OBEX

EPDM -

Is it compliant or not?

Contents

Mission Statement

Challenging the status quo of sealing and protecting commercial glazing & facades through innovation, globally.

OBEX OVERVIEW

- Obex launched the Cortex EPDM system around 2012 to compliment our current range. We cemented our place in the industry by innovating and providing a quality product backed up with service to match.

- Since the Grenfell disaster the industry focus has rightly changed to safer, less combustible facades. Obex remains committed to providing products that are fit for purpose which also achieve the required fire classification. We continue to provide supporting evidence to aid the correct decision making and ensure our products can be specified with confidence.

- Product information and test data will form part of the Golden Thread & Regulation 38 requirements

- The Cortex Fire Rated system was launched in 2018 and is the first and only system of its kind with BBA approval.

- Our preferred route of supply is with supply chain partners, so that we have control over where and how our products are being used.

OBEX Overview

A short history

- We launched the OBEX CORTEX EPDM system in 2012 and cemented our place in the industry by innovating and providing a quality product backed up with service to match.
- Since the Grenfell disaster the industry focus has rightly changed to safer, less combustible facades.
- The OBEX CORTEX FR system was launched in 2018 and is the first and only system of its kind with BBA approval.
- We remain committed to providing products that are fit for purpose which also achieve the required fire classification. We continue to provide supporting evidence to aid the correct decision making and ensure our products can be specified with confidence.
- Our preferred route of supply is with supply chain partners, so that we have control over where and how our products are being used.

Range overview

A complete range of fire classified through-wall solutions

With KIWA or BBA 3rd party accreditation

01

Air & Vapour Control Layer System

Class A and B options, alongside a Class B internal sealing tape.

The system is completed with all relevant installation tapes.

02

Sheathing Board Systems

Class A cement-based sheathing board system, alongside a unique board with integral breather membrane.

The system is completed with all relevant installation mastic, tapes, and screws.

03

Interface Sealing Membrane System

Class A and B options, alongside a Class B internal sealing tape.

The system is completed with all relevant installation tapes.

04

Breather Membrane System

Class A & B breather membrane solutions, W1 or W2 options, and self-adhesive variants.

The system is completed with all relevant installation tapes.

REGULATIONS AND GUIDANCE IN THE APPROVED DOCUMENTS

Requirement

Requirement

External fire spread

B4. (1) The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another having regard to the height, use and position of the building.

Functional requirements
of the Regulations

Guidance: relevant buildings

Any building with sleeping accommodation should use fewer combustible products

12.15 Regulation 7(2) applies to any building with a storey at least 18m above ground level (as measured in accordance with Diagram D6 in Appendix D) and which contains one or more dwellings; an institution; or a room for residential purposes. It requires that all materials which become part of an external wall or specified attachment achieve class A2-s1, d0 or class A1 in accordance with **BS EN 13501-1**, other than those exempted by regulation 7(3).

NOTE: The above includes student accommodation, care homes, sheltered housing, hospitals, dormitories in boarding schools, hotels, hostels and boarding houses. See regulation 7(4) for the definition of relevant buildings.

NOTE: Transposition to a national class (Table B1) does not apply to the classification in this paragraph.

Regulations

The use of membranes is guided by Regulation 7 of the Building Regulations 2010 for relevant buildings

- Paragraph 2 of Regulation 7 states 'materials which become part of an external wall, or specified attachment, of a relevant building are of European Classification A2-s1,d0 or A1 classified in accordance with BS EN 13501-1.

- Paragraph 3 of Regulation 7 lists exemptions from Paragraph 2 – the critical point is that they're exempt from the A1/A2 requirement but they're not exempt altogether. 'membranes' are listed as an exemption from Paragraph 2.

- For further clarification we need to go to point 10.15 a. of Approved Document B (Vol 1):
  - Membranes used as part of the external wall construction above ground level should achieve a minimum of class B-s3,d0.

- Membranes are specifically mentioned in the Approved Document B, so even where they are used to create a seal, this does not give allowance to use combustible class E membranes within the external wall.

- REMEMBER – regulations are in place to be followed and the relevant guidance is there to help us apply

them.

EN 13501-1 FIRE TESTING

- EN 13501-1 is a reaction to fire classification (it's not fire resistance or fire stopping). EN 13501-1 is not a test itself but a classification. There are 4 test standards which make up EN 13501-1, two of which are selected depending on the fire classification of the product or system – Class F – A1.

EN ISO 11925-2	EN 13823	EN ISO 1716	EN ISO 1182
Class F – B	Class E-A2	Class A2-A1	Class A1

- EN 13823 (Single Burning Item test – images below) is applicable for classes E – B and half of the A2 classification.

- The test can be set up in many different ways, so it's critical that products are tested correctly to remove any risk of not achieving the required classification when they're installed.

