

Test Report

No. 10257393(1) A1

Date: 19 March 2012

Page 1 of 3

RESYSTA INTERNATIONAL
Steinbuchstr. 3
83539 Forsting
Germany

The following sample(s) was/were submitted and identified by/on behalf of the client as:

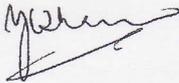
Sample Description : Resysta Polymer fibre composite/100% Recyclable,
Model: Resysta Profile FP 200/4
Dimension : (885x270x4)mm

Sample Receiving Date : 23 December 2011
Testing Period : 08 March 2012 to 15 March 2012

Test Requested : To determine the performance of the sample when it is subjected to the
conditions of test specified in BS 476 Part 6:1989 + A1:2009 —Fire tests on
building materials and structures - Part 6: Method of test for fire
propagation for products

Test Result(s) : Please refer to next page(s).

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd



Y C Tham (Ms)
Laboratory Manager

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Test Result(s):

BS 476 Part 6:1989 + A1:2009

I. Test conducted

This test was conducted in accordance with the procedure specified in BS 476 Part 6:1989 + A1:2009 — Fire tests on building materials and structures - Part 6: Method of test for fire propagation for products.

II. Sample details

Thickness	About 4.2mm
Color	Burly wood
Specimen size	About 225mm×210mm

III. Test details

Conditioning:

Prior to testing, the sample was conditioned,

to constant mass at a temperature of 23 ± 2 °C, and a relative humidity of 50 ± 5 %, and maintained in this condition until required for testing.

Exposed Face:

One face of specimen

Form in which the specimens were tested:

Material

IV. Test results

Throughout the test on each specimen, carefully observe the material's behaviour within the apparatus and take special note of any of the following phenomena listed in clause 9.2 of the standard. None of the listed phenomena was observed and the test results on all three specimens tested were valid.

The index of the performance for the specimen was determined as follows:

$$S_1 = \sum_{t=0.5}^{t=3} \frac{\theta_s - \theta_c}{10t}, S_2 = \sum_{t=4}^{t=10} \frac{\theta_s - \theta_c}{10t}, S_3 = \sum_{t=12}^{t=20} \frac{\theta_s - \theta_c}{10t}, S = S_1 + S_2 + S_3$$

Where:

S = index of performance for each of the specimens tested and S1, S2 and S3 are sub- indices

t = Time in minutes from the origin at which readings are taken

θ_s = Temperature rise in °C for the specimen at time, t

θ_c = Temperature rise in °C for the calibration sheet at time, t

** To be continued**

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Fire Propagation index $I = i_1 + i_2 + i_3$

Where, i_1 , i_2 and i_3 are given by the expressions:

$$i_1 = \frac{1}{3}[(S_1)_A + (S_1)_B + (S_1)_C], \quad i_2 = \frac{1}{3}[(S_2)_A + (S_2)_B + (S_2)_C], \quad i_3 = \frac{1}{3}[(S_3)_A + (S_3)_B + (S_3)_C]$$

The following test results were obtained for each specimen tested:

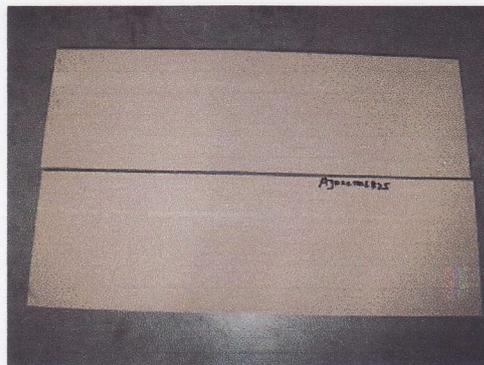
Specimen No.	Sub - indices			Index of performance
	S ₁	S ₂	S ₃	S
A	0.87	0.74	0.39	2.00
B	1.07	0.96	0.51	2.54
C	1.09	0.96	0.51	2.56

Number of Specimens tested	Sub-index i ₁	Sub-index i ₂	Sub-index i ₃	Fire Propagation index I
3	1.01	0.89	0.47	2.37

Note: If a suffix "R" is included in the above fire propagation index I, this indicates that the results should be treated with caution.

*** Tested by an SGS Lab (Ref: AJD201106425)**

Sample Photo:



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End of Report

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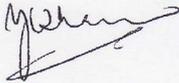
Sample Description : Resysta Polymer fibre composite/100% Recyclable,
Model: Resysta Profile FP 200/4
Dimension : (885x270x4)mm

Sample Receiving Date : 23 December 2011
Testing Period : 08 March 2012 to 15 March 2012

Test Requested : To determine the performance of the sample when it is subjected to the conditions of test specified in BS 476 Part 7:1997 —Fire tests on building materials and structures Part 7. Method of test to determine the classification of the surface spread of flame of products.

