

Testing Framework Guide - Siderise CW-FS Firestop for curtain walling applications

Siderise CW-FS Firestop functioning as a perimeter seal – horizontal application

Diagram illustrating the relationship between statutory and industry compliance guidance, classification standards and applicable firestop testing methodologies in England and Wales

Compliance and acceptance of project-specific designs require a holistic review and clarification by the Project Design Team, with support from a qualified and competent Project Fire Engineer.

In curtain walling applications the overarching authority should consider a justified approach reviewing all elements including (but not limited to);

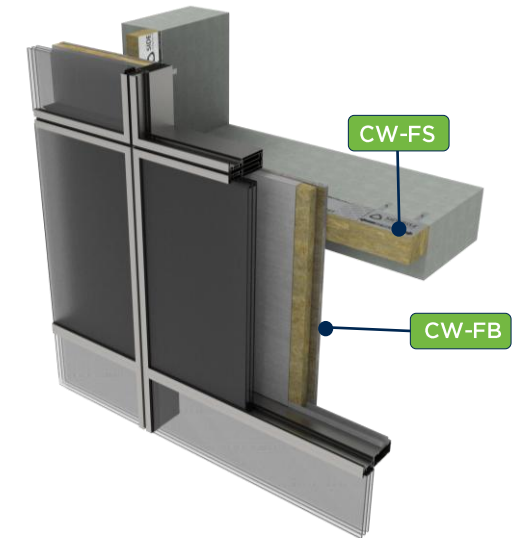
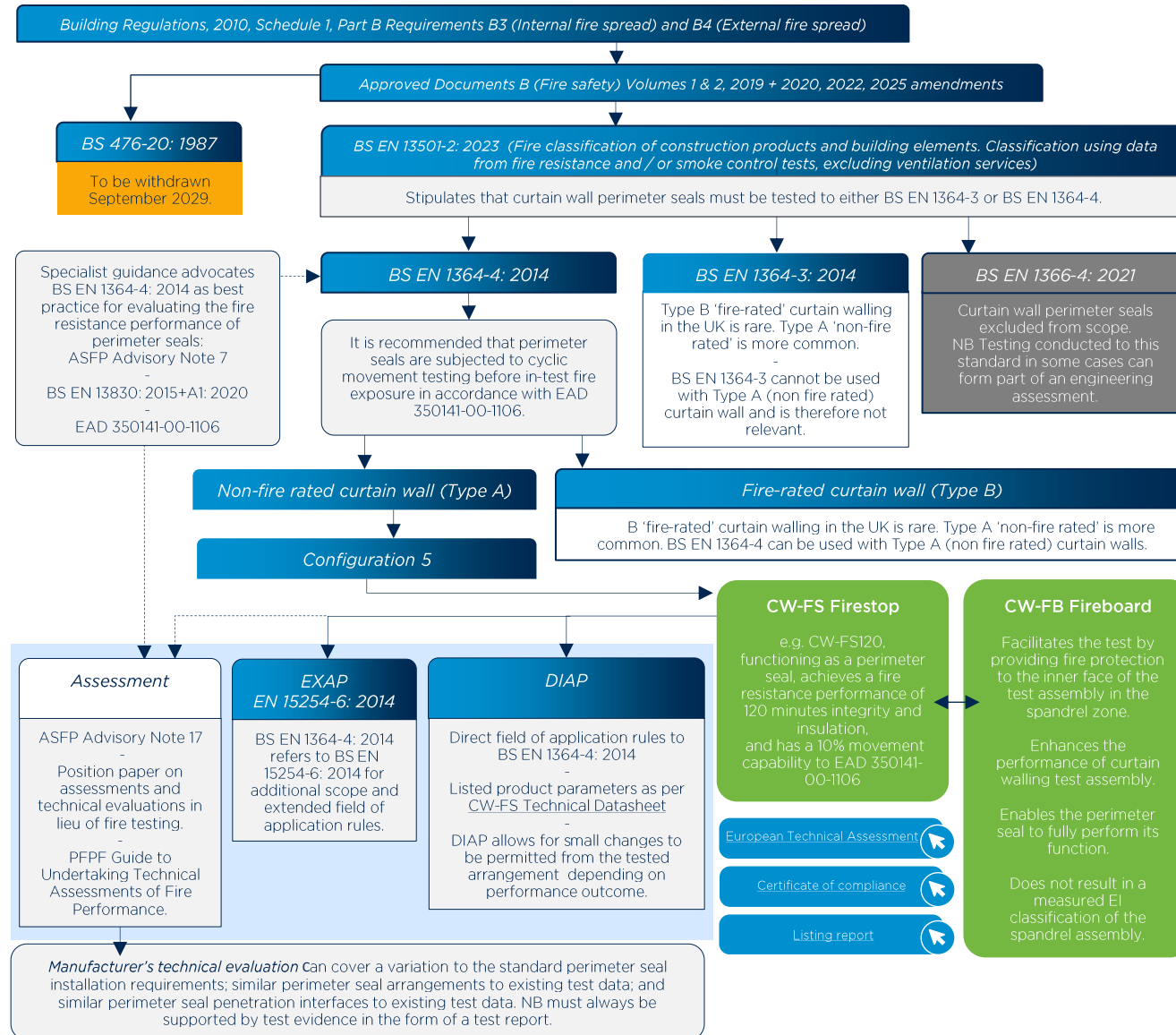
- Building use and occupancy
- Building height
- Active fire protection
- Strategy in a fire event
- Façade design
- Materials and components
- Firefighting access