EN 13501-1 FIRE TESTING

- Obex always takes a worst-case scenario approach to fire testing to remove any limitations on how the products can be installed.

- A worst case scenario for membranes is when fire can attack from both sides, so we've tested our membranes with an air gap behind it to allow fire and oxygen to circulate both sides of the membrane. (a 25mm spacer was applied around the edge of the cement board to create the air gap).

- OBEX has tested the membranes, adhesives and primers separately so that we can guarantee their individual performance and be sure that each product is compliant as a stand alone product.

- System tests carry limitations

- The test standards for Class A products dictate that non-homogenous products should be tested individually. A non-homogenous product is one which is constructed from multiple layers or dissimilar materials. E.g. a façade panel would be non-homogenous because it's made from aluminium and it has a paint finish.

FIRE IS UNPREDICTABLE SO WE ARE REMOVING AS MUCH RISK AS POSSIBLE.

CLASS E vs CLASS B VIDEO COMPARISON

CORTEX EPDM – Class E

- Supports combustion by itself
- High spread of flame

CORTEX 0500FR – Class B-s3,d0

- Does not support combustion by itself
- Very low spread of flame

CLASSIFICATION BREAKDOWN

Classification				Test Standard
A1			Non-Combustible	EN ISO 1182, EN ISO 1716
A2	s1, s2, s3	d0, d2	Limited Combustibility	EN 13823, EN ISO 1716
B	s1, s2, s3	d0, d2	Very Limited Contribution to Fire	EN ISO 11925-2, EN 13823
C	s1, s2, s3	d0, d2	Low Contribution to fire	EN ISO 11925-2, EN 13823
D	s1, s2, s3	d0, d2	Average Contribution to fire	EN ISO 11925-2, EN 13823
E		d2	Very High Contribution to Fire	EN ISO 11925-2, EN 13823
F			Very High Contribution to Fire	EN ISO 11925-2

- This table shows why we should be promoting the use of products with a higher fire classification. Traditionally, class E products have been used but the market is moving over to safer alternatives inline with Approved Document B of the Building Regulations.

INTERFACE SEALING MEMBRANES

- The function of an interface sealing membrane is to create an air and weathertight barrier between two elements which stop water, wind, snow, dust etc from passing through.





WATER PENETRATION & LEGACY

- EPDM membranes comply with EN 13984, so an FR EPDM alternative (0500FR or 0200FR) should also comply with EN 13984.

- A requirement of EN 13984 is to pass the EN 1928 test for water tightness which is carried out at 2kPa for 24 hours.

- When we consider low fire risk alternatives to EPDM, we MUST understand the key characteristics of EPDM to ensure the substituted products perform to the same level to avoid leakages and legacy issues.

Interface Sealing Membrane	Breather Membrane
EN 13984	EN 13859-2
Pass = EN 1928 at 2kPa for **24 hours**	W1 watertightness = EN 1928 at 2kPa for **2 hours**

WATER PENETRATION & LEGACY

IMPORTANT NOTE: Breathable membranes comply with EN 13859-2 (Underlays for walls).

EN 13859-2 also requires an EN 1928 test for watertightness at 2kPa, BUT it is only for 2 hours. EN13984 stipulates a 24 hr test at 2kpa.

Breathable membranes are not suitable for water loaded applications – such as window heads, balcony cills, parapet walls, and other horizontal applications.

We have tested our own Breather membranes (Cortex 0520FR) for a 24 hour test, and they do not pass (failure is around 6 hours).

- Ageing testing carried out:
  - EN 1928 after ageing - 70°C heat for 90 days & UV exposure for 21 days.
  - Sulphate ageing – 28 days calcium sulphate immersion (below ground applications).

- CORTEX FR System will last in excess of 60 years when used in non-exposed applications. (behind the façade)

RESIDENTIAL WARRANTY PROVIDERS

- NHBC & LABC require that any alternatives to EPDM are compliant with EN 13984.
- A specific requirement from NHBC was thatwatertightness after ageing was tested and confirmed.
- NHBC have had leaks at cill/threshold applications with products which aren't EN 13984 compliant.
- We haven't had any leaks on NHBC or other sites with the Cortex 0500FR Membrane, including their use at cills & thresholds.

