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BRE Global Classification Report

Classification of reaction to fire performance in accordance with EN 13501-1: 2018 on Delta MS 500 Fire

Prepared for: **Delta Membrane Systems Limited**

Date: **28 January 2021**

Report Number: **Q101176-1002 Issue 1**

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Table of Contents

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1 Introduction

This classification report defines the classification assigned to 'Delta MS 500 Fire' in accordance with the procedures given in EN 13501-1: 2018[1].

BRE Global

CLASSIFICATION OF REACTION TO FIRE IN ACCORDANCE WITH EN 13501-1: 2018

Sponsor:	Delta Membrane Systems Limited, Delta House, Merlin Way, North Weald, Essex, CM16 6HR, England
Prepared for:	Delta Membrane Systems Limited, Delta House, Merlin Way, North Weald, Essex, CM16 6HR, England
Manufacturer:	Dörken GmbH & Co., Wetterstraße 58, D-58313 Herdecke, Germany
Place of Manufacture:	Herdecke, Germany
Prepared by:	BRE Global, Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX, UK
Notified Body No.:	0832
Product name:	Delta MS 500 Fire
Classification report No.:	Q101176-1002
Issue number:	One
Date of issue:	28 January 2021

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2 Details of classified product

2.1 General

The product, 'Delta MS 500 Fire', is defined by the test sponsor as a flexible sheet for waterproofing, specifically a fire retardant cavity drainage membrane, as specified in EN 13967[2].

2.2 Product description

The product, 'Delta MS 500 Fire', is described in section 2.2.2.

2.2.1 Traceability

The test samples were supplied by the test sponsor. BRE Global was not involved in the sample selection process and therefore cannot comment upon the relationship between the samples supplied for test and the product supplied to market. The results apply to the sample as received.

2.3 Sample details

Unless otherwise stated all measurements are nominal.

Parameter	**Details**
Test sponsor	Delta Membrane Systems Limited Delta House Merlin Way North Weald Essex CM16 6HR England
Prepared for	Delta Membrane Systems Limited Delta House Merlin Way North Weald Essex CM16 6HR England
Manufacturer of sample	Dörken GmbH & Co. Wetterstraße 58 D-58313 Herdecke Germany
Place of manufacture	Herdecke, Germany
Trade name	Delta MS 500 Fire
Sample reference	Delta MS 500 Fire – (DMS 052)
Sample description (as provided by test sponsor/manufacturer)	Fire retardant cavity drainage membrane. See Table A.1 of this report for the test sponsor's product description.

Parameter	Details
Description of sample (as received)	An off-white, nominal 8 mm deep, studded plastic profile, as shown Figure A.1 of this report. The sample was supplied in a roll nominally 375 mm-wide by 5 m-long. The sample consisted of: • A flat plastic section approximately 50 mm-wide. • A profiled section, approximately 200 mm-wide, with six studs per line arranged in a staggered configuration. The stud holes measured approximately 10 mm at the base rising to approximately 18.5 mm at the top (internal dimensions) • A flat plastic section approximately 120 mm-wide. The profile was thickest at the edges and thinnest within the profiled region.
Test sponsor's product data	
Generic type of product	High density polyethylene (HDPE), FR treated
FR additive (%)	15
Nominal sheet thickness (mm)	0.5
Stud height (mm)	8
Nominal density (kg/m³)	Note 1
Nominal mass per unit area (kg/m²)	0.5
Colour	White
Flame retardant treatment added, or organic content limited during production (yes/no)	15% fire retardant added during production
European product standard, if applicable	EN 13967[2]
Substrate and ventilation conditions – EN ISO 11925-2	
Generic type of substrate	None
Type of air gap	Not applicable
Substrate and ventilation conditions – EN 13823	
Generic type of substrate	Calcium silicate
Nominal thickness (mm)	12
Nominal density (kg/m³)	870 ± 50
Nominal mass per unit area (kg/m²)	10.44 ± 0.6
Type of air gap	None
Measured sample data, determined by BRE Global, measured at 23 °C ± 3 °C and 50 % ± 5 % relative humidity	
Mean sample thickness (mm)	EN 13823: Variable 0.32 to 0.91 (full width) EN ISO 11925-2: 0.94 (range 0.91 to 0.97) max.

Parameter	Details
Mean sample mass per unit area (kg/m²)	EN 13823: 524.70 (full width) EN ISO 11925-2: 695.7 (range 663.4 to 717.4) (profiled section)
Test information	
Face to be tested	Interior (planar) face
Orientation aspects	Studs directed away from the test face
Test sponsor's sampling identification	Delta MS 500 Fire (DMS 052) – KD21-7-20
BRE Global sample number	E12945, E12946 and E13187
Additional information	PO No.: 17217

Note 1: This information was not supplied by the test sponsor.

