

CW-FS | PERIMETER BARRIERS AND FIRESTOPS FOR CURTAIN WALLING

Technical Data Sheet

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integrity in all we do

Acoustic, fire and thermal insulation specialists

Application

Siderise CW-FS perimeter barrier and fire stop systems offer an extensive range of solutions for fire stop, smoke stop, and sound barrier requirements in all curtain wall applications.

The primary function of the CW system is to maintain continuity of fire resistance by sealing the void between the compartment floors or walls and the external curtain wall both horizontally and vertically.

Apart from being simple and quick to install CW systems' unique product construction also provides the ability to accommodate facade movement for the life of the building.

Product Description

Siderise perimeter barriers and fire stops for curtain walling use a unique method of manufacture which provides a resilient lateral compression. This facilitates installation, ensuring the requisite tight fit and enhances fire integrity.

Throughout the range, the materials comprise a one-piece product with a pre-compressed non-combustible stonewool core. The products also have integral aluminium foil facings to provide an overall Class A1 rating (to EN 13501-1) and excellent resistance to smoke.

The systems can offer tested fire rating options ranging from 30 mins to 3 hours and can accommodate void widths up to 600mm.

In addition to providing an effective seal against the passage of smoke and fire, the products will also function as an effective acoustic barrier and plenum lining.

Standard Systems

The materials can be either supplied as pre-cut units to suit a specified void size or in sheet form for cutting on site.

Standard sheet products are supplied 1200 x 1200 mm which may prove beneficial when the actual void size is not known or where it varies significantly. Please note that when ordered in sheet form, the requisite quantity of fixing brackets needs to be purchased separately.

Pre-cut strips are available in 1mm increments of width to suit the cavity size to provide a tight compressive fit within the void - Please see tables 1-3 regarding fit type. Each pre-cut CW unit is supplied with appropriate fixing brackets as part of the system.

The standard fixing brackets are supplied in 1mm galvanised mild steel in a flat form that is complete with a pre-notched facility for folding on site.

All holes are to be drilled to suit the varying site conditions. Different size brackets are available according to the cavity size – please see Tables 1 to 3.

All fixing brackets are to be mechanically secured to the substructure with suitable non-combustible fixings.

Fire Performance

Reaction to fire

Siderise CW Perimeter Barriers and Fire Stops have been tested for non-combustibility and classified A1 to EN 13501-1.

Resistance to fire

Siderise CW systems have been tested to both EN 1364-4 and EN 1366-4 for fire resistance and classified to EN 13501-2.

EN 1364-4 testing was undertaken in accordance with EAD 350141-00-1106 including movement cycling to 500 times ($\pm 10\%$) pre-test.

Siderise CW systems provide continuity of fire resistance across the void when aligned with fire-rated elements to maintain compartmentation.

The correct system is simply selected by matching the fire resistance requirements to the CW system type and void size.

Table 1 to 3 summarise the void sizes, fire resistance classifications to EN 13501-2, and provides 3rd party certification details where applicable.

Approved Document B (England & Wales)

Approved Document B for England & Wales (2019 edition) gives classification to EN 13501-2 as the primary route to compliance via EN 1364-4 testing.

BS 476-20 remains as an alternate route for compliance.

Siderise CW systems have additionally been tested and assessed to BS 476-20. For any voids not covered by tables 1-3, please contact technical.services@siderise.com for advice on these options.

Third-Party Certification

CE Marking (Cert No. 2531-CPR-CXO10200) has been achieved based on ETA 21/0297 in accordance with EAD 350141-00-1106, which can also be downloaded from our online technical resources.

Certifire certification has been achieved, based on proven fire performance, for horizontal applications to EN 1364-4 (table 1), and horizontal and vertical applications to EN 1366-4 (table 2 & 3).

'Certifire certification and any product label is only applicable to the specific scope and field of application as defined within the current and valid Certifire certificate number CF563. Any additional details, amendments or additions to the product, or any use outside the scope or field of application, outside of that stated within certificate number CF563 has not been reviewed or approved by Warringtonfire.'

For further details, Certifire certificate 'CF 563' can be downloaded from our online technical resources.

Intertek certification has also been achieved, based on reaction to fire performance to EN 13501-1, and fire resistance to EN 1364-4 for horizontal applications (table 1). Additionally Intertek certification has been achieved to ASTM E2307.

