Clayworks

FIRE CERTIFICATES

Clayworks

FIRE CERTIFICATES & CLASSIFICATION

EUROCLASS A1 FIRE RATING

Smooth, Tonal, Demi-Rustic and Rustic Clay Plasters

Clayworks Custom Finishes

Clayworks Exterior Finishes

ASTM E84 PASS

Smooth Finishes

Rustic Finishes

Tadelakt Finishes

Clayworks

FIRE CERTIFICATES & CLASSIFICATION

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BRE Global Classification Report

Classification of reaction to fire performance in accordance with BS EN 13501-1: 2018 on Clayworks Smooth Topcoat

Prepared for: Clayworks Limited
Date: 07 November 2022
Report Number: P124112-1002 Issue 1

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Prepared for:

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Name C A Rock

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Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 07 November 2022

Signature 

bre

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1 Introduction

This classification report defines the classification assigned to 'Clayworks Smooth Topcoat' in accordance with the procedures given in BS EN 13501-1: 2018[1].

BRE Global

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

Sponsor:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Prepared for:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Manufacturer:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Place of Manufacture:	Cornwall, United Kingdom
Prepared by:	BRE Global, Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX, UK
Notified Body No.:	0832
Product name:	Clayworks Smooth Topcoat
Classification report No.:	P124112-1002
Issue number:	One
Date of issue:	16 October 2022

This classification report consists of 11 pages and may only be used or reproduced in its entirety.

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2 Details of classified product

2.1 General

The product, 'Clayworks Smooth Topcoat', is defined by the test sponsor as a clay plastering mortar in accordance with BS EN 998-1[2].

2.2 Product description

The product, 'Clayworks Smooth Topcoat', 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 sampling process and therefore cannot comment upon the relationship between the samples supplied for test and the products supplied to market. The results apply to the samples as received.

2.2.2 Sample details

Unless otherwise stated all measurements are nominal.

Parameter	Details
Test sponsor	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Prepared for	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Manufacturer of sample	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Place of manufacture	Cornwall, United kingdom
Place of manufacture	Clayworks Smooth Topcoat
Sample reference	Smooth Topcoat
Sample description (as provided by test sponsor/manufacturer)	Smooth finish clay plaster. The test sponsor's product description is shown in Appendix A of this

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Parameter	Details
	report.
Description of sample (as received)	An off-white granular material ground to a fine powder by a representative of BRE Global and a set of off-white cylinders meeting the dimension requirements specified in BS EN ISO 1182[2] . The test samples as received are shown in Appendix A of this report.
Test sponsor's product data	
Generic type of product	Clay plaster
Nominal thickness of product (mm)	Various
Nominal density of product (kg/m³)	1600
Nominal mass per unit area of product (kg/m²)	Various, dependant on thickness
Colour	Off-white (determined by BRE Global)
Finish	Smooth
Flame retardant treatment added, or organic content limited during production (yes/no)	No
European product standard, if applicable	BS EN 998-1[2]
Substrate and ventilation conditions	
Generic type of substrate	None
ventilation condition	
Type of air gap	None
Measured sample data, measured by BRE Global, determined by BRE Global at 23 °C ± 2 °C and 50% ± 5% RH (Based on BS EN ISO 1182 test specimens, Batch 1)	
Mean sample density (kg/m³)	1674.7 (range 1643.2 to 1721.6)
Measured sample data, measured by BRE Global, determined by BRE Global at 23 °C ± 2 °C and 50% ± 5% RH (Based on BS EN ISO 1182 test specimens, Batch 2)	
Mean sample height (mm)	49.52 (range 49.11 to 49.86)
Mean sample mass per unit area (kg/m²)	83.35 (range 80.03 to 84.89)
Mean sample density (kg/m³)	1683.0 (range 1629.6 to 1704.3)
Test information	
Face to be tested	Not applicable, homogeneous
Orientation aspects	Not applicable
Test sponsor's sampling identification	Note 1
BRE Global sample number	E14392 and E14485
Additional information	None

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

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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	Clayworks Limited	P124112-1000 Issue 1	EN ISO 1182[3]
BRE Global	Clayworks Limited	P124112-1001 Issue 1	EN ISO 1716[4]

3.2 Results

Test method & test number	Parameter	No. test runs	Results	
			Continuous parameter - mean (m)	Compliance with parameters Criterion / Compliance status, A1
BS EN ISO 1182 P124112-1000 Tested: 05/10/2022 & 10/10/2022 E14485	ΔT	5	0.45 °C	$\Delta T \leq 30$ °C / Compliant
	Δm		4.9 %	$\Delta m \leq 50$ % / Compliant
	t_f		0 s	$t_f = 0$ / Compliant
BS EN ISO 1716 P124112-1001 Tested: 02/09/2022 & 16/09/2022 E14392	Q_{PCS}	3	0.24 MJ/kg	$Q_{PCS} \leq 2.0$ MJ/kg / Compliant

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4 Classification and field of application

4.1 Reference of classification

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

4.2 Classification

The product, 'Clayworks Smooth Topcoat', in relation to reaction to fire behaviour is classified:

A1

The additional classification in relation to smoke production is:

-

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

-

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	
A1	-	s	-	,	d	-

i.e., A1

Reaction to fire classification: A1

4.3 Field of application

This classification is valid for:

i) Clay plastering mortar.

And the following product and mounting and fixing parameters:

Parameter	Field of application
Colour	Off-white. As tested, no variation in colour allowed.
Finish	As tested. No variation in finish allowed.
Composition	As tested. No variation in composition allowed.
Facing	None. No variation allowed.
Overall thickness	Valid for all thicknesses
Density	Nominal 1600. 1683.0 kg/m³ (range 1629.6 kg/m³ to 1704.3 kg/m³) measured by BRE. No variation in density allowed.

5 Limitations

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

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products.

The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures, or stages (e.g., no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence, the manufacturer has concluded that system 3 attestation is appropriate.

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.

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurement of reaction to fire, it is not possible to provide a stated degree of accuracy of the results.

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6 References

1. BS EN 13501-1: 2018. Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests. BSI, London. 2018.
2. BS EN 998-1: 2016. Specification for mortar for masonry. Part 1: Rendering and plastering mortar. BSI, London. 2016.
3. BS EN ISO 1182: 2020. Reaction to fire tests for products - Non-combustibility test. BSI, London. 2020.
4. BS EN ISO 1716: 2018. Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value). BSI, London. 2018.

Appendix A Sample description

Table A.1: Test sponsor's product description

Test sponsor Clayworks Ltd., Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Cornwall TR127AZ	
Parameter	**Details**
Trade name of product tested	Clayworks Smooth Topcoat
General description of product tested	Smooth Finish Clay Plaster
Name and address of manufacturer of product	Clayworks Ltd, Unit 5 Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall TR12 7AZ
Place of manufacture	Cornwall, UK
Product reference/number	Smooth Topcoat
Overall thickness	2 mm
Overall density	1600 kg/m³
Overall mass per unit area	3.125 kg/m²
Generic type of product	Clay Plaster
Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details	None
Harmonised EN product standard, and AVCP System No. if applicable	Note 1
Product breakdown	
Core material - Generic type	Clay Plaster
- Product reference/name	Smooth Topcoat
- Manufacturer	Clayworks Ltd
- Batch No.	Note 1
- Thickness	2 mm
- Mass per unit area/ density	3.125 kg/m²
- Colour reference	Note 1
- Trade name flame retardant	Note 1
- Generic type flame retardant	Note 1
- Amount flame retardant	Note 1
Sampling Identification Reference (if applicable)	Note 1
Additional information	Note 1

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

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Figure A.1: Test sample as received (BS EN ISO 1182)