3 Reports & results in support of this classification

3.1 Reports

Name of Laboratory	Name of test sponsor	Test reports Nos.	Test method/field of application rules
BRE Global	Delta MS 500 Fire (DMS 052)	Q101176-1001 Issue 1	EN 13823[3]
BRE Global	Delta MS 500 Fire (DMS 052)	Q101176-1000 Issue 1	EN ISO 11925-2[4]

3.2 Results

Test method & test number	Parameter	No. test runs	Results	
			Continuous parameter - mean (m)	Compliance with parameters Criterion / Compliance status B-s2, d0
EN 13823 Q101176-1001 Tested:07/10/2020 & 24/11/2020 E12946 & E13187	FIGRA $_{0.2MJ}$ FIGRA $_{0.4MJ}$ LFS THR $_{600s}$	3	110.69 W/s 110.69 W/s (-) 4.16 MJ	≤ 120 W/s / Compliant - / - ≤ edge of specimen / Compliant ≤ 7.5 MJ / Compliant
	SMOGRA TSP$_{600s}$		35.12 m²/s² 83.73 m²	≤ 180 m²/s² / Compliant ≤ 200 m² / Compliant
	Flaming droplets/particles ≤ 10s Flaming droplets/particles > 10s		Not observed Not observed	Flaming ≤ 10s / Compliant Flaming > 10s / Compliant
EN ISO 11925-2 **30s Surface** Q101176-1000 Tested: 14/09/2020 E12945	F_s Flaming droplets/particles	6	Not observed Not observed	≤ 150 mm within 60s / Compliant No ignition of paper / Compliant
EN ISO 11925-2 **30s Edge** Q101176-1000 Tested: 30/11/2020 E13187	F_s Flaming droplets/particles	7	Not observed Not observed	≤ 150 mm within 60s / Compliant No ignition of paper / Compliant

4 Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with EN 13501-1: 2018.

4.2 Classification

The product, 'Delta MS 500 Fire', in relation to reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s2

The additional classification in relation to flaming droplets / particles is:

d0

The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation products is:

Fire Behaviour		Smoke Production			Flaming Droplets	
B	-	s	2	,	d	0

i.e. B-s2, d0

Reaction to fire classification: B-s2, d0

4.3 Field of application

This classification is valid for:

i) High density polyethylene (HDPE), FR treated cavity drainage membrane.

And the following product and mounting and fixing parameters:

Parameter	Field of application
Colour	White. No variation in colour allowed.
Fire retardant additive	15% fire retardant added during production. No variation in the type or quantity of fire retardant additive allowed.
Profile	As tested. No variation in profile allowed.
Composition	As tested. No variation in composition allowed.
Build-up and ordering of layers	As tested. No variation in build-up allowed.
Inner layer	None. No variation allowed.
Backing	None. No variation allowed.

Parameter	Field of application
Overall thickness	Valid as tested. No variation in thickness allowed. Variable 0.32 mm to 0.97 mm measured by BRE Global.
Density	As tested. No variation in density allowed.
Nominal mass per unit area	Nominal 0.5 kg/m². No variation in mass per unit area allowed outside manufacturing tolerances. 525 g/m² measured by BRE Global.
Product orientation and geometry	Mounted with the studs directed away from the exposed face. No variation in product orientation allowed.
Joints and exposed edges	Valid for exposed joints and edges.

This classification is valid for the following end-use applications:

i) Mounted (loose-laid or mechanically fixed using metallic fixings) directly against an end-use substrate with a density greater than or equal to 653 kg/m³ , with a thickness greater than or equal to 11 mm and classified A2-s1, d0 or A1 in accordance with EN 13501-1[1], excluding paper-faced gypsum plasterboard.

5 Limitations

This classification document does not represent type approval or certification of the product.

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.

The information in section 2.2.2 of this report, other than that indicated otherwise, was supplied by the test sponsor and was not independently verified by BRE Global. The validity of the results is conditional on the accuracy of that data.

6 References

1. EN 13501-1: 2018. Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests. CEN, Rue de la Science 23, B-1040 Brussels. 2018.

2. EN 13967: 2012 + A1: 2017. Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet - Definitions and characteristics. CEN, Avenue Marnix 17, B-1000 Brussels. 2017.

3. EN 13823: 2010 + A1: 2014. Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item'. CEN, Avenue Marnix 17, B-1000 Brussels. 2014.

4. EN ISO 11925-2: 2010. Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test. CEN, Avenue Marnix 17, B-1000 Brussels. 2010.