For further details, Intertek Certificates 'WH120-32944302' (EN 13501-1) and 'WHI19-32944301' (EN 1364-4 & ASTM E2307) can be downloaded from our online technical resources.

Table 1: Fire Resistance to EN 1364-4 (Horizontal Orientation)

| Void Width (mm) | Product Ref. | Product Thickness | Compression (%) | Integrity (mins) | Insulation (mins) | Cover Length (mm) | Bracket Requirement | 3 rd Party Approvals |
|-----------------|--------------|-------------------|-----------------|------------------|-------------------|-------------------|---------------------------------|--|
| 20 to 50 | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2no.B65/110 600mm centres | Certifire CF 563 Intertek WHI19-329443 01 |
| | CW-FS180 | 150mm | +10% | 180 | 180 | 1200 | 2no.B65/110 600mm centres | Certifire CF 563 Intertek WHI19-329443 01 |
| 51 to 150 | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2no.B65/110 600mm centres | Certifire CF 563 Intertek WHI19-329443 01 |
| | CW-FS180 | 150mm | +10% | 180 | 180 | 1200 | 2no.B65/110 600mm centres | Certifire CF 563 Intertek WHI19-329443 01 |
| 151 to 250 | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2no.B195 600mm centres | Certifire CF 563 Intertek WHI19-329443 01 |
| | CW-FS180 | 150mm | +10% | 180 | 180 | 1200 | 2no.B195 600mm centres | Certifire CF 563 Intertek WHI19-329443 01 |

All fixing brackets are to be mechanically fixed to the structure. Please see the installation instructions.

Table 2: Fire Resistance to EN 1366-4 (Horizontal Orientation)

| Void Width (mm) | Product Ref. | Product Thickness | Compression (minimum) | Integrity (mins) | Insulation (mins) | Cover Length (mm) | Bracket Requirement | 3 rd Party Approvals |
|-----------------|--------------|-------------------|-----------------------|------------------|-------------------|-------------------|---------------------------|---------------------------------|
| 20 to 50 | CW-CB30 | 75mm | +10% | 60 | 30 | 1200 | None | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | None | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | None | Certifire'CF 563' |
| 51 to 150 | CW-CB30 | 75mm | +10% | 60 | 30 | 1200 | 2no.B65/110 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2no.B65/110 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2no.B65/110 600mm centres | Certifire'CF 563' |
| 151 to 240 | CW-CB30 | 75mm | +10% | 60 | 30 | 1200 | 2no.B195 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2no.B195 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2no.B195 600mm centres | Certifire'CF 563' |
| 241 to 300 | CW-CB30 | 75mm | +10% | 60 | 30 | 1200 | 2no.B355 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2no.B355 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2no.B355 600mm centres | Certifire'CF 563' |
| 301 to 600 | CW-FS60-X | 120mm | Void Width +20mm | 60 | 60 | 1200 | 2no.B355 600mm centres | Certifire'CF 563' |

All fixing brackets are to be mechanically fixed to the structure. Please see the installation instructions.

Table 3: Fire Resistance to EN 1366-4 (Vertical Orientation)

| Void Width (mm) | Product Ref. | Product Thickness | Compression (minimum) | Integrity (mins) | Insulation (mins) | Cover Length (mm) | Bracket Requirement | 3 rd Party Approvals |
|-----------------|--------------|-------------------|-----------------------|------------------|-------------------|-------------------|-----------------------------|---------------------------------|
| 20 to 50 | CW-CB30 | 75mm | +10% | 90 | 30 | 1200 | None | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | None | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | None | Certifire'CF 563' |
| 51 to 150 | CW-CB30 | 75mm | +10% | 90 | 30 | 1200 | 2 no. B65/110 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2 no. B65/110 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2 no. B65/110 600mm centres | Certifire'CF 563' |
| 151 to 240 | CW-CB30 | 75mm | +10% | 90 | 30 | 1200 | 2 no. B195 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2 no. B195 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2 no. B195 600mm centres | Certifire'CF 563' |
| 241 to 300 | CW-CB30 | 75mm | +10% | 90 | 30 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |
| 301 to 450 | CW-CB30 | 75mm | +10% | 90 | 30 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |
| | CW-FS60 | 90mm | +10% | 90 | 60 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |
| | CW-FS120 | 120mm | +10% | 120 | 120 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |
| 451 to 600 | CW-FS60-X | 120mm | Void Width +20mm | 60 | 60 | 1200 | 2 no. B355 600mm centres | Certifire'CF 563' |

All fixing brackets are to be mechanically fixed to the structure. Please see the installation instructions.

