Compliance paths - Fire resistance of horizontal perimeter seals in curtain walling

SIDERISE

Guidance to outline relevant testing standards- Satisfying the functional performance requirements of the Building Regulations in England and Wales

This document outlines applicable cavity barrier and fire stop testing methodologies. Full compliance and acceptance of project specific arrangements remains subject to holistic review by the Project Fire Engineer/ appointed supervising authority.

Building Regulations, 2010,
Schedule 1, Part B Requirements B3 (Internal fire spread) and B4 (External fire spread)

Fire engineered design

Provided by a suitability qualified person.

Specialist guidance advocates BS EN 1364-4: 2014 as best practice for evaluating the fire resistance performance of perimeter seals:

ASFP Advisory Note 7
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BS EN 13830: 2015+A1: 2020
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EAD 350141-00-1106

Approved Documents B
(Fire safety) Volumes 1 & 2, 2019 + 2020 and 2022 amendments

BS EN 13501-2: 2023
(Fire classification of construction products and building elements. Classification using data from fire resistance and / or smoke control tests, excluding ventilation services)

Stipulates that curtain wall perimeter seals must be tested to either BS EN 1364-3 or BS EN 1364-4.

BS EN 1364-4: 2014
(Fire resistance tests for non-loadbearing elements. Curtain walling. Part configuration)

Optional: it is recommended that perimeter seals are subjected to cyclic movement testing before in-test fire exposure in accordance with EAD 350141-00-1106.

Non-fire rated curtain wall (Type A)

Configuration 5

BS EN 1364-3: 2014
(Fire resistance tests for non-loadbearing elements - Curtain walling. Full configuration (complete assembly))

Type B 'fire-rated' curtain walling in the UK is rare. Type A 'non-fire rated' is more common.
BS EN 1364-3 cannot be used with Type A (non-fire rated) curtain wall and is therefore not relevant.
Assesses fire resistance performance of curtain wall test assembly incorporating perimeter seal - not seal itself.

Fire-rated curtain wall (Type B)

Type B 'fire-rated' curtain walling in the UK is rare. Type A 'non-fire rated' is more common. BS EN 1364-4 can be used with Type A (non fire rated) curtain walls.

BS EN 1366-4: 2021
(Fire resistance tests for service installations - Linear joint seals)

Curtain wall perimeter seals excluded from scope.

BS 476-20: 1987
(Fire tests on building materials and structures - Method for determination of the fire resistance of elements of construction (general principles))

To be withdrawn September 2029.

CW-FS Firestop

e.g. CW-FS120, functioning as a perimeter seal, achieves a fire resistance performance of 120 minutes integrity and insulation, and has a 10% movement capability.

European Technical Assessment

Certificate of compliance

Listing report

CW-FB Fireboard

Facilitates the test by providing fire protection to the inner face of the test assembly in the spandrel zone.
-
Enhances the performance of curtain walling test assembly.
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Enables the perimeter seal to fully perform its function.
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Does not result in a measured EI classification of the spandrel assembly.

Assessment

ASFP Advisory Note 17
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Position paper on assessments and technical evaluations in lieu of fire testing.
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PFPF Guide to Undertaking Technical Assessments of Fire Performance.

EXAP
15254-6: 2014
(Extended application of results from fire resistance tests. Non-loadbearing walls. Curtain walling).

BS EN 1364-4: 2014 refers to BS EN 15254-6: 2014 for additional scope and extended field of application rules.

DIAP

Direct field of application rules to BS EN 1364-4: 2014
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Listed product parameters as per CW-FS Technical Datasheet
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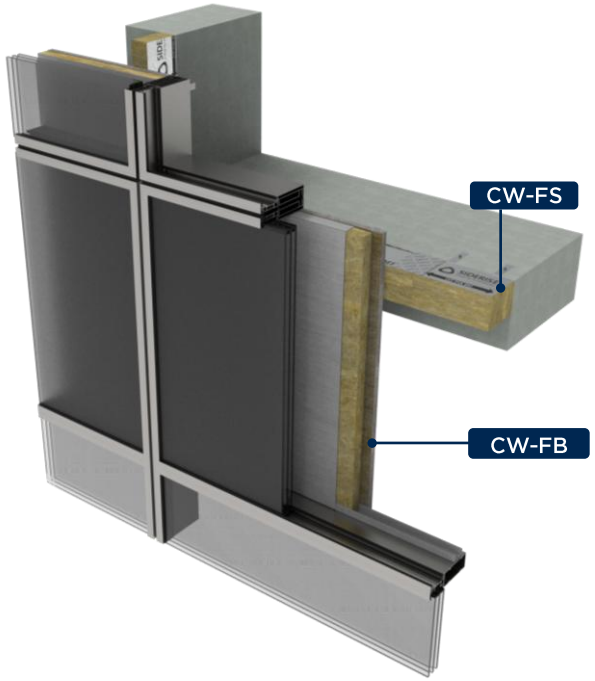
DIAP allows for small changes to be permitted from the tested arrangement depending on performance outcome.

Fire engineer assessment
Provided by a suitably qualified person, and which takes account of other factors such as sprinklers, the building risk profile, and the evacuation strategy.

Manufacturer's technical evaluation
Can cover a variation to the standard perimeter seal installation requirements; similar perimeter seal arrangements to existing test data; and similar perimeter seal penetration interfaces to existing test data. NB must always be supported by test evidence in the form of a test report.



Compliance paths | Siderise products tested to standard | Not relevant to the given application | Additional information | Can not be used | Specialist guidance: CWCT proposed approaches to curtain wall firestopping | Being Withdrawn