Main fire routes (external, internal and via the façade) will be holistically reviewed in each project case.

This framework is based on guidance in Approved Documents B (Fire safety) to outline relevant testing methodologies for horizontal firestops / perimeter seals used to the rear of curtain wall façades, which can form one part of a justified approach.

As curtain walls are not typically considered as common building scenarios in Approved Document B, other guidance documents need to be applied where relevant e.g. BS 9999, BS 9991, HTM05/02 and BB100, which have alternative or different approaches to facade performance requirements.

Where applicable, additional regulatory and industry guidance should also be reviewed e.g. CWCT TN115.



Note;
Image above is an indicative illustration only to demonstrate a typical Curtain Walling arrangement.

BS EN 1364-4 (Configuration 5) is used to determine the performance of the perimeter seal itself (i.e. fire stop).

The full façade arrangement is to be reviewed as part of a fire engineered solution.

Primary testing and third-party certification is to BS EN1364-4, directly in accordance with the standard, is concrete to concrete.

Siderise can provide additional **Supplementary** evidence where available, to aid the Design Team in their holistic review. For example;

- Siderise CW with facade bracket interfaces BS EN 1366-4
- Siderise CW to end of flexible wall BS EN 1366-4
- Siderise CW tested to ASTM E2307
- Siderise CW tested to BS EN 1366-4

Please see next page for further guidance.

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Additional considerations for the relationship between statutory and industry compliance guidance, classification standards and applicable firestop testing methodologies in England and Wales

