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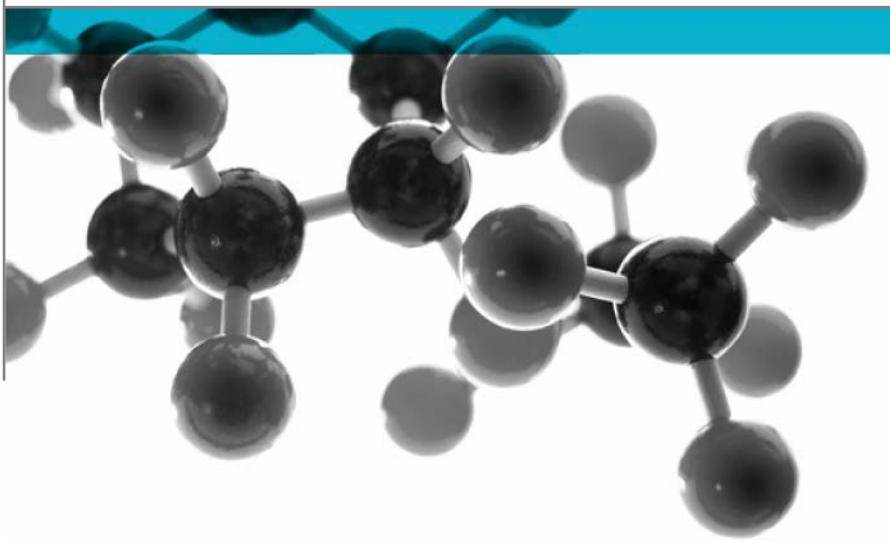
UN Regulation No. 118 Annex 8



Test To Determine The Vertical Burning Rate Of Materials

A Report To: Clark Wright

Document Reference: 367226

Date: 15th June 2018

Issue: 1

Testing
Advising
Assuring

UKAS TESTING
0249

Executive Summary

Objective To determine the performance of the following product when tested in accordance with UN Regulation No. 118 Annex 8.

Generic Description	Product reference	Thickness	Weight per unit area
Coated woven fabric applied to a mineral fibre insulation and e glass backing	"eQUILT"	16mm	8kg/m^2
Individual components used to manufacture composite:			
Coating	Unwilling to provide	6 X 33µ	Not stated
Woven fabric	Unwilling to provide	1mm	850-900g/m^2
Adhesive	Unwilling to provide	Not stated	Not stated
Insulation	Unwilling to provide	12mm	130g/m^2
Backing	Unwilling to provide	0.5mm	Not stated
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Clark Wright, 6 Atkins Close, Biggin Hill, Westerham, Kent, TN16 3GB

Test Results: **When tested in accordance with UN Regulation No. 118 Annex 8, the product submitted for test did not produce a vertical burning rate of more than 100mm/minute or if the flame extinguishes before the first marker thread and therefore, in accordance with Section 6.2.3 of the standard, the test results are deemed to be satisfactory.**

Date of Test 13th June 2016

Signatories

Responsible Officer C. Jacques * Technical Officer	Authorised T. Mort * Senior Technical Officer

* For and on behalf of **Exova Warringtonfire**.

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Test Details

Purpose of test

To determine the flammability of the material when it is tested in accordance with UN Regulation No. 118 Annex 8, a test to determine the vertical burning rate of materials.

The test was performed in accordance with the test procedure specified in UN Regulation No. 118 Annex 8 and this test report should be read in conjunction with that Standard.

Fire test study group/EGOLF

Certain aspects of some fire test specifications are open to different interpretations. The Fire Test Study Group and EGOLF have identified a number of such areas and has agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed.

Instruction to test

The test was conducted on the 13th June 2016 at the request of Clark Wright, the sponsor of the test.

Provision of test specimens

The specimens were supplied by the sponsor of the test. **Exova Warringtonfire** was not involved in any selection or sampling procedure.

Conditioning of specimens

The specimens were received on the 10th June 2016.

Prior to the test the specimens were conditioned for at least 24 hours in an atmosphere having a temperature of 23 ± 2°C and a relative humidity of 50 ± 5%.

Test procedure

Three specimens, each measuring 560 mm wide by 170 mm long, were tested with the decorative surface facing towards to the test flame, in accordance with the test procedure specified in the Standard, the gas supplied to the Bunsen burner being natural gas.

Specimen orientation

Specimens were tested in both the production direction and at 90 ° to this direction and the results have been reported.

Description of Test Specimens

No information regarding the composition of the specimens was received at the time of the test. The sponsor has subsequently provided the following description of the specimens and has requested that a report be issued. This information has not been independently verified by **Exova Warringtonfire.** All values quoted are nominal, unless tolerances are given.