Acoustic Performance

The CW-FS range additionally provides an effective sound barrier as the material construction and inherent properties of the stonewool lamella core afford the CW exceptional acoustic performance.

Also, the foil facings and the additional sealing of joints with Siderise foil tape all serve to provide improved airtightness.

Sound reduction between floors

The installation of the CW systems within an external curtain wall cavity will significantly increase the floor-to-floor attenuation.

As an example, the installation of 120mm thick CW-FS120 within the cavity will increase the transmission loss via the tortuous sound path by approximately 25dB.

The precise value will depend upon the specifics of the construction.

Table 4 confirms the values for Weighted Sound Reduction Index (Rw) based on laboratory tests to determine airborne sound transmission in accordance with BS EN ISO 140-3: 1995, BS 2750 Pt 3: 1995.

Table 4: CW acoustic performance

| Product Type | Weighted Sound Reduction Index | |
|--------------|--------------------------------|---------|
| | Thickness (mm) | Rw (dB) |
| CW-CB30 | 75 | 21 |
| CW-FS60 | 90 | 22 |
| CW-FS120 | 120 | 25 |
| CW-FS180 | 150 | 26* |

NOTE: *Assessed values by either UKAS accredited Laboratories or IOA registered Acoustic Engineers

Enhanced Acoustic Performance CW-AB Acoustic Barriers

Siderise offers a range of complementary acoustic mass overlay materials which can further enhance the overall acoustic performance of the construction.

CW-AB barriers are extremely quick and easy to install and are suitable for improving sound performance within all curtain walling environments.

The CW-AB acoustic barriers are factory produced multi-layer composite materials consisting of an aluminium foil faced polymeric layer bonded to a flexible acoustic foam. The products are available in two grades depending on the acoustic performance requirement, namely AB5 and AB10 whenever façade deflection is anticipated.

Table 5: AB acoustic performance

| Product Type | Weighted Sound Reduction Index | |
|--------------|--------------------------------|---------|
| | Surface mass(mm) | Rw (dB) |
| AB5 | 5 kg/m ² | 25 |
| AB10 | 10 kg/m ² | 28 |

NOTE: *Assessed values by either UKAS accredited Laboratories or IOA registered Acoustic Engineers

Table 6: CW-FS, CW-AB and CVB/C acoustic performance

| Product | 21 - 30dB Rw | | 31 – 35dB Rw | | 36 - 50dB Rw | | 50dB Rw + | |
|---|--------------|----------|--------------|----------|--------------|----------|-----------|----------|
| | Rw | Rw + Ctr | Rw | Rw + Ctr | Rw | Rw + Ctr | Rw | Rw + Ctr |
| SIDERISE CW-FS60 | 23 | 21 | - | - | - | - | - | - |
| SIDERISE CW-FS120 | 25 | 23 | - | - | - | - | - | - |
| SIDERISE CW-FS60 + AB5 Overlay | - | - | 33 | 27 | - | - | - | - |
| SIDERISE CW-FS120 + AB5 Overlay | - | - | 33 | 27 | - | - | - | - |
| SIDERISE CW-FS60 + AB10 Overlay | - | - | - | - | 36* | 31* | - | - |
| SIDERISE CW-FS120 + AB10 Overlay | - | - | - | - | 37 | 32 | - | - |
| SIDERISE CW-FS120 + AB10 Overlay + CVB/C10 below | - | - | - | - | - | - | 51 | 45 |
| SIDERISE CW-FS120 + 2mm Steel Plate Overlay + CVB/ C10/75 below | - | - | - | - | - | - | 53 | 45 |

The table above illustrates typical acoustic performance of CW-FS, CW-AB and CVB/C products when used in an arrangement, please see our website for individual product information and standard details.