Continued

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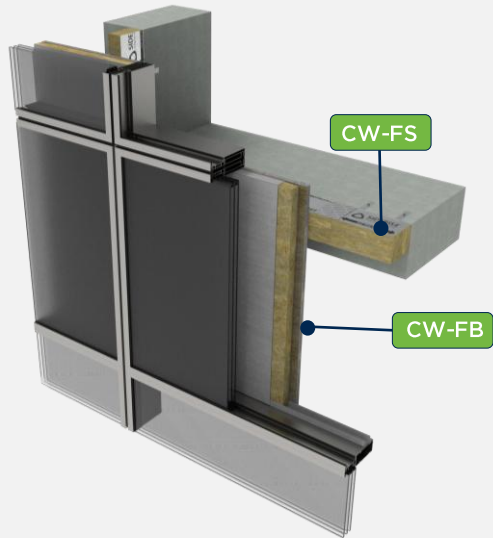
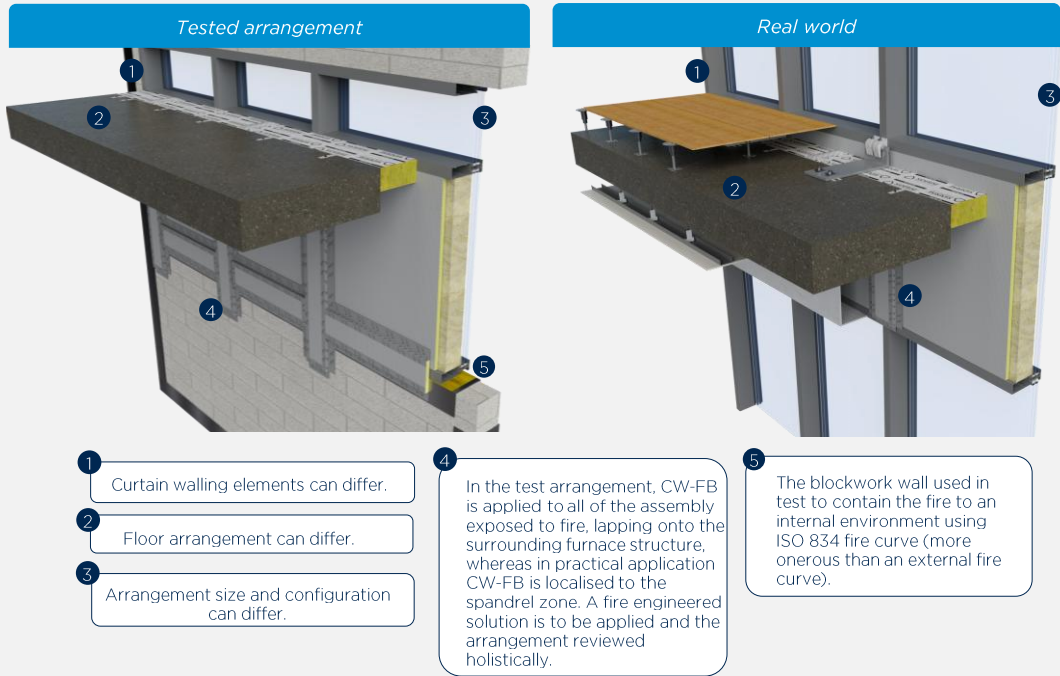
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Additional considerations

It is important to note the differences between tested arrangements and real-world conditions. Key variables are highlighted below.



Siderise position

Due to the above we recommend following the tested detail as closely as possible including protecting the spandrel zone.

The responsibility of Siderise as a product manufacturer is to provide guidance and information.

Designer duties

Designers are expected to take every reasonable step to ensure the design work on a project demonstrates compliance with the Building Regulations and that the design is robust.

It is a legal requirement to satisfy the functional requirements of Schedule 1 'B3 – Limit internal fire spread' and 'B4 – Limit external fire spread'.

In addition to the legal requirements, designs must comply with the project specific fire strategy in consideration with the relevant passive and active protection systems.

Do I need to protect the spandrel? (UK Documents)	Supplementary test data	Leapfrog - break-out / break-in
Approved Documents B do not prescribe a protected spandrel. However, they do lead to BS EN 1364-4: 2014 via BS EN 13501-2: 2023 where fire protection of the inner face of the curtain wall in the spandrel zone is required to allow the test to be conducted. As Curtain Walls are not typically considered as common building scenarios in Approved Document B, other guidance documents need to be applied where relevant.	Test standards used in other global jurisdictions (ASTM E2307 and ASTM E2874) that are designed to replicate a fully developed fire, subject the spandrel assembly (including the perimeter seal and the lower transom) to fire exposure from inside and outside the compartment, emulating break-out through the window and leapfrog to the floor above. CW-FS120 to the rear of a protected spandrel construction has demonstrated its ability to maintain its fire resistance for over 2 hours in these conditions.	When using a non-fire rated facade with aluminium profiles and non-fire resisting glazing, there is risk of fire break-out through the spandrel panel at the underside of the firestop and subsequent break-in above if the spandrel is not protected. Through this mechanism there is the potential for fire to spread vertically over the facade exterior to a room's interior on the floor above the compartment of origin.

Testing Framework Guide - Siderise CW Cavity Barrier & Firestop for curtain walling applications

Siderise CW Cavity Barrier & Firestop – vertical application

Diagram illustrating the relationship between statutory and industry compliance guidance, classification standards and applicable cavity barrier and firestop testing methodologies in England and Wales

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