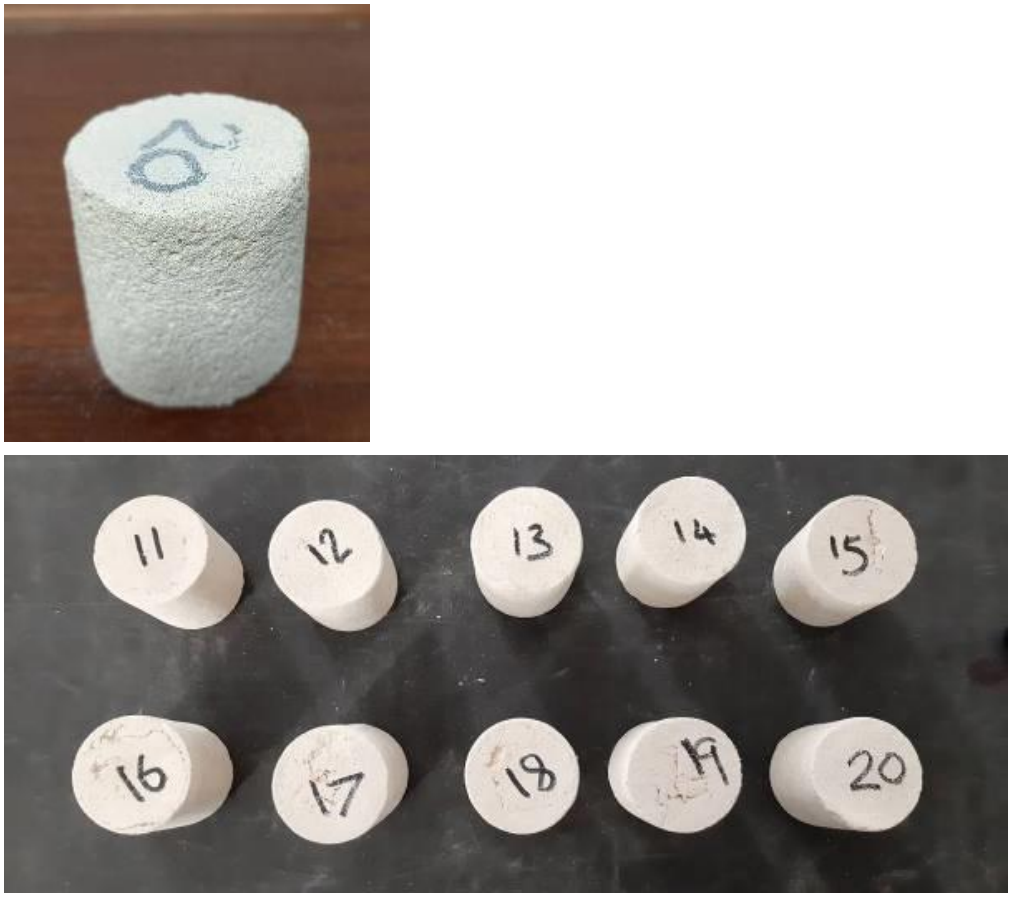

Figure A.2: Test sample as received (BS EN ISO 1716)

Report Ends

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BRE Global Classification Report

Classification of reaction to fire performance in accordance with BS EN 13501-1: 2018 on Clayworks Rustic

Prepared for: Clayworks Limited
Date: 07 November 2022
Report Number: P124111-1002 Issue 1

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Prepared by

Name C A Rock

Position Principal Consultant

Signature 

Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 07 November 2022

Signature 

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1 Introduction

This classification report defines the classification assigned to 'Clayworks Rustic' in accordance with the procedures given in BS EN 13501-1: 2018[1].

BRE Global

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

Sponsor:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Prepared for:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Manufacturer:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Place of Manufacture:	Cornwall, United Kingdom
Prepared by:	BRE Global, Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX, UK
Notified Body No.:	0832
Product name:	Clayworks Rustic
Classification report No.:	P124111-1002
Issue number:	One
Date of issue:	16 September 2022

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2 Details of classified product

2.1 General

The product, 'Clayworks Rustic', is defined by the test sponsor as a clay plastering mortar in accordance with BS EN 998-1[2].

2.2 Product description

The product, 'Clayworks Rustic', 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 sampling process and therefore cannot comment upon the relationship between the samples supplied for test and the products supplied to market. The results apply to the samples as received.

2.2.2 Sample details

Unless otherwise stated all measurements are nominal.

Parameter	Details
Test sponsor	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Prepared for	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Manufacturer of sample	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Place of manufacture	Cornwall, United Kingdom
Place of manufacture	Clayworks Rustic
Sample reference	Rustic
Sample description (as provided by test sponsor/manufacturer)	Rustic Finish Clay Plaster. The test sponsor's product description is shown in Appendix A of this

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Parameter	Details
	report.
Description of sample (as received)	A light brown/buff coloured granular material ground to a fine powder by a representative of BRE Global and a set of light brown/buff coloured cylinders meeting the dimension requirements specified in BS EN ISO 1182[2] . The test samples as received are shown in Appendix A of this report.
Test sponsor's product data	
Generic type of product	Clay plaster
Nominal thickness of product (mm)	Various
Nominal density of product (kg/m³)	1722
Nominal mass per unit area of product (kg/m²)	Various, dependant on thickness
Colour	Light brown/buff (determined by BRE Global)
Finish	Rustic
Flame retardant treatment added, or organic content limited during production (yes/no)	No
European product standard, if applicable	BS EN 998-1[2]
Substrate and ventilation conditions	
Generic type of substrate	None
ventilation condition	
Type of air gap	None
Measured sample data, measured by BRE Global, determined by BRE Global at 23 °C ± 2 °C and 50% ± 5% RH (Based on BS EN ISO 1182 test specimens)	
Mean sample height (mm)	49.36 (range 49.71 to 49.87)
Mean sample mass per unit area (kg/m²)	83.38 (range 81.00 to 84.69)
Mean sample density (kg/m³)	1689.2 (range 1666.2 to 1703.2)
Test information	
Face to be tested	Not applicable, homogeneous
Orientation aspects	Not applicable
Test sponsor's sampling identification	Note 1
BRE Global sample number	E14387 and E14391
Additional information	None

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

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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	Clayworks Limited	P124111-1000 Issue 1	EN ISO 1182[3]
BRE Global	Clayworks Limited	P124111-1001 Issue 1	EN ISO 1716[4]

3.2 Results

Test method & test number	Parameter	No. test runs	Results	
			Continuous parameter - mean (m)	Compliance with parameters Criterion / Compliance status, A1
BS EN ISO 1182 P124111-1000 Tested: 09/09/2022, 13/09/2022 & 14/09/2022 E14387	ΔT	5	0.46 °C	$\Delta T \leq 30$ °C / Compliant
	Δm		1.4 %	$\Delta m \leq 50$ % / Compliant
	t_f		0 s	$t_f = 0$ / Compliant
BS EN ISO 1716 P124111-1001 Tested: 16/09/2022 E14391	Q_{PCS}	3	0.16 MJ/kg	$Q_{PCS} \leq 2.0$ MJ/kg / Compliant

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4 Classification and field of application

4.1 Reference of classification

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

4.2 Classification

The product, 'Clayworks Rustic', in relation to reaction to fire behaviour is classified:

A1

The additional classification in relation to smoke production is:

-

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

-

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	
A1	-	s	-	,	d	-

i.e., A1

Reaction to fire classification: A1

4.3 Field of application

This classification is valid for:

i) Clay plaster.

And the following product and mounting and fixing parameters:

Parameter	Field of application
Colour	Light brown/buff. As tested, no variation in colour allowed.
Finish	As tested. No variation in finish allowed.
Composition	As tested. No variation in composition allowed.
Facing	None. No variation allowed.
Overall thickness	Valid for all thicknesses
Density	Nominal 1722 (1689.2 kg/m³ ± 23 kg/m³ measured by BRE). No variation in density allowed.

5 Limitations

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

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products.

The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures, or stages (e.g., no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence, the manufacturer has concluded that system 3 attestation is appropriate.

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.

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurement of reaction to fire, it is not possible to provide a stated degree of accuracy of the results.

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6 References

1. BS EN 13501-1: 2018. Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests. BSI, London. 2018.
2. BS EN 998-1: 2016. Specification for mortar for masonry. Part 1: Rendering and plastering mortar. BSI, London. 2016.
3. BS EN ISO 1182: 2020. Reaction to fire tests for products - Non-combustibility test. BSI, London. 2020.
4. BS EN ISO 1716: 2018. Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value). BSI, London. 2018.

Appendix A Product description

Table A.1: Test sponsor's product description

Test sponsor Clayworks Ltd., Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Cornwall TR127AZ	
Parameter	**Details**
Trade name of product tested	Clayworks Rustic
General description of product tested	Rustic Finish Clay Plaster
Name and address of manufacturer of product	Clayworks Ltd, Unit 5 Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall TR12 7AZ
Place of manufacture	Cornwall, UK
Product reference/number	Rustic
Overall thickness	8 mm
Overall density	1722 kg/m³
Overall mass per unit area	16.65 kg/m²
Generic type of product	Clay Plaster
Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details	None
Harmonised EN product standard, and AVCP System No. if applicable	Note 1
Product breakdown	
Core material - Generic type	Clay Plaster
- Product reference/name	Rustic
- Manufacturer	Clayworks Ltd
- Batch No.	Note 1
- Thickness	8 mm
- Mass per unit area/ density	16.65 kg/m²
- Colour reference	Note 1
- Trade name flame retardant	Note 1
- Generic type flame retardant	Note 1
- Amount flame retardant	Note 1
Sampling Identification Reference (if applicable)	Note 1
Additional information	Note 1

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

Figure A.1: Test sample as received (BS EN ISO 1182)

Figure A.2: Test sample as received (BS EN ISO 1716)

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BRE Global Classification Report

Classification of reaction to fire performance in accordance with BS EN 13501-1: 2018 on Clayworks Exterior Finishes

Prepared for: Clayworks Limited
Date: 07 November 2022
Report Number: P124110-1002 Issue 1

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Signature 

Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 07 November 2022

Signature 

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1 Introduction

This classification report defines the classification assigned to 'Clayworks Exterior Finishes' in accordance with the procedures given in BS EN 13501-1: 2018[1].