Test Result(s) : Please refer to next page(s).

Signed for and on behalf of
SGS Testing & Control Services Singapore Pte Ltd



Y C Tham (Ms)
Laboratory Manager

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Test Result(s):

BS 476 Part 7:1997

I. Test conducted

This test was conducted in accordance with the procedure specified in BS 476 Part 7:1997 —Fire tests on building materials and structures Part 7. Method of test to determine the classification of the surface spread of flame of products.

II. Sample details

Thickness	About 4.2mm
Color	Burly wood
Specimen size	About 885mm×210mm

III. Test details

Conditioning:

Prior to testing, the sample was conditioned, to constant mass at a temperature of 23 ± 2 °C, and a relative humidity of 50 ± 10 %, and maintained in this condition until required for testing.

Exposed Face:

One face of specimen

IV. Test results

SPECIMEN No.	1	2	3	4	5	6
Distance (mm)	Time to travel to indicated distance (minutes :seconds)					
75	--	--	--	--	--	--
165	--	--	--	--	--	--
190	--	--	--	--	--	--
215	--	--	--	--	--	--
240	--	--	--	--	--	--
265	--	--	--	--	--	--
290	--	--	--	--	--	--
375	--	--	--	--	--	--
455	--	--	--	--	--	--
500	--	--	--	--	--	--
520	--	--	--	--	--	--
600	--	--	--	--	--	--
675	--	--	--	--	--	--
710	--	--	--	--	--	--
750	--	--	--	--	--	--
785	--	--	--	--	--	--
825	--	--	--	--	--	--

** To be continued**

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Maximum distance traveled at 1.5 minutes (mm)	<50	<50	<50	<50	<50	<50
Maximum distance traveled during the whole test (mm)	<50	<50	<50	<50	<50	<50
Time to reach maximum distance traveled	1min	1min	1min	1min	1min	1min

Note: Six specimens are usually tested. If the test on any specimen is deemed to be invalid, as defined in the standard, it is permissible for up to a maximum of nine specimens to be tested in order to obtain the six valid test results.

The classification limits specified in BS 476-7:1997 are given in Appendix 1.

Observations during test: No

Criteria for classification:

If the prefix "D" or suffix "R" or "Y" is included in the classification, this indicates that the results should be treated with caution. An explanation of the reason for prefix and suffixes is given in Appendix 2

Appendix 1 Classification of spread of flame

Classification	Spread of flame at 1.5 min		Final spread of flame	
	Limit (mm)	Limit for one specimen in sample (mm)	Limit (mm)	Limit for one specimen in sample (mm)
Class 1	165	165+25	165	165+25
Class 2	215	215+25	455	455+25
Class 3	265	265+25	710	710+25
Class 4	Exceeding the limits for class 3			

** To be continued**

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Appendix 2 Explanation of prefix and suffixes which may be added to the classification

- a. A suffix R is added to the classification if more than six specimens are required in order to obtain six valid test results (e.g. class 2R).
- b. A prefix D is added to the classification of any product which does not conform to the surface characteristics specified in the standard and has therefore been tested in a modified form (e.g. class D3).
- c. A suffix Y shall be added to the classification if any softening and/or other behaviour that may affect the flame spread occurs.

Classification: In accordance with the class definitions given in BS 476 Part 7:1997, the tested samples are classified as **class 1**.

Classification:

It is the opinion of this laboratory that, the tested sample complies with the requirement of class 0 of UK. Building Regulations 2006 Approved Document B, appendix A paragraph 13.

Requirements:

A class 0 is the highest national product performance classification for lining materials, and the requirements laid down in the UK Building Regulation 2006 Approved Document B, appendix A paragraph 13. This is achieved if a material or the surface of a composite product is either:

- a. composed throughout of materials of a limited combustibility; or
- b. a Class I materials which has a fire propagation index (I) of not more than 12 and sub-index (i₁) of not more than 6.

Statements:

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 smoke hazard of the product in use.

The test results relate only to the specimens of the product in the form in which were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimens, which were tested.

The specimen was supplied by the sponsor and SGS-CSTC ANJI Branch was not involved in any selection or sampling procedure.

*** Tested by an SGS Lab (Ref: Ref: AJD201106425)**

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