor, the information listed below was not verified by the laboratory unless stated otherwise.

¹ Descriptions are required in accordance with DD CEN/TS 1187:2012.

Sample Number	S24040030
¹ Sample Name	Solex PV electric tiles
¹ Manufacturer	Solex Energy Limited
Thickness	145mm
¹ Mass per Unit Area	~25.16kg/m ²
¹ Test Orientation	45°

The sample consists of layers as described below.

Layer	Construction Details	
Base	<i>Generic Type</i>	Treated softwood
	<i>Thickness</i>	118mm

Layer	Construction Details	
1	<i>Generic Type</i>	Solex dual glass solar tile
	<i>Product Reference</i>	PV840451 (representative of whole product family PVXXXXXX)
	<i>Manufacturer</i>	Solex Energy Ltd
	<i>Thickness</i>	6.2mm nominal
	¹ Density	~2.1g/cc
	¹ Mass per Unit Area	~13.1kg/m ²
	<i>Colour</i>	Black
	<i>Application Method</i>	Supported on roof structure by Solex solar mounting kit
	<i>Flame Retardant</i>	Yes

Sample Selection

The laboratory was not involved in sample selection, the test results apply to the sample in the as received condition.

Conditioning



Prior to testing the specimens were conditioned in accordance with BS EN 13238:2010.

Specimen Preparation

Specimens were prepared in accordance with DD CEN/TS 1187:2012 by Attain RTC.

3. Test Performance

In accordance with DD CEN/TS 1187 test method 4, this test is to determine the performance of roofs to external fire exposure. Test method 4 is performed in two stages.

-  Stage 1 is preliminary ignition test with a burning brand only, one test is performed, with the duration of flaming, spread of flame and flaming penetration of sample recorded.
-  Stage 2 incorporates burning brands, wind and supplementary radiant heat. The fire penetration and the production of flaming, non-flaming droplets or debris falling from the underside of the roof or from the exposed surface is recorded along with the structural integrity of the specimen throughout the test.

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

4. Deviations

Tests were performed in accordance with the standard, with exception to clause '7.1.2 Wind' which was unachievable due to the construction of the specimens and the large gaps created which prevented the reduction of pressure to the underside of the specimens by 15 (±1) Pa.

5. Test Results

Stage 1

Sample Number:	S24040030-1
Lab Temperature [°C]:	16.5°C
Duration of Flaming [min:sec]:	00:13
Extent of Flame Spread [mm]:	0mm
Penetration Occurred:	No
Time [min:sec]	Observations
00:00	Start of test -burning brand applied
00:60	Buring brand removed – Flaming on surface of specimen
01:13	Flaming ceases – end of test

Stage 2

	1	2	3
Sample Number:	S24040030-2	S24040030-3	S24040030-4
Lab Temperature [°C]:	16.8°C	16.4°C	16.5°C
Penetration Occurred:	No	No	No
Melting Occurred:	No	No	No
Molten Debris Observed:	No	No	No
Flaming Debris Observed:	No	No	No
Mechanical Failure:	No	No	No

Specimen Number	Time [min:sec]	Observations
S24040030-2	00:00	Start of test
	05:00	Application of burning brand
	06:00	Removal of burning brand
	06:41	Bowing of specimen structure
	15:22	Surface scorch on PV tile
	28:42	Cracking of PV tile
	60:00	End of test

Specimen Number	Time [min:sec]	Observations
S24040030-3	00:00	Start of test
	05:00	Application of burning brand
	06:00	Removal of burning brand
	15:07	Surface scorch on PV tile
	60:00	End of test

Specimen Number	Time [min:sec]	Observations
S24040030-4	00:00	Start of test
	05:00	Application of burning brand
	06:00	Removal of burning brand
	60:00	End of test

6. Photos

Stage 1 – S24040030-1

Pre-Test Specimen Picture



Post Test Picture



Stage 2 – S24040030-2

Pre-Test Specimen Picture



Post Test Picture



Stage 2 – S24040030-3

Pre-Test Specimen Picture



Post Test Picture



Stage 2 – S24040030-4

Pre-Test Specimen Picture



Post Test Picture