BRE Global

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

Sponsor:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Prepared for:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Manufacturer:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Place of Manufacture:	Cornwall, United Kingdom
Prepared by:	BRE Global, Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX, UK
Notified Body No.:	0832
Product name:	Clayworks Exterior Finishes
Classification report No.:	P124110-1002
Issue number:	One
Date of issue:	16 September 2022

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2 Details of classified product

2.1 General

The product, 'Clayworks Exterior Finishes', is defined by the test sponsor as a lime-based rendering and plastering mortar in accordance with BS EN 998-1[2].

2.2 Product description

The product, 'Clayworks Exterior Finishes', 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 sampling process and therefore cannot comment upon the relationship between the samples supplied for test and the products supplied to market. The results apply to the samples as received.

2.2.2 Sample details

Unless otherwise stated all measurements are nominal.

Parameter	Details
Test sponsor	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Prepared for	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Manufacturer of sample	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Place of manufacture	Cornwall, United Kingdom
Trade name (as provided by test sponsor)	Clayworks Exterior Finishes
Sample reference	Exterior Finish
Sample description (as provided by test sponsor/manufacturer)	Exterior Lime Render. The test sponsor's product description is shown in Appendix A of this report.

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Parameter	Details
Description of sample (as received)	A light sand/buff coloured granular material ground to a fine powder by a representative of BRE Global and a set of light sand/buff coloured cylinders meeting the dimension requirements specified in BS EN ISO 1182[2] . The test samples as received are shown in Appendix A of this report.
Test sponsor's product data	
Generic type of product	Lime Render
Nominal thickness of product (mm)	Various
Nominal density of product (kg/m³)	1650
Nominal mass per unit area of product (kg/m²)	Various, dependant on thickness
Colour	Light sand/light buff (determined by BRE Global)
Finish	Exterior
Flame retardant treatment added, or organic content limited during production (yes/no)	No
European product standard, if applicable	BS EN 998-1[2]
Substrate and ventilation conditions	
Generic type of substrate	None
ventilation condition	
Type of air gap	None
Measured sample data, measured by BRE Global, determined by BRE Global at 23 °C ± 2 °C and 50% ± 5% RH (Based on BS EN ISO 1182 test specimens)	
Mean sample height (mm)	49.27 (range 48.16 to 49.87)
Mean sample mass per unit area (kg/m²)	81.89 (range 79.87 to 83.91)
Mean sample density (kg/m³)	1662.2 (range 1643.1 to 1693.4)
Test information	
Face to be tested	Not applicable, homogeneous
Orientation aspects	Not applicable
Test sponsor's sampling identification	Note 1
BRE Global sample number	E14386 and E14390
Additional information	None

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

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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	Clayworks Limited	P124110-1000 Issue 1	EN ISO 1182[3]
BRE Global	Clayworks Limited	P124110-1001 Issue 1	EN ISO 1716[4]

3.2 Results

Test method & test number	Parameter	No. test runs	Results	
			Continuous parameter - mean (m)	Compliance with parameters Criterion / Compliance status, A1
BS EN ISO 1182 P124110-1000 Tested: 07/09/2022, 08/09/2022 & 09/09/2022 E14386	ΔT	5	0.94 °C	$\Delta T \leq 30$ °C / Compliant
	Δm		4.0 %	$\Delta m \leq 50$ % / Compliant
	t_f		0 s	$t_f = 0$ / Compliant
BS EN ISO 1716 P124110-1001 Tested: 16/09/2022 E14390	Q_{PCS}	3	0.10 MJ/kg	$Q_{PCS} \leq 2.0$ MJ/kg / Compliant

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4 Classification and field of application

4.1 Reference of classification

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

4.2 Classification

The product, 'Clayworks Exterior Finishes', in relation to reaction to fire behaviour is classified:

A1

The additional classification in relation to smoke production is:

-

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

-

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	
A1	-	s	-	,	d	-

i.e., A1

Reaction to fire classification: A1

4.3 Field of application

This classification is valid for:

i) Lime render.

And the following product and mounting and fixing parameters:

Parameter	Field of application
Colour	Light sand/light buff. As tested, no variation in colour allowed.
Finish	As tested. No variation in finish allowed.
Composition	As tested. No variation in composition allowed.
Facing	None. No variation allowed.
Overall thickness	Valid for all thicknesses
Density	Nominal 1650 (1662.2 kg/m³ ± 31.2 kg/m³ measured by BRE). No variation in density allowed.

5 Limitations

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

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products.

The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures, or stages (e.g., no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence, the manufacturer has concluded that system 3 attestation is appropriate.

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.

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurement of reaction to fire, it is not possible to provide a stated degree of accuracy of the results.

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6 References

1. BS EN 13501-1: 2018. Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests. BSI, London. 2018.
2. BS EN 998-1: 2016. Specification for mortar for masonry. Part 1: Rendering and plastering mortar. BSI, London. 2016.
3. BS EN ISO 1182: 2020. Reaction to fire tests for products - Non-combustibility test. BSI, London. 2020.
4. BS EN ISO 1716: 2018. Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value). BSI, London. 2018.

Appendix A Product description

Table A.1: Test sponsor's product description

Test sponsor Clayworks Ltd., Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Cornwall TR127AZ	
Parameter	**Details**
Trade name of product tested	Clayworks Exterior Finishes
General description of product tested	Exterior Lime Render
Name and address of manufacturer of product	Clayworks Ltd, Unit 5 Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall TR12 7AZ
Place of manufacture	Cornwall, UK
Product reference/number	Exterior Finish
Overall thickness	8 mm
Overall density	1650 kg/m³
Overall mass per unit area	15 kg/m²
Generic type of product	Lime Render
Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details	None
Harmonised EN product standard, and AVCP System No. if applicable	Note 1
Product breakdown	
Core material - Generic type	Clay Plaster
- Product reference/name	Rustic
- Manufacturer	Clayworks Ltd.
- Batch No.	Note 1
- Thickness	8 mm
- Mass per unit area/ density	15 kg/m²
- Colour reference	Note 1
- Trade name flame retardant	Note 1
- Generic type flame retardant	Norte 1
- Amount flame retardant	Note 1
Sampling Identification Reference (if applicable)	Note 1
Additional information	Note 1

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

bre

Figure A.1: Test sample as received (BS EN ISO 1182)

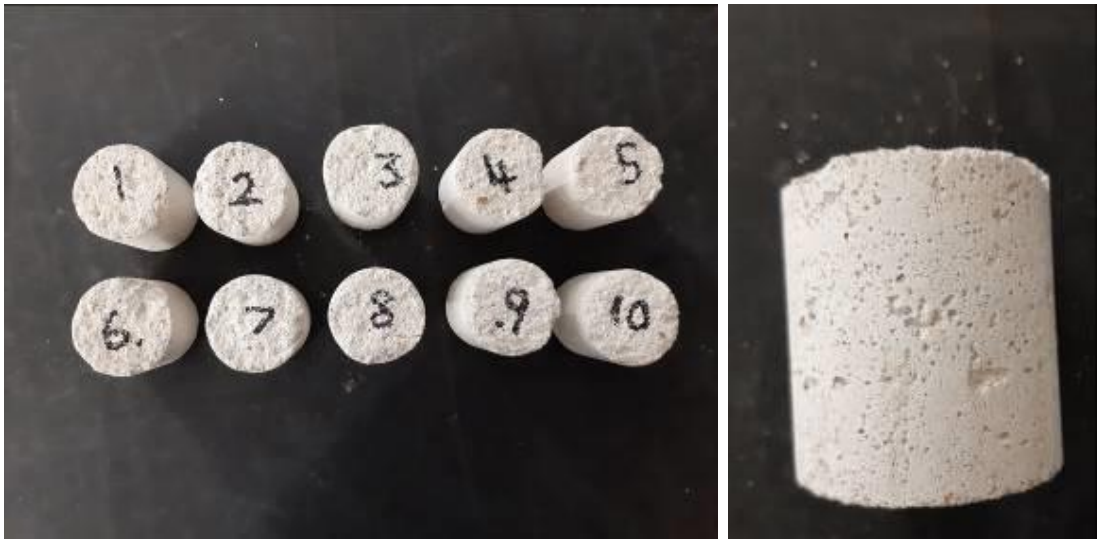
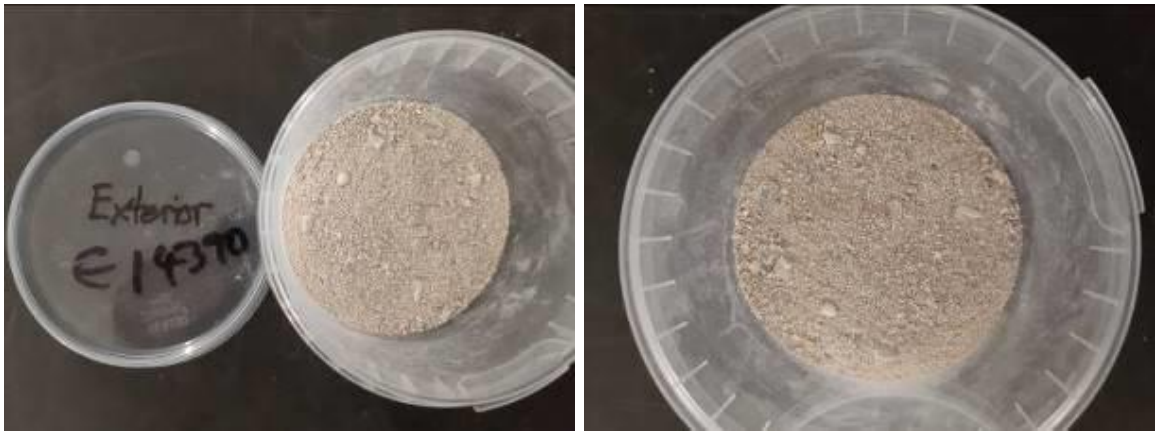