OBEX ACCREDITATIONS

BBA – interface membranes

System	Associated products	Fire Classification
Cortex 0200FR Class A2 Membrane System	Cortex 0210FR Class A2 Paste Adhesive	Class A2 (EN 13501-1)
Cortex 0500FR Class B Membrane System	Cortex 0771FR Class B Paste Adhesive, Cortex 0778FR Class B Contact Adhesive, Cortex 0787FR Class B Primer	Class B (EN 13501-1)
Cortex EPDM System	Cortex 0765/0766/0769 Paste Adhesive, Cortex 0775 Contact Adhesive, Cortex 0785 Primer	Class E (EN 13501-1)

KIWA – breather membranes and VCL's

Product System	Fire Classification
Cortex 0220FR Class A1 Breather Membrane	Class A1 (EN 13501-1)
Cortex 0223FR Class A2 Breather Membrane	Class A2 (EN 13501-1)
Cortex 0520FR Class B Breather Membrane	Class B (EN 13501-1)
Cortex 0230FR Class A2 VCL	Class A2 (EN 13501-1)

PRACTICAL APPLICATON



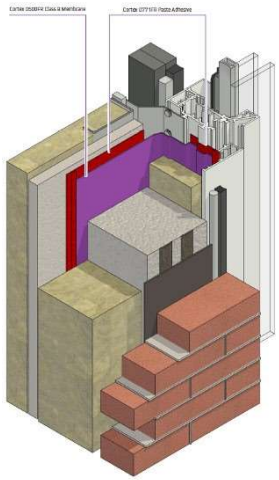



Key Points for the Cortex FR System:

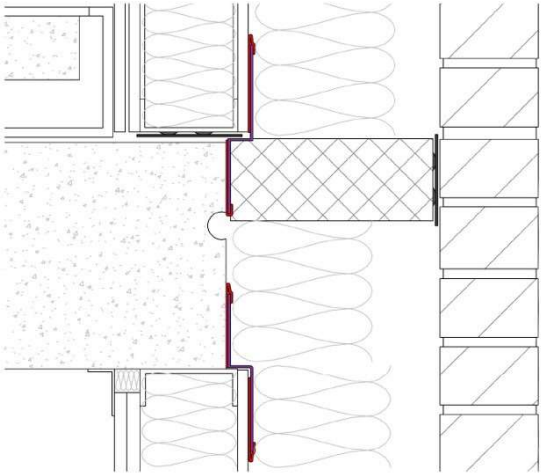
Weather and Airtight Membranes
- 100mm bond width to porous surfaces, 20-30mm minimum bond width for non-porous surfaces
Porous surface may require priming
Ensure all membranes are capped-off with paste adhesive
USE THE OBEX ON-SITE SUPPORT OFFERING - FOC

INTERFACE SEALING MEMBRANES

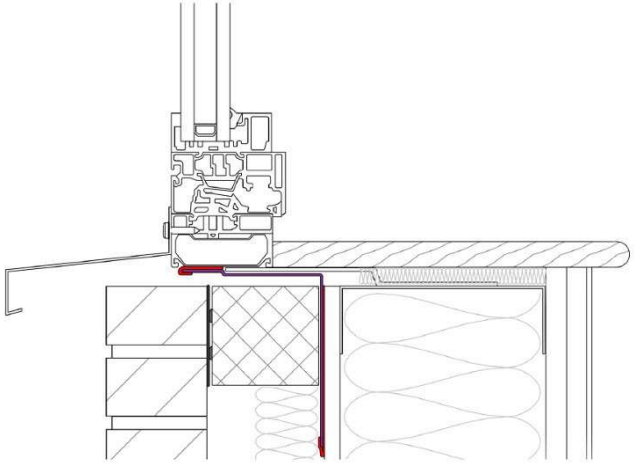
- An interface sealing membrane must comply with EN13984 (waterproofing) to be considered a suitable FR alternative to EPDM. Common interfaces are window/door to sheathing board junctions, SFS/sheathing board to concrete slab junctions, balcony stubs etc….



Typical Jamb Detail



Typical Slab Edge/SFS Interface Detail



Typical Cill Detail

PRACTICAL APPLICATON

Sheathing Board

The Cortex 0270 board is an external sheathing board which combines the durability and weather resistance of traditional cement boards with the speed and workability of gypsum boards. The 0270 board can also be used for internal tiling applications.

- Easy Score and Snap cutting – no tented cutting areas, no dust, no noise, no special cutting blades = safer, cheaper, quicker!
- 3rd Party KIWA approved
- A1 fire classification to EN 13501-1
- Can be left exposed for 12 months
- Lightweight – weighs on average 12kg lighter than traditional cement boards
- Water resistant, even when cut – it's not reliant on an external non-porous facing
- Rot & Mould resistant – contains no wood chips or other organic filler materials.
- European manufacturing – stable supply chain and less transit time

