

Concrete Cloth™

Concrete Cloth (CC) meets the fire regulations and demands for many interior and exterior public localities. CC is fire-safe, does not contribute to the surface spread of flames, has a low level of smoke development and minimal hazardous gas emissions.

Euroclass System

Previously, depending on the type of locality, fire safety requirements varied from country to country. The Euroclass system is replacing these earlier national classification systems, which formed obstacles to trade. This new classification system for the reaction to fire properties of building construction products has been introduced in Europe by COMMISSION DECISION (2000/147/EC) of 8 February 2000 implementing Council Directive 89/106/EEC (Ref. OJ L 50, 23.2.2000). It consists of two sub systems, one for construction products excluding floorings, eg. wall and ceiling surface linings and another similar system for floorings. A class marked with capital letter from A to F indicates product behaviour in different stages of fire development of which classes A1 and A2 are non combustible products (see table below). Additional information about smoke and flaming droplets release is marked in subscript e.g. A2 s1d0. The Euroclass system additionally defines the test methods according to which construction products shall be categorised.

The system is divided into various classes in accordance to the following:

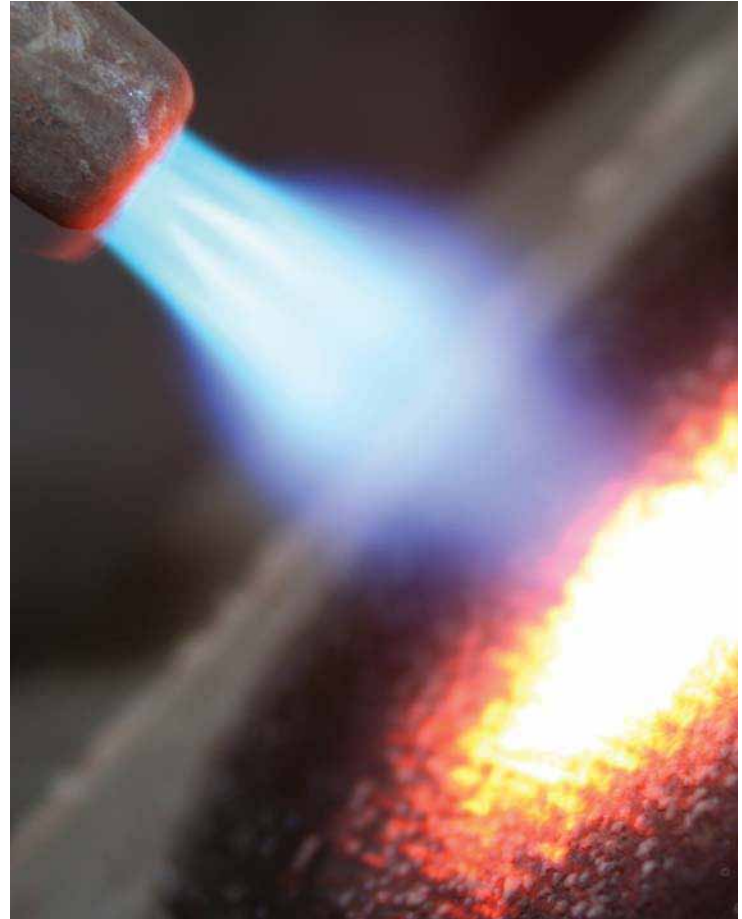
A1	Non-flammable materials	No contribution to fire
A2	Non-flammable material	No noticeable contribution to fire
B	Flammable	Little or no contribution to fire
C	Flammable	Limited contribution to fire
D	Flammable	Contributes to fire
E	Flammable	Major contribution to fire
F	Flammable	Not within classes A1-E

Concrete Cloth has achieved the classification:

B-s1, d0

This classification is the highest possible for flammable materials and can be broken down as below.

B	<i>The panels contribute little or insignificantly to fire.</i>
s1	<i>The panels contribute little or insignificantly to the development of smoke.</i>
d0	<i>The panels do not create flaming particles or droplets when subjected to fire.</i>





CONFIDENTIAL

Report: Chilt/B09034/06

Classification of reaction to fire
performance in accordance with
BS EN 13501-1:2007+A1:2009

Product: Concrete Cloth

Issue date: July 2010

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www.chilternfire.co.uk

www.chilterndynamics.co.uk

www.qmark.info

Prepared for:

Concrete Canvas Ltd
Unit 3, Block A22
Severn Road
Trefforest Industrial Estate
Pontypridd
CF37 5SP

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**CLASSIFICATION OF REACTION TO FIRE
PERFORMANCE IN ACCORDANCE WITH
BS EN 13501-1:2007+A1:2009**

Sponsor: Concrete Canvas Ltd
Unit 3, Block A22
Severn Road
Trefforest Industrial Estate
Pontypridd
CF37 5SP

Prepared By: Chiltern International Fire Ltd
Chiltern House
Stocking Lane
Hughenden Valley
High Wycombe
Buckinghamshire, HP14 4ND
United Kingdom

Product name: Concrete Cloth

Classification Report No: Chilt/B09034/06

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1 Introduction

This classification report defines the classification assigned to the product, Concrete Cloth, in accordance with the procedures given in BS EN 13501-1:2007+A1:2009.