Figure A.2: Test sample as received (BS EN ISO 1716)



Report Ends

www.bre.co.uk

BRE Global Classification Report

Classification of reaction to fire performance in accordance with BS EN 13501-1: 2018 on Clayworks Tadelakt

Prepared for: Clayworks Limited
Date: 07 November 2022
Report Number: P123078-1002 Issue 1

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BRE Global Ltd
Watford, Herts
WD25 9XX

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E enquiries@bre.co.uk
www.bre.co.uk

Prepared for:

Clayworks Limited
Unit 5
Higher Bochym Rural Workshops
Cury Cross Lanes
Helston
Cornwall
TR12 7AZ
United Kingdom

Prepared by

Name C A Rock

Position Principal Consultant

Signature 

Authorised by

Name J Hunter

Position Section Leader, Reaction to Fire

Date 07 November 2022

Signature 

bre

Table of Contents

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bre

1 Introduction

This classification report defines the classification assigned to 'Clayworks Tadelakt' in accordance with the procedures given in BS EN 13501-1: 2018[1].

BRE Global

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

Sponsor:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Prepared for:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Manufacturer:	Clayworks Limited, Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall, TR12 7AZ, United Kingdom
Place of Manufacture:	Cornwall, United Kingdom
Prepared by:	BRE Global, Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX, UK
Notified Body No.:	0832
Product name:	Clayworks Tadelakt
Classification report No.:	P123078-1002
Issue number:	One
Date of issue:	16 September 2022

This classification report consists of 11 pages and may only be used or reproduced in its entirety.

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2 Details of classified product

2.1 General

The product, 'Clayworks Tadelakt', is defined by the test sponsor as a lime-based rendering and plastering mortar in accordance with BS EN 998-1[2].

2.2 Product description

The product, 'Clayworks Tadelakt', 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 sampling process and therefore cannot comment upon the relationship between the samples supplied for test and the products supplied to market. The results apply to the samples as received.

2.2.2 Sample details

Unless otherwise stated all measurements are nominal.

Parameter	Details
Test sponsor	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Prepared for	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Manufacturer of sample	Clayworks Limited Unit 5 Higher Bochym Rural Workshops Cury Cross Lanes Helston Cornwall TR12 7AZ United Kingdom
Place of manufacture	Cornwall, UK
Trade name	Clayworks Tadelakt
Sample reference	Clayworks Tadelakt

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Parameter	Details
Sample description (as provided by test sponsor/manufacturer)	Interior Water Resistant Plaster. The test sponsor's product description is shown in Appendix A of this report.
Description of sample (as received)	A white granular material ground to a fine powder by a representative of BRE Global and a set of white cylinders meeting the dimension requirements specified in BS EN ISO 1182[2] . The test samples as received are shown in Appendix A of this report.
Test sponsor's product data	
Generic type of product	Lime render
Nominal thickness of product (mm)	Various
Nominal density of product (kg/m³)	1600
Nominal mass per unit area of product (kg/m²)	Various, dependant on thickness
Colour	White (determined by BRE Global)
Finish	Smooth
Flame retardant treatment added, or organic content limited during production (yes/no)	No
European product standard, if applicable	BS EN 998-1[2]
Substrate and ventilation conditions	
Generic type of substrate	None
ventilation condition	
Type of air gap	None
Measured sample data, measured by BRE Global, determined by BRE Global at 23 °C ± 2 °C and 50% ± 5% RH (Based on BS EN ISO 1182 test specimens)	
Mean sample height (mm)	48.73 (range 48.05 to 49.57)
Mean sample mass per unit area (kg/m²)	81.47 (range 80.21 to 82.41)
Mean sample density (kg/m³)	1671.9 (range 1649.1 to 1696.4)
Test information	
Face to be tested	Not applicable, homogeneous
Orientation aspects	Not applicable
Test sponsor's sampling identification	Note 1
BRE Global sample number	E14385 and E14389
Additional information	None

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

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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	Clayworks Limited	P123078-1000 Issue 1	EN ISO 1182[3]
BRE Global	Clayworks Limited	P123078-1001 Issue 1	EN ISO 1716[4]

3.2 Results

Test method & test number	Parameter	No. test runs	Results	
			Continuous parameter - mean (m)	Compliance with parameters Criterion / Compliance status, A1
BS EN ISO 1182 P123078-1000 Tested: 02/09/2022, 05/09/2022 & 06/09/2022 E14385	ΔT	5	0.38 °C	$\Delta T \leq 30$ °C / Compliant
	Δm		8.7 %	$\Delta m \leq 50$ % / Compliant
	t_f		0 s	$t_f = 0$ / Compliant
BS EN ISO 1716 P123078-1001 Tested: 02/09/2022 & 16/09/2022 E14389	Q_{PCS}	3	0.02 MJ/kg	$Q_{PCS} \leq 2.0$ MJ/kg / Compliant

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4 Classification and field of application

4.1 Reference of classification

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

4.2 Classification

The product, 'Clayworks Tadelakt', in relation to reaction to fire behaviour is classified:

A1

The additional classification in relation to smoke production is:

-

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

-

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	
A1	-	s	-	,	d	-

i.e., A1

Reaction to fire classification: A1

4.3 Field of application

This classification is valid for:

i) Lime-based render

And the following product and mounting and fixing parameters:

Parameter	Field of application
Colour	White. As tested, no variation in colour allowed.
Finish	As tested. No variation in finish allowed.
Composition	As tested. No variation in composition allowed.
Facing	None. No variation allowed.
Overall thickness	Valid for all thicknesses
Density	Nominal 1600 (1671.9 kg/m³ ± 24.5 kg/m³ measured by BRE). No variation in density allowed.

5 Limitations

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

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 of AVCP and CE marking under the Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products.

The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures, or stages (e.g., no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence, the manufacturer has concluded that system 3 attestation is appropriate.

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.

Because of the nature of reaction to fire testing and the consequent difficulty in quantifying the uncertainty of measurement of reaction to fire, it is not possible to provide a stated degree of accuracy of the results.

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6 References

1. BS EN 13501-1: 2018. Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests. BSI, London. 2018.
2. BS EN 998-1: 2016. Specification for mortar for masonry. Part 1: Rendering and plastering mortar. BSI, London. 2016.
3. BS EN ISO 1182: 2020. Reaction to fire tests for products - Non-combustibility test. BSI, London. 2020.
4. BS EN ISO 1716: 2018. Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value). BSI, London. 2018.

Appendix A Product description

Table A.1: Test sponsor's product description

Test sponsor Clayworks Ltd., Unit 5, Higher Bochym Rural Workshops, Cury Cross Lanes, Cornwall TR127AZ	
Parameter	**Details**
Trade name of product tested	Clayworks Tadelakt
General description of product tested	Interior Water Resistant Plaster
Name and address of manufacturer of product	Clayworks Ltd, Unit 5 Higher Bochym Rural Workshops, Cury Cross Lanes, Helston, Cornwall TR12 7AZ
Place of manufacture	Cornwall, UK
Product reference/number	Clayworks Tadelakt
Overall thickness	2 mm
Overall density	1600 kg/m³
Overall mass per unit area	3 kg/m²
Generic type of product	Lime render
Flame retardant treatment added, or organic content limited during production (yes/no), if yes give details	None
Harmonised EN product standard, and AVCP System No. if applicable	Note 1
Product breakdown	
Core material - Generic type	Interior Water Resistant Plaster
- Product reference/name	Clayworks Tadelakt
- Manufacturer	Clayworks Ltd
- Batch No.	Note 1
- Thickness	2 mm
- Mass per unit area/ density	3 kg/m²
- Colour reference	Note 1
- Trade name flame retardant	Note 1
- Generic type flame retardant	Note 1
- Amount flame retardant	Note 1
Sampling Identification Reference (if applicable)	Note 1
Additional information	Note 1

