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**Tests required by LPS
1215 : Issue 3.1 : 2005
on Monarflex Stripe
Firesmart**

Prepared for:

The Loss Prevention
Certification Board
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Garston
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WD25 9XX

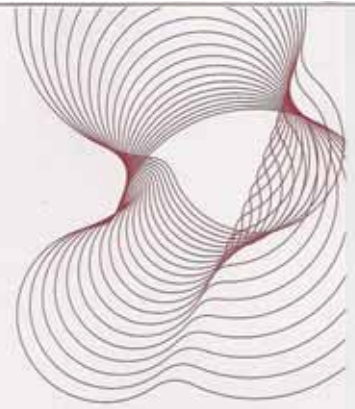
17th March 2009

Test report number 251024



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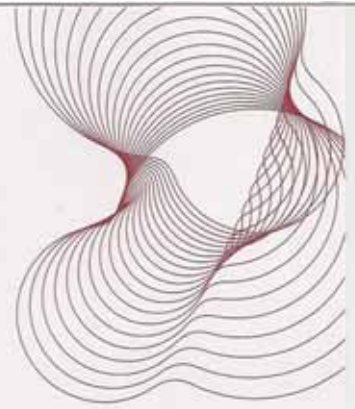
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1 Objective

To determine the performance of the sample specified in Section 2 when subjected to the tests required by LPS 1215 Issue 3.1 : 2005.

2 Sample

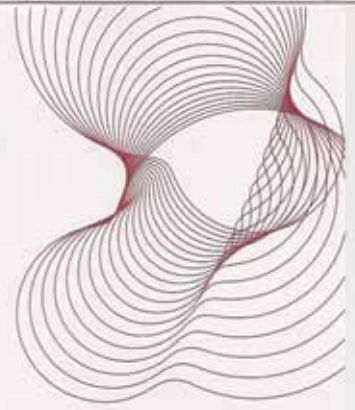
2.1 Traceability

The test samples were supplied by the client. BRE Global were not involved in the sample selection process and therefore cannot comment upon the relationship between samples supplied for test and the product supplied to market.

2.2 Description of sample and test format

Unless otherwise stated all measurements are nominal.

Test Sponsor	The Loss Prevention Certification Board
Project reference	122288/D2096
Manufacturer of sample	Company : Icopal Limited, Barton Dock, Stretford, Manchester, M32 0YL, UK Factory Address : Monarflex S.R.O , Tovarenska 1 , 943 03 Sturovo, Slovakia
Sample name/reference	Monarflex Firemart Stripe
Sample description (as provided by test sponsor/manufacturer)	3 layer product including – Brown LDPE film with flame retardant additives Grid made of 12 x 10 Polypropylene yarns in 3600/2550 dtex quality Coated LDPE layer with flame retardant additives and white reinforcing tapes. Mean sample weight per unit area (g/m ²) Nominal 210 Sample thickness (mm) -: Nominal 0.15 Colour: White Detailed Specification held confidentially by the LPCB under project No. BC1942
Description of sample (as received)	The material was a white plastic sheet with a 12.3mm x 10.0mm reinforcing mesh.
Mean sample weight per unit area (g/m ²)	210
Sample thickness (mm)	Between mesh 0.12, over mesh 0.63



Sample receipt date	19 th January 2009
Test face	One face of the material was tested
Test format	The specimen was supplied as a roll from which specimens were cut: <ul style="list-style-type: none"> • 18 specimens, 300mm x 300mm, for the small flame test • 18 specimens, 750mm x 500mm, for the medium flame test • one specimen, 2m x 2m, for the flammable liquid test.

3 Conditioning

The specimens were conditioned as required by the standard.

4 Small flame test

4.1 Procedure

- 4.1.1 The test was carried out at BRE, Garston on 11th February 2009.
- 4.1.2 The test was carried out to BS 476 : Part 12 : 1991 using ignition source C with 5s, 10s and 20s flame application times. Three specimens were subjected to face ignition and three to edge ignition time.
- 4.1.3 The ambient temperature at the time of the test was 15°C.