Appendix A Product description

Table A.1: Test sponsor's product description

Test Sponsor (Company name and address): Delta Membrane Systems Ltd

Delta House Merlin Way North Weald Essex CM16 6HR

Parameter		Details (if applicable)
Trade name		Delta MS 500 Fire
General description		Fire Retardant Cavity Drainage Membrane
Name and address of manufacturer of product		Dorken GmbH & Co Wetterstrabe 58, D-58313 Herdecke, Germany
Place of manufacture		Herdecke, Germany
Product reference/number		Delta MS 500 Fire – (DMS 052)
Thickness		0.5 mm
Density		Note 1
Mass per unit area		0.5
Generic type of product		HDPE
Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details		15% Fire Retardant added during production
European product standard, if applicable		DIN EN 13967: 2004
Industry/in-house product standard, if applicable		Note 1
Interior facing 1 (test face)	- Generic type - Product reference - Manufacturer - Thickness - Mass per unit area/ density - Colour reference - Trade name flame retardant - Generic type flame retardant - Amount flame retardant	HDPE Delta MS 500 Fire (DMS 052) Dorken GmbH 0.5 0.5 White Note 1 Note 1 15%
Interior facing 2	- Generic type - Product reference - Manufacturer - Thickness - Mass per unit area/ density - Colour reference - Trade name flame retardant - Generic type flame retardant - Amount flame retardant	Note 1 Note 1 Note 1 Note 1 Note 1 Note 1 Note 1 Note 1 Note 1
Core material	- Generic type - Product reference - Manufacturer - Thickness - Mass per unit area/density - Colour reference - Trade name flame retardant - Generic type flame retardant - Amount flame retardant	Note 1 Note 1 Note 1 Note 1 Note 1 Note 1 Note 1 Note 1 Note 1

Test Sponsor (Company name and address): Delta Membrane Systems Ltd

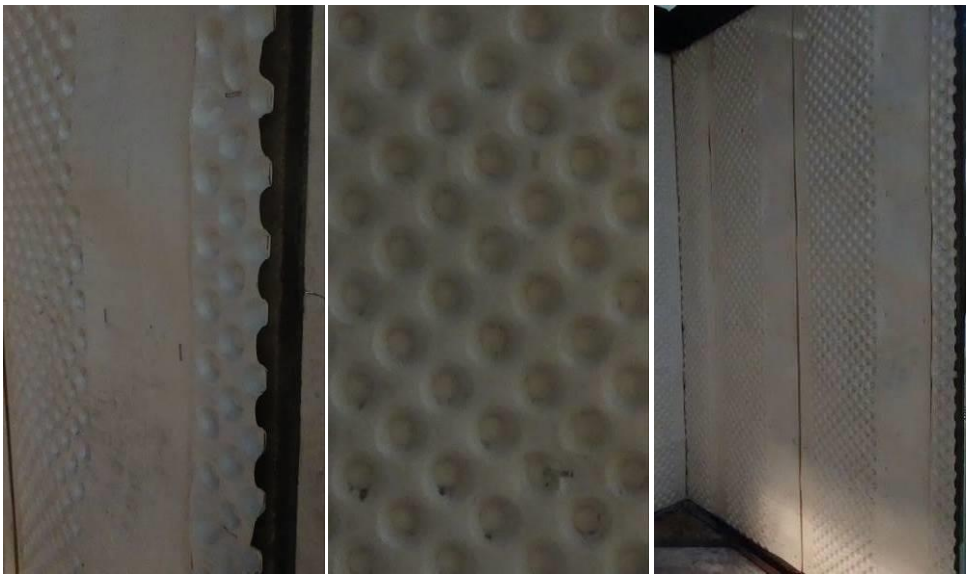
Delta House Merlin Way North Weald Essex CM16 6HR

Parameter		Details (if applicable)
Exterior facing 2	- Generic type	Note 1
	- Product reference	Note 1
	- Manufacturer	Note 1
	- Thickness	Note 1
	- Mass per unit area/density	Note 1
	- Colour reference	Note 1
	- Trade name flame retardant	Note 1
	- Generic type flame retardant	Note 1
	- Amount flame retardant	Note 1
Exterior facing 1	- Generic type	Note 1
	- Product reference	Note 1
	- Manufacturer	Note 1
	- Thickness	Note 1
	- Mass per unit area/density	Note 1
	- Colour reference	Note 1
	- Trade name flame retardant	Note 1
	- Generic type flame retardant	Note 1
	- Amount flame retardant	Note 1
Adhesive (if applicable)	- Generic type	Note 1
	- Product reference	Note 1
	- Manufacturer	Note 1
	- Application rate	Note 1
	- Application method	Note 1
	- Specific gravity	Note 1
	- Colour reference	Note 1
	- Trade name flame retardant	Note 1
	- Generic type flame retardant	Note 1
	- Amount flame retardant	Note 1
Substrate (if applicable)	- Generic type	Note 1
	- Product standard	Note 1
	- Product name/reference	Note 1
	- Manufacturer	Note 1
	- Thickness	Note 1
	- Density or mass per unit area	Note 1
	- Class (EN 13501-1)	Note 1
Face to be tested		Interior
Orientation aspects		Note 1
Sampling Identification Reference		Delta MS500 Fire (DMS 0-52) – KD21-7-20
Additional information		Note 1

Note 1: This information was not supplied by the test sponsor.

Figure A.1: EN ISO 11925-2 test sample, as received

Figure A.2: EN 13823 test sample



Report Ends