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

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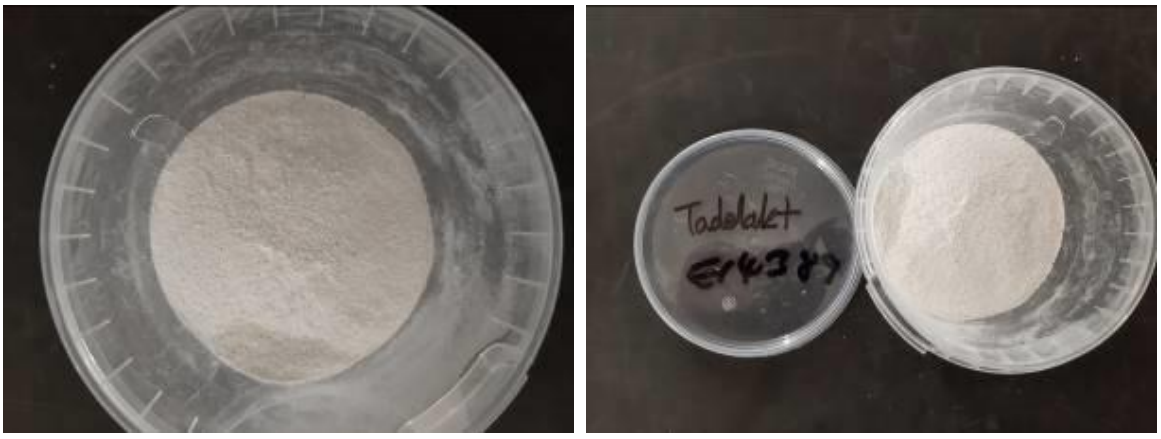
Figure A.1: Test sample as received (BS EN ISO 1182)

Figure A.2: Test sample as received (BS EN ISO 1716)



Report Ends

SGS

Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Z**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59325-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

Client's Identification:

Style: Smooth. Density: 1550 kg/m³. Thickness: 2mm. Product End Use: Interior Finish Walls & Ceilings.

Test Category: Tunnel Test Specifier: BLDG(IBC): ASTM E 84: LE 2024 V 08/24 BG PC: ME

TEST PERFORMED: ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

REFERENCE: Comparable to: UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials

APPROXIMATE THICKNESS OF SPECIMEN (as measured by SGS North America): 0.554"

SPECIMEN WEIGHT (to include substrate when applicable):

Prior to Conditioning:	135.3 lbs.
Stabilized Weight (taken twice within 24 hours):	135.3 lbs.

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PRODUCT CATEGORY:

☐ Textile Type Product
☐ Vinyl Type Product
☒ Other than Textile Type or Vinyl Type Product: Natural Clay Plaster

BRIEF DESCRIPTION OF TEST: This test method is used to determine the relative burning behavior of a material under defined test conditions. The test is performed in a 25 ft. long tunnel/duct-like apparatus and is often referred to as the "tunnel test". The test contemplates a calibration where Red Oak burns to the 24 ft. mark in 5.5 minutes ± 15 seconds. During the actual test, a 24 ft. long x 23" wide specimen rests horizontally in a ceiling configuration inside the test chamber facing downward and toward two upward oriented burners. A furnace lid that rests in a water trough seals the chamber tight. A cement board placed on the backside of each specimen assembly protects the furnace lid during the test. The near face of the specimen is subjected to a 4.5 ft. flame insult of approximately 88 kW for ten minutes. The time and distance of the spread of flame along the length of the specimen and the smoke developed as read by the photometric system are all recorded. The Flame Spread and Smoke Developed are reported as an Index.

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Z**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59325-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

SPECIMEN MOUNTING:

☒ Self-supporting: The test specimen was rigid enough to be self-supporting when placed into test position. No additional support was required.

☐ Adhered to IRC: The test specimen was bonded to ¼" Inorganic Reinforced Cement (IRC) boards.

☐ Adhered to Gypsum: The test specimen was adhered to 5/8" thick Type X Gypsum board.

☐ Unadhered: The specimen was not adhered to any substrate. Instead, it was laid over a 2" hexagonal wire mesh screen and ¼" rods.

☐ Other: _____

DISCUSSION: 3.2.1.1: Self-Supporting specimens, after being mounted on the ledges of the test furnace, are structurally capable of supporting their own weight prior to the test and during the test without the use of additional supports. Examples of self-supporting specimen behavior include the ability to do the following without the use of additional supporting elements:

(1) Prior to and during the test, the specimen stays in its position to such an extent that it does not interfere with the effect of the burner flame.
(2) During the test, the specimen does not interrupt the progression of the flame front along the specimen. A specimen may still be considered self-supporting if it sags during the test or if debris falls from the specimen as long as this behavior does not interfere with the progress of the flame front.

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SPECIMEN LENGTH: The 24 ft. length was comprised of:

☐ Continuous unbroken 24 ft. length
☒ Sections:
- ☐ Three 8 ft. sections butted end to end
- ☐ Three 8 ft. sections positively joined.
- ☐ Four 5 ft. sections and one 4 ft. section butted end to end.
- ☒ Other: Twelve 2 ft. sections butted end to end

ADHESIVE (applied by SGS North America):
☒ No
☐ Yes - (specify):

SGS

Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Z**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59325-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

OBSERVATIONS:

☒ No unusual observations
☐ Burning Drips to Floor further qualified as: ☐ Minor; ☐ Moderate; ☐ Major
☐ Delamination
☐ Sagging
☐ Shrinkage
☐ Fallout (specimen displacement from ceiling mount)
☐ Other: _____

REMARKS:

☐ None
☒ Other: DNI=Did not ignite

RESULTS:

Flame Spread Index: 0
Smoke Developed: 0

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ROUNDING (Per ASTM E84 Reporting Requirements):

Flame Spread Index value has been rounded to the nearest multiple of 5.
Smoke Developed value has been rounded to:

Raw Data	Rounded
Less than 200	Nearest multiple of 5
200 or more	Nearest multiple of 50

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Z**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59325-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

CONCLUSION: Based on the reported Results and cited Code Classification System, the item tested is assigned a:

- ☒ Class I or A rating
- ☐ Class II or B rating
- ☐ Class III or C rating
- ☐ Fails to achieve a minimum classification thereby rendering the product unsuitable in terms of code requirement
- ☐ Based on product performance*, ASTM E84 is not a suitable test method for the material.

* Severe melt, drip, delamination, or other behavior that destroys the continuity of the flame front such that a valid flame spread is unobtainable (See "Remarks")

DATA SUMMARY:

Time to Ignition (minutes:seconds):	DNI
Maximum Flame Spread "Distance" (feet):	0
Maximum Flame Spread "Time" (seconds):	0

CODE CLASSIFICATION SYSTEM (Please see "ASTM E84 Limitations"):

Flame Spread Index		Smoke Developed
Class I or A:	0 - 25	450 or less
Class II or B:	26 - 75	450 or less
Class III or C:	76 - 200	450 or less

BUILDING CODE CITATION FOR THE CLASSIFICATION SCHEME:

(1) 2024 edition, NFPA 101 Life Safety Code
(2) 2024 edition, NFPA 5000 Building Construction & Safety Code
(3) 2024 edition, International Building Code

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Z**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59325-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

LIMITATIONS OF THE ASTM E84 CLASSIFICATION SCHEME: Most building codes will accept the ASTM E84 classifications when the interior finish product is used in a sprinklered area. Certain local authorities such as NYC have more stringent requirements, i.e. Smoke Developed ranges from a maximum 25 to 100.

If the interior finish product is a textile or vinyl wall covering used in a non-sprinklered area, the NFPA 265 room corner fire test applies.

Certain products which give off excessive heat such as but not limited to cellular plastics, cellular foam (either with or without coverings as applicable), polypropylene, and high-density polyethylene should be tested by NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth. In SGS North America's opinion, the codes require NFPA 286 for such products, even in sprinklered areas.

CERTIFICATION: I certify that the reported results were obtained after testing specimens in accordance with the procedures and equipment specified above.

DocuSigned by:
Jillian Guillem
2908174CF629427...

5/16/2025

AUTHORIZED SIGNATURE
SGS NORTH AMERICA
/jb /gb

Test Engineer: Jillian Guillem

DS
JG

Enclosure: Graphs

96 Allen Boulevard Suite D, Farmingdale, NY 11735 USA • Phone: (631) 293-8944 • Email: govmark.test.reports@sgs.com

Program: Steiner Tunnel (Version 1.0.3.0)

Test Method	:	ASTM E84
Report #	:	3-59325-0-Z
Test Date	:	5/15/2025
Client	:	Clayworks LTD
Operator	:	Jillian Guillem
Details of Preparation	:	The test specimen was rigid enough to be self-supporting when placed into test position. No additional support was required. The 24 ft. specimen was comprised of twelve 2ft. sections butted end to end.
Observations	:	Material did not ignite.