General description		Coated woven fabric applied to a mineral fibre insulation and e glass backing
Product reference		"eQuilt"
Name of manufacturer		Clark Wright Limited
Overall thickness		16mm (stated by sponsor)
Thickness tested		12.65mm (determined by **Exova Warringtonfire**)
Overall weight per unit area		8kg/m^2 (stated by sponsor) 5.55kg/m^2 (determined by **Exova Warringtonfire**)
Coating	Generic type	Aluminium loaded silicone
	Product reference	**See Note 1 Below**
	Name of manufacturer	**See Note 1 Below**
	Colour reference	"Grey/silver"
	Number of coats	6
	Application thickness per coat	33µ
	Specific gravity	± 1.3
	Application method	In-line doctor die
	Curing process per coat	In-line UV
	Flame retardant details	**See Note 2 Below**
Woven Fabric	Generic type	Continuous Mineral Fibre
	Product reference	**See Note 1 Below**
	Name of manufacturer	**See Note 1 Below**
	Colour reference	"Brown"
	Thickness	1mm
	Weight per unit area	850 – 900g/m^2
	Type of weave / cell dimensions	Satin
	Flame retardant details	**See Note 2 Below**
Adhesive	Generic type	Assembly/contact
	Product reference	**See Note 1 Below**
	Name of manufacturer	**See Note 1 Below**
	Colour reference	"Golden"/"spider-web"
	Application rate / thickness	**See Note 1 Below**
	Application method	spray
	Flame retardant details	**See Note 2 Below**
	Curing process	air
Insulation	Generic type	Continuous mineral fibre
	Product reference	**See Note 1 Below**
	Name of manufacturer	**See Note 1 Below**
	Colour reference	Golden/brown
	Thickness	12mm
	Weight per unit area	130g/m^2
	Flame retardant details	**See Note 2 Below**

• Continued on next page

Backing	Generic type	E-glass
	Product reference	**See Note 1 Below**
	Detailed description / composition details	Polyurethane coated 200gsm
	Name of manufacturer	**See Note 1 Below**
	Thickness	0.5mm
	Density / weight per unit area	**See Note 1 Below**
	Colour reference	"Black"
	Flame retardant details	**See Note 1 Below**
Brief description of manufacturing process		Laminations cut to each panel template, including an allowance for edging and seaming. Laminations assembled with light application of fire rated contact adhesive to maintain accurate location of the laminations, one to another. Edges sewn to box section. Stitch-line uses Fire rated thread, and sealed with optically clear RTV-Silicone.

Note 1: The sponsor of the test was unwilling to provide this information

Note 2: The sponsor of the test has confirmed that no flame retardants were used in the production of this component.

Test Results

Results of test

The burn rate was calculated using the formula:

$$V = 60\ d/t$$

where V = Burning rate in mm per minutes
d = Burnt distance in mm, and
t = Time in seconds to burn distance s mm

Specimens tested in the warp direction

Specimen No.	Application time	Time for flame to reach 1st marker thread (seconds)	Time for flame to reach 2nd marker thread (seconds)	Time for flame to reach 3rd marker thread (seconds)	Burn Distance for 1st Marker thread	Burn Distance for 2nd Marker thread	Burn Distance for 3rd Marker thread	Burn rate to 1st marker thread (mm/min)	Burn rate 2nd marker thread (mm/min)	Burn rate 3rd marker thread (mm/min)
1	5	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00

Due to the specimen having an after flame time of less than 5 seconds following the removal of the pilot burner, the application time was increased so the pilot burner was then applied for 15 seconds

2	15	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00
3	15	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00
4	15	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00

Specimens tested in the weft direction

Specimen No.	Application time	Time for flame to reach 1st marker thread (seconds)	Time for flame to reach 2nd marker thread (seconds)	Time for flame to reach 3rd marker thread (seconds)	Burn Distance for 1st Marker thread	Burn Distance for 2nd Marker thread	Burn Distance for 3rd Marker thread	Burn rate to 1st marker thread (mm/min)	Burn rate 2nd marker thread (mm/min)	Burn rate 3rd marker thread (mm/min)
1	5	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00

Due to the specimen having an after flame time of less than 5 seconds following the removal of the pilot burner, the application time was increased so the pilot burner was then applied for 15 seconds

2	15	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00
3	15	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00
4	15	DNR	DNR	DNR	DNR	DNR	DNR	0.00	0.00	0.00

Conclusion

When tested in accordance with UN Regulation No. 118 Annex 8, the product submitted for test did not produce a vertical burning rate of more than 100mm/minute or if the flame extinguishes before the first marker thread and therefore, in accordance with Section 6.2.3 of the standard, the test results are deemed to be satisfactory.

Applicability of test results

The test results relate only to the behaviour of the specimens under the particular conditions of this test, they should not be used to infer the fire hazards of the material in other forms or under other fire conditions.

The test results relate only to the specimens of the product in the form in which they 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.

Validity

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

Revision History

Issue No :	Re-issue Date:
Revised By:	Approved By:
Reason for Revision:	

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