4.2 Results

The results achieved in the test are given in Tables 1 – 3.

Table 1 Test results - source C - 5s flame application

Run	Specimen	Flame position	Ignition	Flames reached edge	Comments
1	23	Face	No	No	
2	20	Face	No	No	
3	7	Face	No	No	
4	11	Edge	No	No	
5	25	Edge	No	No	
6	24	Edge	Transient	No	+3s flaming

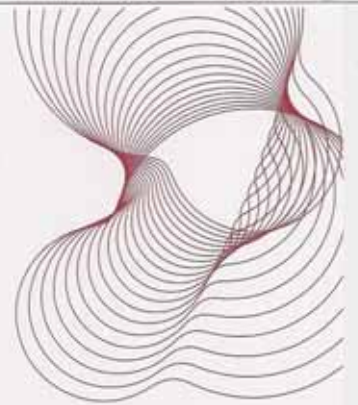


Table 2 Test results - source C - 10s flame application

Run	Specimen	Flame position	Ignition	Flames reached edge	Comments
1	22	Face	Transient	No	+1s flaming
2	13	Face	Transient	No	Flaming drips while test flame applied +1s flaming
3	18	Face	No	No	
4	15	Edge	No	No	
5	16	Edge	No	No	
6	14	Edge	No	No	

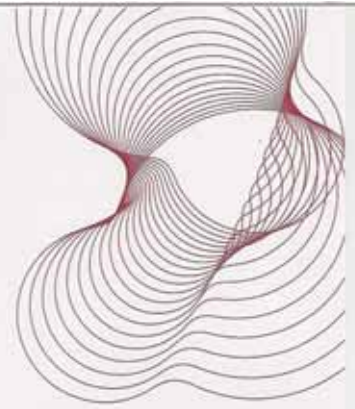
Table 3 Test results - source C- 20s flame application

Run	Specimen	Flame position	Ignition	Flames reached edge	Comments
1	17	Face	No	No	Flaming drips while test flame applied
2	12	Face	No	No	
3	10	Face	No	No	
4	8	Edge	No	No	
5	9	Edge	No	No	
6	19	Edge	No	No	Flaming drips while test flame applied

4.3 Criteria

The requirements for the Small Flame test of LPS 1215² are:

- a) Transient ignition: maximum of 10s flaming after flame removal
- b) No flaming droplets or flaming debris 10s after flame removal
- c) No flaming reaching any edge of the specimen during the application of the ignition source
- d) Spread of flame not to reach the edge of the specimen at any point within 10 seconds of the end of the flame application time.



5 Medium flame test

5.1 Procedure

- 5.1.1 The test was carried out at BRE, Garston on 17th February 2009.
- 5.1.2 The test was carried out to BS 476 : Part 12 : 1991 using ignition source G with 20s, 40s and 60s flame application times. Three specimens were subjected to face ignition and three to edge ignition for each time.
- 5.1.3 The ambient temperature at the time of the test was 20°C.

5.2 Results

The results achieved in the test are given in Tables 4 – 6

Table 4 Test results - source G - 20s flame application

Run	Specimen	Flame position	Ignition	Flames reached edge	Comments
1	26	Face	No	No	Flaming drips while test flame applied Drips while test flame applied
2	27	Face	No	No	
3	28	Face	No	No	
4	38	Edge	No	No	
5	39	Edge	No	No	
6	40	Edge	No	No	

Table 5 Test results - source G- 40s flame application

Run	Specimen	Flame position	Ignition	Flames reached edge	Comments
1	29	Face	No	No	
2	30	Face	No	No	
3	31	Face	No	No	
4	41	Edge	No	No	
5	42	Edge	No	No	
6	43	Edge	No	No	