Results

Area Under Flame Curve (ft min)	:	0.00
Raw Flame Spread Index	:	0.00
Ignition Time (mm:ss)	:	00:00
Area Under Smoke Curve (%A min)	:	0.25
Raw Smoke Developed Index	:	0.36
Total Gas Flow (ft^3)	:	56.4
Maximum Flame Front Achieved (ft)	:	0.0 @ 0s
Flame Spread Index	:	**0**
Smoke Developed Index	:	**0**
Material Classification	:	**A**

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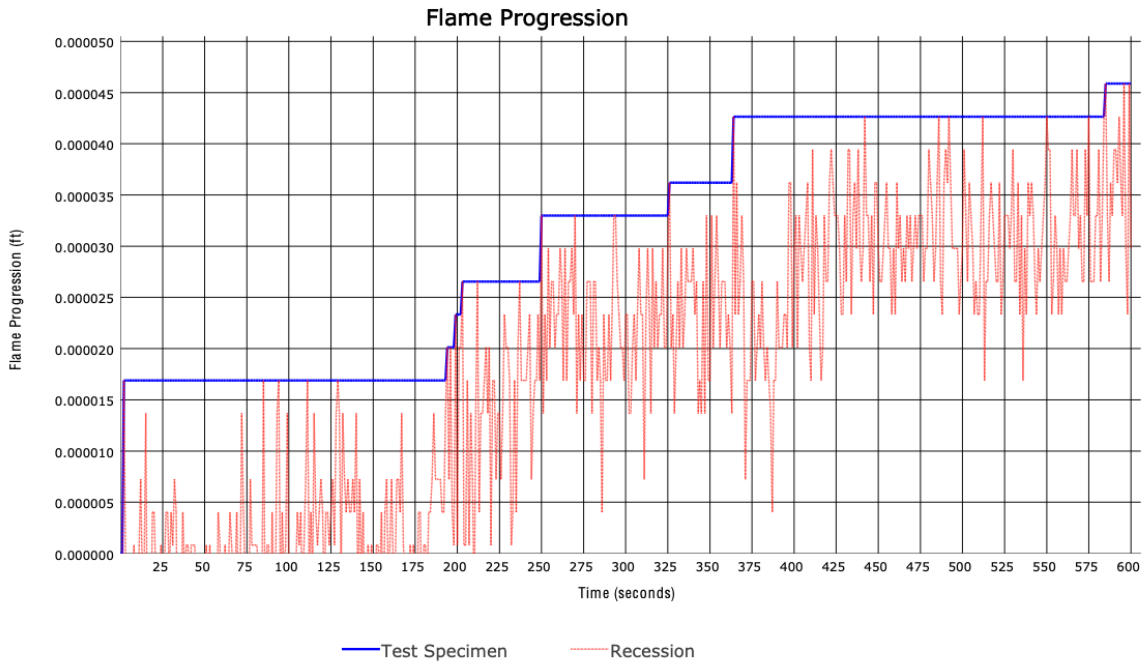
CERTIFICATION : I certify that the above results were obtained after testing the specimens in accordance with the procedures and equipment specified by ASTM E84

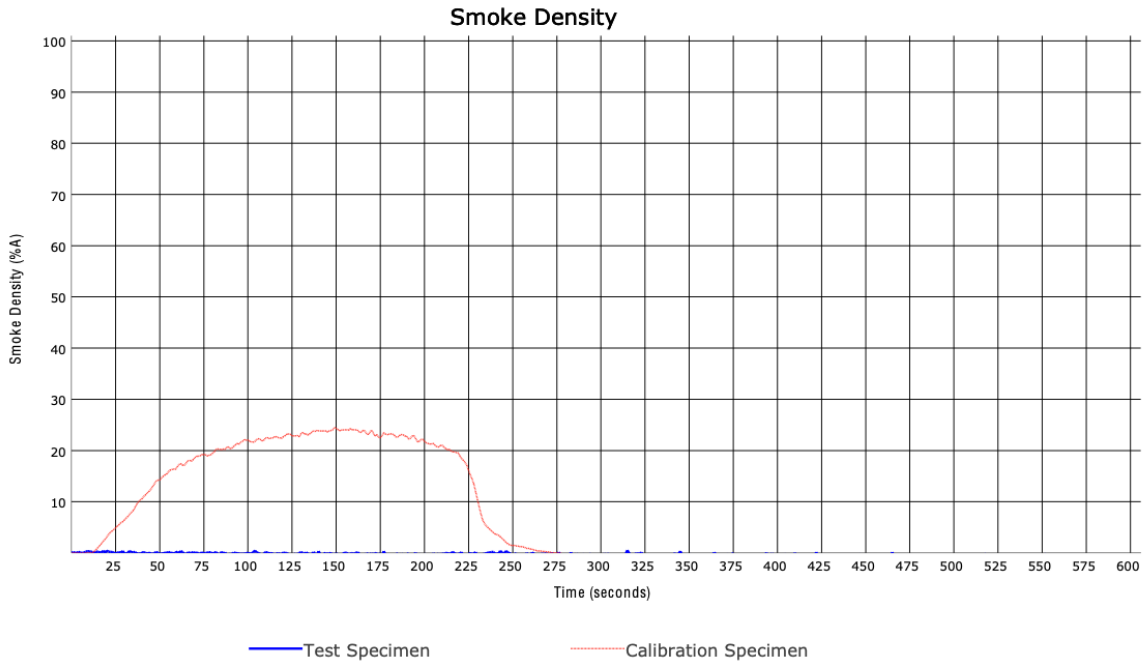
Jillian Guillem

AUTHORIZED SIGNATURE

Program: Steiner Tunnel (Version 1.0.3.0)

Test Method : ASTM E84
Test Report # : 3-59325-0-Z





SGS

Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Y**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59324-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

Client's Identification:

Style: Rustic. Density: 2120 kg/m³. Thickness: 8mm. Product End Use: Interior Finish Walls & Ceilings.

Test Category: Tunnel Test Specifier: BLDG(IBC): ASTM E 84: LE 2024 V 08/24 BG PC: ME

TEST PERFORMED: ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

REFERENCE: Comparable to: UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials

APPROXIMATE THICKNESS OF SPECIMEN (as measured by SGS North America): 0.847"

SPECIMEN WEIGHT (to include substrate when applicable):

Prior to Conditioning:	244.5 lbs.
Stabilized Weight (taken twice within 24 hours):	244.5 lbs.

PRODUCT CATEGORY:

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☐ Textile Type Product
☐ Vinyl Type Product
☒ Other than Textile Type or Vinyl Type Product: Natural Clay Plaster

BRIEF DESCRIPTION OF TEST: This test method is used to determine the relative burning behavior of a material under defined test conditions. The test is performed in a 25 ft. long tunnel/duct-like apparatus and is often referred to as the "tunnel test". The test contemplates a calibration where Red Oak burns to the 24 ft. mark in 5.5 minutes ± 15 seconds. During the actual test, a 24 ft. long x 23" wide specimen rests horizontally in a ceiling configuration inside the test chamber facing downward and toward two upward oriented burners. A furnace lid that rests in a water trough seals the chamber tight. A cement board placed on the backside of each specimen assembly protects the furnace lid during the test. The near face of the specimen is subjected to a 4.5 ft. flame insult of approximately 88 kW for ten minutes. The time and distance of the spread of flame along the length of the specimen and the smoke developed as read by the photometric system are all recorded. The Flame Spread and Smoke Developed are reported as an Index.

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Y**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59324-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

SPECIMEN MOUNTING:

☒ Self-supporting: The test specimen was rigid enough to be self-supporting when placed into test position. No additional support was required.

☐ Adhered to IRC: The test specimen was bonded to ¼" Inorganic Reinforced Cement (IRC) boards.

☐ Adhered to Gypsum: The test specimen was adhered to 5/8" thick Type X Gypsum board.

☐ Unadhered: The specimen was not adhered to any substrate. Instead, it was laid over a 2" hexagonal wire mesh screen and ¼" rods.

☐ Other: _____

DISCUSSION: 3.2.1.1: Self-Supporting specimens, after being mounted on the ledges of the test furnace, are structurally capable of supporting their own weight prior to the test and during the test without the use of additional supports. Examples of self-supporting specimen behavior include the ability to do the following without the use of additional supporting elements:

(1) Prior to and during the test, the specimen stays in its position to such an extent that it does not interfere with the effect of the burner flame.
(2) During the test, the specimen does not interrupt the progression of the flame front along the specimen. A specimen may still be considered self-supporting if it sags during the test or if debris falls from the specimen as long as this behavior does not interfere with the progress of the flame front.