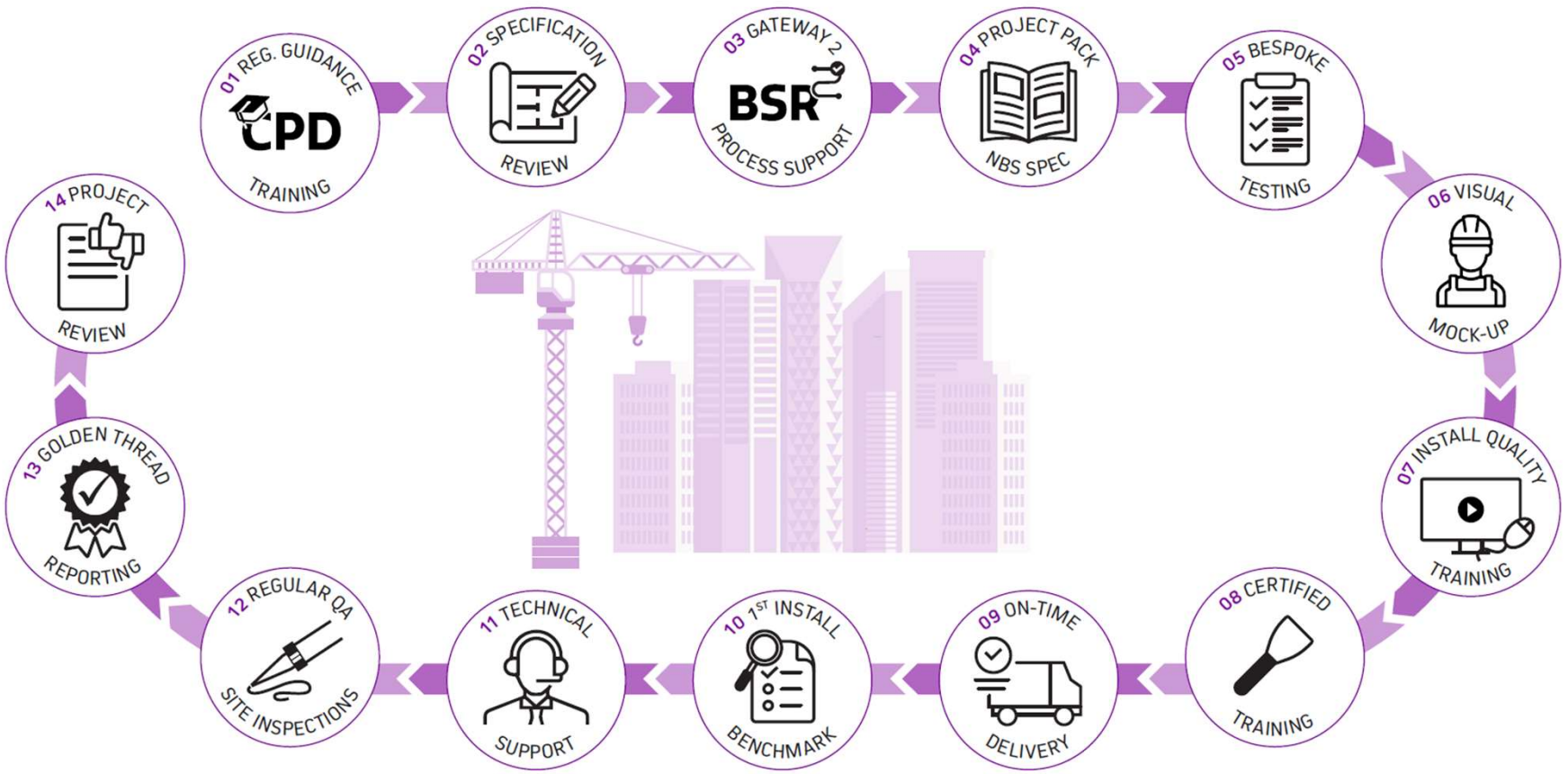
Sheathing Board

The Cortex 0270 board is the next generation of cement board and is vital to helping construction achieve its carbon goals. A lot of cement boards on the market are manufactured in the far east, and there structural integrity is derived from a process called autoclave. During the autoclave process the boards are subjected to high heat and pressure to cure the board. A small autoclave can use as much as 630 kwh per 10h cycle – the average UK house uses 8-10 kwh of energy per day![1]

Case Study – Kent Street Baths, Birmingham.
18 Storey Residential Development.
Main Contractor: Winvic
Installer: Reynolds
Drylining

[1] https://www.homeserve.com/uk/living/electrical/what-uses-the-most-electricity-in-the-house/#:~:text=The%20average%20kWh%20per%20day,the%20equipment%20that%20you%20use.

OPTIMA – complete project support



OBEX OPTIMA

CONTACT DETAILS

Dan Norman

Role: Head of Specification

Phone: 01905 337800

Email: dan@obexuk.com

Rob Halliwell

Role: Specifications advisor

Phone: 01905 337800

Email: rob.halliwell@obexuk.com

Chris Watling

Role: Specification Manager

Phone: 01905 337800

Email: chris.watling@obexuk.com

Callum Doouss

Role: Technical Director

Phone: 01905 337800

Email: callum@obexuk.com

Chetwyn Doouss

Role: Technical Support

Phone: 01905 337800

Email: chetwyn@obexuk.com

THANK YOU FOR YOUR TIME

LET'S DISCUSS!