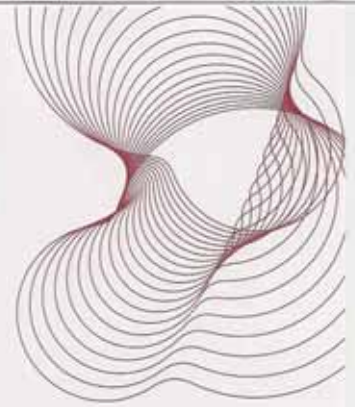


Table 6 Test results - source G- 60s flame application

Run	Specimen	Flame position	Ignition	Flames reached edge	Comments
1	32	Face	No	No	
2	34	Face	No	No	
3	33	Face	No	No	
4	36	Edge	No	No	
5	37	Edge	No	No	
6	35	Edge	No	No	

5.3 Criteria

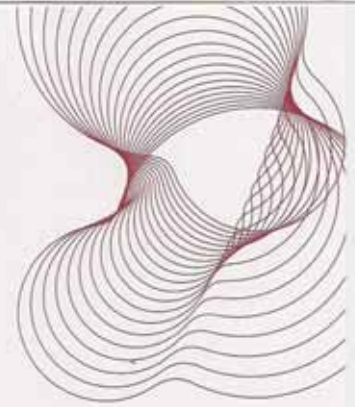
The requirements for the Medium Flame test of LPS 1215² are:

- a) Transient ignition: no flaming after 10s from flame removal
- b) No flaming droplets or flaming debris 10s after flame removal
- c) No flaming reaching any edge of the specimen during the application of the ignition source
- d) Spread of flame not to reach the edge of the specimen at any point within 10 seconds of the end of the flame application time.

6 Flammable liquid test

6.1 Procedure

- 6.1.1 The test was carried out at BRE, Garston on 25th February 2009.
- 6.1.2 The sheeting was arranged vertically in one piece 2.0m wide x 2.0m high with the bottom edge 250mm above the ground.
- 6.1.3 A 300mm-diameter steel tray, as specified in Section 3.1.3.2 of the standard¹, containing 0.5 litres of heptane over 10mm-deep water, was positioned centrally below the mid-width position of the sheeting with a clearance of 150mm, as required, between the top of the tray and bottom edge of the sheeting. The test was started by igniting the heptane.



6.2 Results

The results achieved in the test are given in Table 7

Ignition of sample (s)	Heptane ceases flaming (min:s)	Extent of damage		Flaming reaches edge (Yes or No)		Flaming Droplets observed (yes or no)	Transient Ignition (after heptane stops burning) (s)
		Length (mm)	Width (mm)	At any point during test (s)	Within 10 seconds of end of flame application		
None	4:27	890	830	No	No	No	No

6.3 Criteria

The requirements of the Flammable Liquid test to LPS 1215 are:

- transient ignition: maximum of 10 seconds flaming after the heptane stops burning,
- no flaming droplets or flaming debris 10 seconds after the heptane stops burning,
- no flaming reaching any edge of the specimen during application of the ignition source,
- spread of flame not to reach the edge of the specimen at any point within 10 seconds of the end of the flame application time.

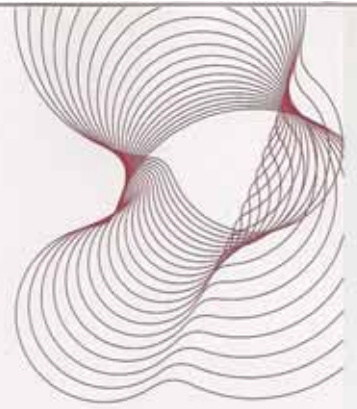
7 Conclusions

A sample as described in this report, when subjected to the tests required by LPS 1215 : Issue 3.1 : 2005 achieved the following results

- satisfied the requirements of the small flame test.
- satisfied the requirements of the medium flame test
- satisfied the requirements of the flammable liquid test

8 Validity

The test results relate only to the behaviour of the test specimen of the 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.



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 5 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.

9 References

- 1 Loss Prevention Standard 1215 : Issue 3.1 : 2005. BRE Certification, Garston, Watford, WD25 9XX.
- 2 Fire tests on building materials and structures. Part 12. Method of test for ignitability of products by direct flame impingement. British Standard 476 : Part 12 : 1991. British Standards Institution, London, 1991.

=====REPORT ENDS=====