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SPECIMEN LENGTH: The 24 ft. length was comprised of:

☐ Continuous unbroken 24 ft. length
☒ Sections:
- ☐ Three 8 ft. sections butted end to end
- ☐ Three 8 ft. sections positively joined.
- ☐ Four 5 ft. sections and one 4 ft. section butted end to end.
- ☒ Other: Twelve 2 ft. sections butted end to end

ADHESIVE (applied by SGS North America): ☒ No ☐ Yes - (specify):

SGS

Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Y**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59324-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

OBSERVATIONS:

- ☒ No unusual observations
- ☐ Burning Drips to Floor further qualified as: ☐ Minor; ☐ Moderate; ☐ Major.
- ☐ Delamination
- ☐ Sagging
- ☐ Shrinkage
- ☐ Fallout (specimen displacement from ceiling mount)
- ☐ Other: _____

REMARKS:

- ☐ None
- ☒ Other: DNI=Did not ignite

RESULTS:

Flame Spread Index: 0
Smoke Developed: 0

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ROUNDING (Per ASTM E84 Reporting Requirements):

Flame Spread Index value has been rounded to the nearest multiple of 5.
Smoke Developed value has been rounded to:

Raw Data	Rounded
Less than 200	Nearest multiple of 5
200 or more	Nearest multiple of 50

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Y**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59324-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

CONCLUSION: Based on the reported Results and cited Code Classification System, the item tested is assigned a:

- ☒ Class I or A rating
- ☐ Class II or B rating
- ☐ Class III or C rating
- ☐ Fails to achieve a minimum classification thereby rendering the product unsuitable in terms of code requirement.
- ☐ Based on product performance*, ASTM E84 is not a suitable test method for the material.

* Severe melt, drip, delamination, or other behavior that destroys the continuity of the flame front such that a valid flame spread is unobtainable (See "Remarks")

DATA SUMMARY:

Time to Ignition (minutes:seconds):	DNI
Maximum Flame Spread "Distance" (feet):	0
Maximum Flame Spread "Time" (seconds):	0

CODE CLASSIFICATION SYSTEM (Please see "ASTM E84 Limitations"):

Flame Spread Index		Smoke Developed
Class I or A:	0 - 25	450 or less
Class II or B:	26 - 75	450 or less
Class III or C:	76 - 200	450 or less

BUILDING CODE CITATION FOR THE CLASSIFICATION SCHEME:

(1) 2024 edition, NFPA 101 Life Safety Code
(2) 2024 edition, NFPA 5000 Building Construction & Safety Code
(3) 2024 edition, International Building Code

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**Y**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59324-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

LIMITATIONS OF THE ASTM E84 CLASSIFICATION SCHEME: Most building codes will accept the ASTM E84 classifications when the interior finish product is used in a sprinklered area. Certain local authorities such as NYC have more stringent requirements, i.e. Smoke Developed ranges from a maximum 25 to 100.

If the interior finish product is a textile or vinyl wall covering used in a non-sprinklered area, the NFPA 265 room corner fire test applies.

Certain products which give off excessive heat such as but not limited to cellular plastics, cellular foam (either with or without coverings as applicable), polypropylene, and high-density polyethylene should be tested by NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth. In SGS North America's opinion, the codes require NFPA 286 for such products, even in sprinklered areas.

CERTIFICATION: I certify that the reported results were obtained after testing specimens in accordance with the procedures and equipment specified above.

DocuSigned by:
Jillian Guillem
2908174CF629427...

5/16/2025

AUTHORIZED SIGNATURE
SGS NORTH AMERICA
/jb /gb

Test Engineer: Jillian Guillem

DS
JG

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Enclosure: Graphs

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Program: Steiner Tunnel (Version 1.0.3.0)

Test Method	:	ASTM E84
Report #	:	3-59324-0-Y
Test Date	:	5/15/2025
Client	:	Clayworks LTD
Operator	:	Jillian Guillem
Details of Preparation	:	The test specimen was rigid enough to be self-supporting when placed into test position. No additional support was required. The 24ft. specimen was comprised of twelve 2ft. sections butted end to end.
Observations	:	Material did not ignite.

Results

Area Under Flame Curve (ft min)	:	0.00
Raw Flame Spread Index	:	0.00
Ignition Time (mm:ss)	:	00:00
Area Under Smoke Curve (%A min)	:	0.17
Raw Smoke Developed Index	:	0.25
Total Gas Flow (ft^3)	:	56.4
Maximum Flame Front Achieved (ft)	:	0.0 @ 0s
Flame Spread Index	:	**0**
Smoke Developed Index	:	**0**
Material Classification	:	**A**

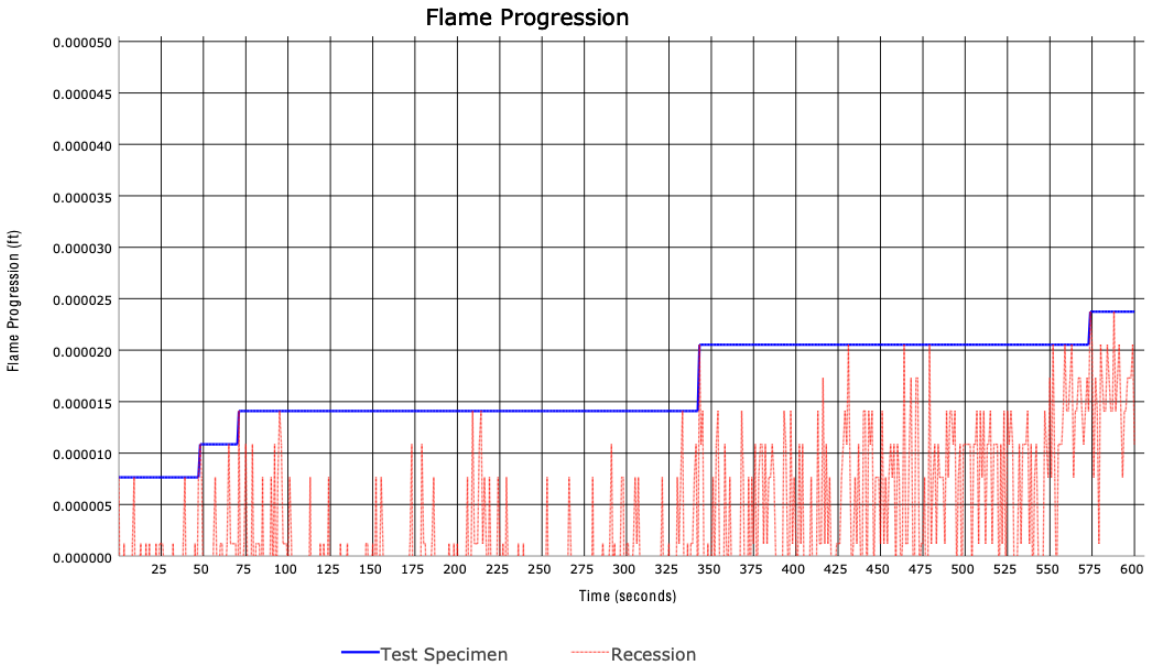
CERTIFICATION : I certify that the above results were obtained after testing the specimens in accordance with the procedures and equipment specified by ASTM E84

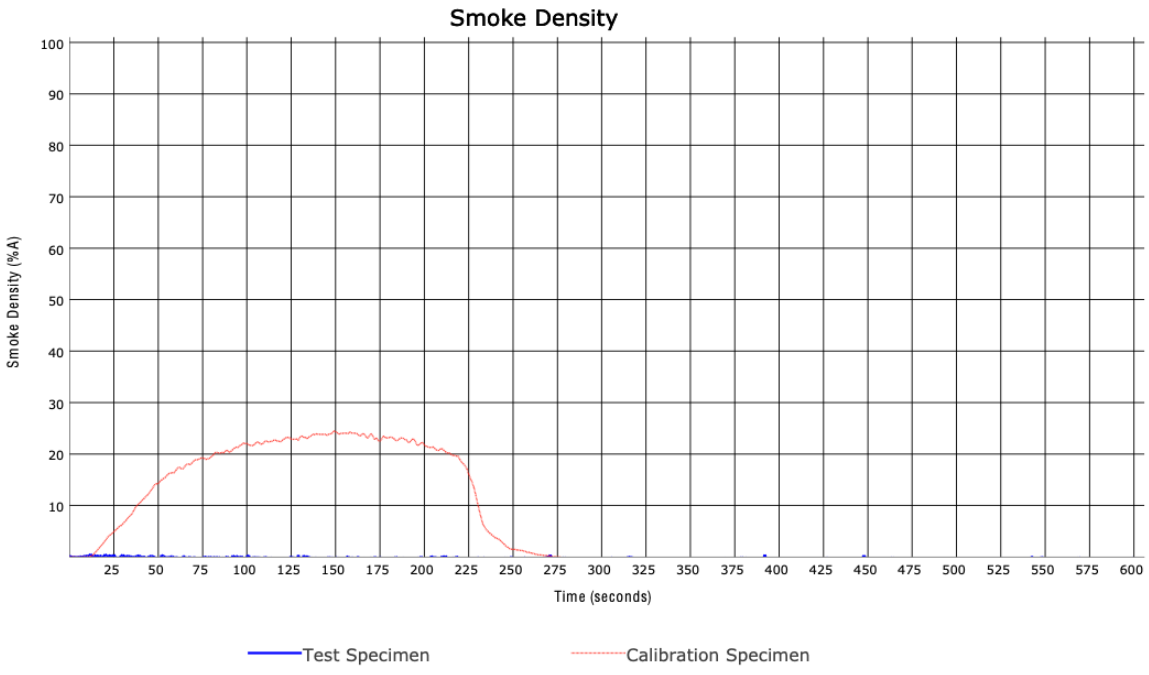
Jillian Guillem

AUTHORIZED SIGNATURE

Program: Steiner Tunnel (Version 1.0.3.0)

Test Method : ASTM E84
Test Report # : 3-59324-0-Y





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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**X**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59323-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

Client's Identification:

Style: Smooth. Thickness: 5mm. Product End Use: Interior Render.