Thermal Performance

Thermal conductivity: $\lambda_{10} = 0.038 \text{ W/m.K}$ (tested foil to foil)

Technical Specification

Siderise Perimeter Barriers Fire stops for Curtain Walling

Table 7: Product Properties

| | |
|-------------------------|--|
| Form Supplied | Sheets : 1200mm x 1200mm (UK and EU); 1200mm x 1100mm (RoW): Thickness is denoted by the rating Pre-cut strips : 1200mm x (cavity + compression) x thickness, please see tables 1 to 3 |
| Colour | Silver, with coloured identification tape centrally located on the product |
| Finish | Aluminium foil |
| Density | Nominal 75 kg/m ³ |
| Thermal Conductivity | λ_{10} = 0.038 W/m.K (tested foil to foil) |
| Cavities | 20mm to 600mm Please see tables 1 to 3 |
| Reaction to fire | EN 13501-1 : Class 'A1' |
| Resistance to fire | 30 to 180 minutes, please see tables 1 to 3 |
| Water Vapour Absorption | <5% by weight to ASTM C1104-19 (with foil facing removed). This meets the standard specification for 'Mineral Fibre Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing' ASTM C C665-17, clause 7.5 |

Movement Characteristics

Curtain walling and external facade deflection

The qualification of proprietary fire stop systems is typically limited by the condition in which they must be installed in a static environment.

However, for curtain walling applications it is imperative that the installed seal can function effectively with due regard to all designed movement serviceability limits.

Siderise recognises that curtain walling and cladding façade systems will deflect due to:

- Positive wind-load
- Negative wind-load
- Occupational live load

The above are covered by EN 13116:2001.

Typically, a project may stipulate that the curtain walling system may have the following allowable deflection limits:

Under the declared wind loads the maximum frontal deflection of the curtain walling framing members shall not exceed L/200 or 15mm, whichever is the less, when; measured between the points of support or anchorage to the building structure in compliance with EN 13116. [Extract from EN 13830]

These factors may inevitably combine to preclude the suitability and therefore, use of certain systems e.g. high-density material slab products.

However, the CW-FS fire stop systems are remarkably effective for their function within curtain walling as the unique material construction can accept the cyclical negative and positive wind and live loads imposed on the façade.

Table 8: Physical Characteristics

| Characteristic | Value |
|--|--|
| Manufacturer and Product Name | Siderise CW-FS |
| Product Type | Perimeter Barriers and Firestops for Curtain Walling |
| Code/Model/Reference/SKU | CW-FS |
| Description | See 'Product Description' section |
| Application/Use | See 'Application' section |
| Material | See Safety Data Sheet section 3.1 |
| Weight | Precut strips - Max Carton Weight 30kg ; Full individual sheets from 8.3 +/- 0.1 kg to approx 13.7 +/- 0.4 kg (75mm to 120mm thick respectively) |
| Finish /Colour | Solid, green-brown exposed edges with silver aluminium top and bottom facings |
| Packaging | Pre-cut strips packaged in cardboard cartons size; Full sheets packaged on pallets |
| Pack Size | Pre-cut strips packaged in cardboard cartons size up to 1230mm x 610mm, Full sheets packaged on pallets 1210mm x 1210mm |
| Unit of measure | millimetre (mm) |
| Chemical properties/Safety data sheets | See Safety Data Sheet section 3.1 |
| Size/dimensions (product & installation spatial requirement) | See Table 7 'Form Supplied' |
| Shelf life | n/a; Store in dry conditions and protect from mechanical damage. |

Environmental

Siderise perimeter barriers and fire stops for curtain walling are environmentally friendly:

- They contain no Volatile Organic Compounds (VOCs) and no very Volatile Organic Compounds (vVOCs).
- Zero Ozone Depleting Potential
- Zero Global Warming Potential
- Recyclable

Additional Information

The following information is available upon request or via download from the website:

- Safety Data Sheet
- Product Brochure
- Standard Details
- Installation Instructions
- Installation Video
- NBS Specification Clauses

Technical Support

For technical advice or support please contact: technical.services@siderise.com

For Installation Training or Site Inspections please contact: site.services@siderise.com

Context

The information in this datasheet is believed to be accurate at the date of publication. Siderise has a policy of continuous product improvement and reserves the right to alter or amend the specifications of products without prior notice. Siderise does not accept responsibility for the consequences of using the products described outside of the recommendations within this datasheet. Expert advice should be sought where there is any doubt about the correct specification or installation of Siderise products.

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