2 Details of classified product

2.1 General

The product, Concrete Cloth, is a flexible Concrete Cloth to which water is added. The product then sets to form a rigid material. The product has been tested and classified in its rigid form.

2.2 Product description

The product, Concrete Cloth is described briefly below.

Description	Specification
General Description	<p>Dry concrete mix sandwiched within a 3-dimensional fibre matrix.</p> <p>The 3-dimensional fibre matrix incorporates a closed surface (layer 1) and an open surface (layer 3) joined by a monofilament yarn. Layers 1 and 3 as described below are one single product.</p> <p>The PVC sheet (layer 4) is bonded to the open surface.</p> <p>Water is added to the concrete mix which sets to form a rigid material.</p>
Product family	Concrete Cloth in the product range CC4 to CC13
Nominal thickness	4mm to 13mm
Materials used (layers numbered in order from exposed surface to rear of the product)	Layer 1. Polyethylene terephthalate (approximately 0.9mm thick, measured value varies across product range)
	Layer 2. cementitious product (range of 3.5mm – 11.6mm thick, depending on product)
	Layer 3. Polyethylene terephthalate (approximately 0.7mm thick, measured value varies across product range)
	Layer 4. PVC (nominal 0.4mm thick)

The product is fully described in the test reports provided in support of classification listed in Clause 3.1 of this document.

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3 Test reports/extended application reports and test results in support of classification

3.1 Test reports/extended application reports

Name of Laboratory	Name of Sponsor	Test Reports	Test Method / Extended application standard
Chiltern International Fire Ltd	Concrete Canvas Ltd	Chilt/B09034/01	BS EN ISO 11925-2:2002
Chiltern International Fire Ltd	Concrete Canvas Ltd	Chilt/B09034/02	BS EN ISO 11925-2:2002
Chiltern International Fire Ltd	Concrete Canvas Ltd	Chilt/B09034/03	BS EN 13823:2002
Chiltern International Fire Ltd	Concrete Canvas Ltd	Chilt/B09034/04 /Rev1	BS EN 13823:2002
Chiltern International Fire Ltd	Concrete Canvas Ltd	Chilt/B09034/05	prEN 15725:2008 (E)

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3.2 Test results

Test Method	Number of tests	Parameter	Results	
			Parameter - mean	Compliance with parameters for classification
BS EN ISO 11925-2:2002				
30s exposure		F_s (flame spread)	$F_s \leq 150\text{mm}$ within 60s	compliant
clause 7.3.3.1	18	Flaming droplets/ particles	No ignition of filter paper	compliant
clause 7.3.3.2.2	18			
clause 7.3.3.2.3	36			
BS EN 13823:2002				
BS EN 13823:2002	5	FIGRA 0.2MJ LFS (to edge of specimen)	19.2 <edge of specimen	compliant
		THR 600s	1.66	
		SMOGRA TSP 600s	2.22 30.3	compliant
		Flaming droplets/ particles	No	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 clause 8 of BS EN 13501-1:2007+A1:2009. The classification has been carried out with the "closed surface" (layer 1) face of the product being deemed as the front face.

4.2 Classification

The product, Concrete Cloth, in relation to its reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s1

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

d0

Reaction to fire classification: B-s1, d0

4.3 Field of application

This classification is valid for the following product parameters:

Nominal thickness	4mm to 13mm
Actual thickness	5.1mm to 14.2mm
Colour	Light grey (the exposed surface) Black appearance (the PVC surface)
Mass per unit area	Approximately 1.5 kg/m ² for each mm of actual thickness

The field of application has been extended for product thickness in accordance with CEN/TS 15117 clause 6.2.1

This classification is valid for the following end use applications:

Substrate	Any wood based substrate of Class D-s2,d0 with a density equal to or greater than 510 kg/m ³ . Any substrate of Class A1 or A2-s1,d0 with a density equal to or greater than 510 kg/m ³ .
Air gap	None
Means of fixing	Product fixed to the substrate with wood screws through the product into the substrate.
Corner joint	Butt joint
Horizontal joint	Yes
Vertical joint	Yes
Exposed edges	Yes

5 Limitations

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

6 Authorisation

	Written by:	Checked by:	Authorised by:
Signature:			
Name:	Dawn Simpkins	Philip Howard	Jonathan Osborn
Title:	Senior Technical Officer	Head of Section Fire Behaviour	Chief Operating Officer
Date of issue:	14/7/10		

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