Test Category: Tunnel Test Specifier: BLDG(IBC): ASTM E 84: LE 2024 V 08/24 BG PC: ME

TEST PERFORMED: ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

REFERENCE: Comparable to: UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials

APPROXIMATE THICKNESS OF SPECIMEN (as measured by SGS North America): 0.592"

SPECIMEN WEIGHT (to include substrate when applicable):

Prior to Conditioning:	156.5 lbs.
Stabilized Weight (taken twice within 24 hours):	156.5 lbs.

PRODUCT CATEGORY:

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☐ Textile Type Product
☐ Vinyl Type Product
☒ Other than Textile Type or Vinyl Type Product: Tadelakt

BRIEF DESCRIPTION OF TEST: This test method is used to determine the relative burning behavior of a material under defined test conditions. The test is performed in a 25 ft. long tunnel/duct-like apparatus and is often referred to as the "tunnel test". The test contemplates a calibration where Red Oak burns to the 24 ft. mark in 5.5 minutes ± 15 seconds. During the actual test, a 24 ft. long x 23" wide specimen rests horizontally in a ceiling configuration inside the test chamber facing downward and toward two upward oriented burners. A furnace lid that rests in a water trough seals the chamber tight. A cement board placed on the backside of each specimen assembly protects the furnace lid during the test. The near face of the specimen is subjected to a 4.5 ft. flame insult of approximately 88 kW for ten minutes. The time and distance of the spread of flame along the length of the specimen and the smoke developed as read by the photometric system are all recorded. The Flame Spread and Smoke Developed are reported as an Index.

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**X**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59323-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

SPECIMEN MOUNTING:

☒ Self-supporting: The test specimen was rigid enough to be self-supporting when placed into test position. No additional support was required.

☐ Adhered to IRC: The test specimen was bonded to ¼" Inorganic Reinforced Cement (IRC) boards.

☐ Adhered to Gypsum: The test specimen was adhered to 5/8" thick Type X Gypsum board.

☐ Unadhered: The specimen was not adhered to any substrate. Instead, it was laid over a 2" hexagonal wire mesh screen and ¼" rods.

☐ Other: _____

DISCUSSION: 3.2.1.1: Self-Supporting specimens, after being mounted on the ledges of the test furnace, are structurally capable of supporting their own weight prior to the test and during the test without the use of additional supports. Examples of self-supporting specimen behavior include the ability to do the following without the use of additional supporting elements:

(1) Prior to and during the test, the specimen stays in its position to such an extent that it does not interfere with the effect of the burner flame.
(2) During the test, the specimen does not interrupt the progression of the flame front along the specimen. A specimen may still be considered self-supporting if it sags during the test or if debris falls from the specimen as long as this behavior does not interfere with the progress of the flame front.

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SPECIMEN LENGTH: The 24 ft. length was comprised of:

☐ Continuous unbroken 24 ft. length
☒ Sections:
- ☐ Three 8 ft. sections butted end to end
- ☐ Three 8 ft. sections positively joined
- ☐ Four 5 ft. sections and one 4 ft. section butted end to end
- ☒ Other: Twelve 2 ft. sections butted end to end

ADHESIVE (applied by SGS North America): ☒ No ☐ Yes - (specify):

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**X**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59323-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

OBSERVATIONS:

- ☒ No unusual observations
- ☐ Burning Drips to Floor further qualified as: ☐ Minor; ☐ Moderate; ☐ Major.
- ☐ Delamination
- ☐ Sagging
- ☐ Shrinkage
- ☐ Fallout (specimen displacement from ceiling mount)
- ☐ Other: _____

REMARKS:

- ☐ None
- ☒ Other: DNI= Did not ignite

RESULTS:

Flame Spread Index: 0
Smoke Developed: 0

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ROUNDING (Per ASTM E84 Reporting Requirements):

Flame Spread Index value has been rounded to the nearest multiple of 5.
Smoke Developed value has been rounded to:

Raw Data	Rounded
Less than 200	Nearest multiple of 5
200 or more	Nearest multiple of 50

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**X**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59323-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

CONCLUSION: Based on the reported Results and cited Code Classification System, the item tested is assigned a:

☒ Class I or A rating
☐ Class II or B rating
☐ Class III or C rating
☐ Fails to achieve a minimum classification thereby rendering the product unsuitable in terms of code requirement.
☐ Based on product performance*, ASTM E84 is not a suitable test method for the material.

* Severe melt, drip, delamination, or other behavior that destroys the continuity of the flame front such that a valid flame spread is unobtainable (See "Remarks")

DATA SUMMARY:

Time to Ignition (minutes:seconds): DNI
Maximum Flame Spread "Distance" (feet): 0
Maximum Flame Spread "Time" (seconds): 0

CODE CLASSIFICATION SYSTEM (Please see "ASTM E84 Limitations"):

Flame Spread Index		Smoke Developed
Class I or A:	0 - 25	450 or less
Class II or B:	26 - 75	450 or less
Class III or C:	76 - 200	450 or less

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BUILDING CODE CITATION FOR THE CLASSIFICATION SCHEME:

(1) 2024 edition, NFPA 101 Life Safety Code
(2) 2024 edition, NFPA 5000 Building Construction & Safety Code
(3) 2024 edition, International Building Code

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Tested For:	**Marcie Russell**	**Phone:**	**01326341339**	**Received:**	**5/8/2025**
	Clayworks LTD	**Fax:**		**Completed:**	**5/15/2025**
	Clayworks Higher Bochym Workshops,	**Mobile:**		**Code:**	**X**
	Cury Cross Lanes, Helston,	**PO#:**	**PO-1209**	**Test Report:**	**3-59323-0**
	Cornwall,	**Email:**	**marcie@clay-works.com**		
	UK, TR127AZ				

Key Test: **ASTM E84 (Int Fin)** 785

LIMITATIONS OF THE ASTM E84 CLASSIFICATION SCHEME: Most building codes will accept the ASTM E84 classifications when the interior finish product is used in a sprinklered area. Certain local authorities such as NYC have more stringent requirements, i.e. Smoke Developed ranges from a maximum 25 to 100.

If the interior finish product is a textile or vinyl wall covering used in a non-sprinklered area, the NFPA 265 room corner fire test applies.

Certain products which give off excessive heat such as but not limited to cellular plastics, cellular foam (either with or without coverings as applicable), polypropylene, and high-density polyethylene should be tested by NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth. In SGS North America's opinion, the codes require NFPA 286 for such products, even in sprinklered areas.

CERTIFICATION: I certify that the reported results were obtained after testing specimens in accordance with the procedures and equipment specified above.

DocuSigned by:
Jillian Guillem
2908174CF629427...

5/16/2025

AUTHORIZED SIGNATURE
SGS NORTH AMERICA
/jb/jo

Test Engineer: Jillian Guillem

DS
JG

Enclosure: Graphs

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Program: Steiner Tunnel (Version 1.0.3.0)

Test Method	:	ASTM E84
Report #	:	3-59323-0-X
Test Date	:	5/15/2025
Client	:	Clayworks LTD
Operator	:	Jillian Guillem
Details of Preparation	:	The test specimen was rigid enough to be self-supporting when placed into test position. No additional support was required. The 24ft. specimen was comprised of twelve 2ft. sections butted end to end.
Observations	:	Material did not ignite

Results

Area Under Flame Curve (ft min)	:	0.00
Raw Flame Spread Index	:	0.00
Ignition Time (mm:ss)	:	00:00
Area Under Smoke Curve (%A min)	:	0.27
Raw Smoke Developed Index	:	0.39
Total Gas Flow (ft^3)	:	56.4
Maximum Flame Front Achieved (ft)	:	0.0 @ 0s
Flame Spread Index	:	**0**
Smoke Developed Index	:	**0**
Material Classification	:	**A**

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CERTIFICATION : I certify that the above results were obtained after testing the specimens in accordance with the procedures and equipment specified by ASTM E84

Jillian Guillem

AUTHORIZED SIGNATURE

Program: Steiner Tunnel (Version 1.0.3.0)

Test Method : ASTM E84
Test Report # : 3-59323-0-X