fischer

FireStop.
Solutions for curtain wall façades.

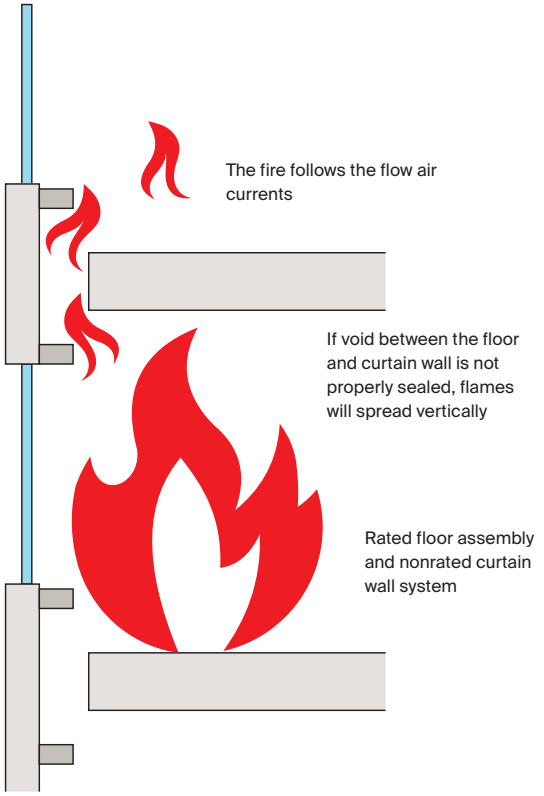
Fire spread in curtain wall façades

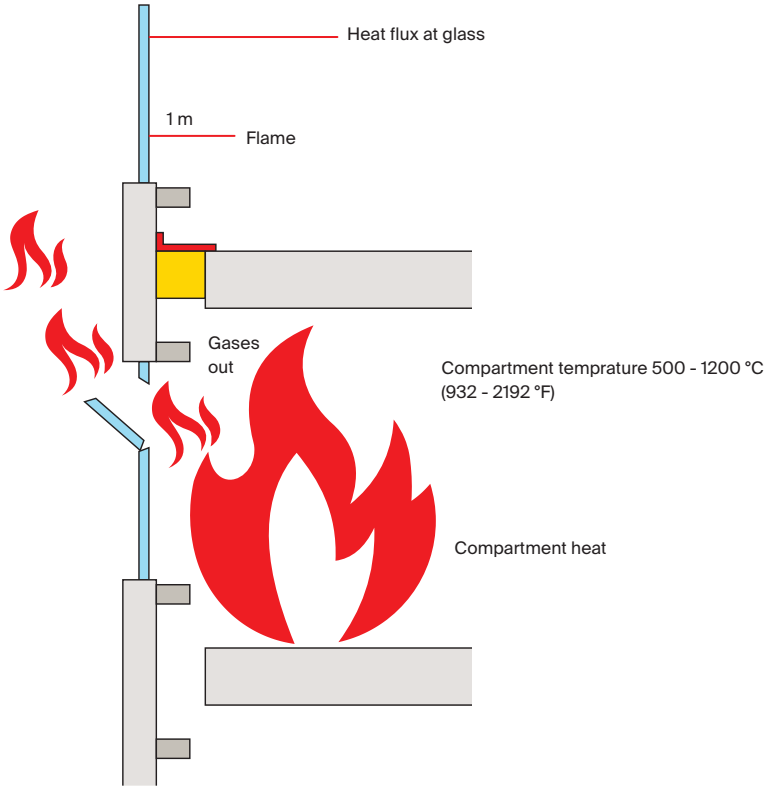
Curtain wall façades can be a high risk for fire spread.

How can a fire spread through a curtain wall?

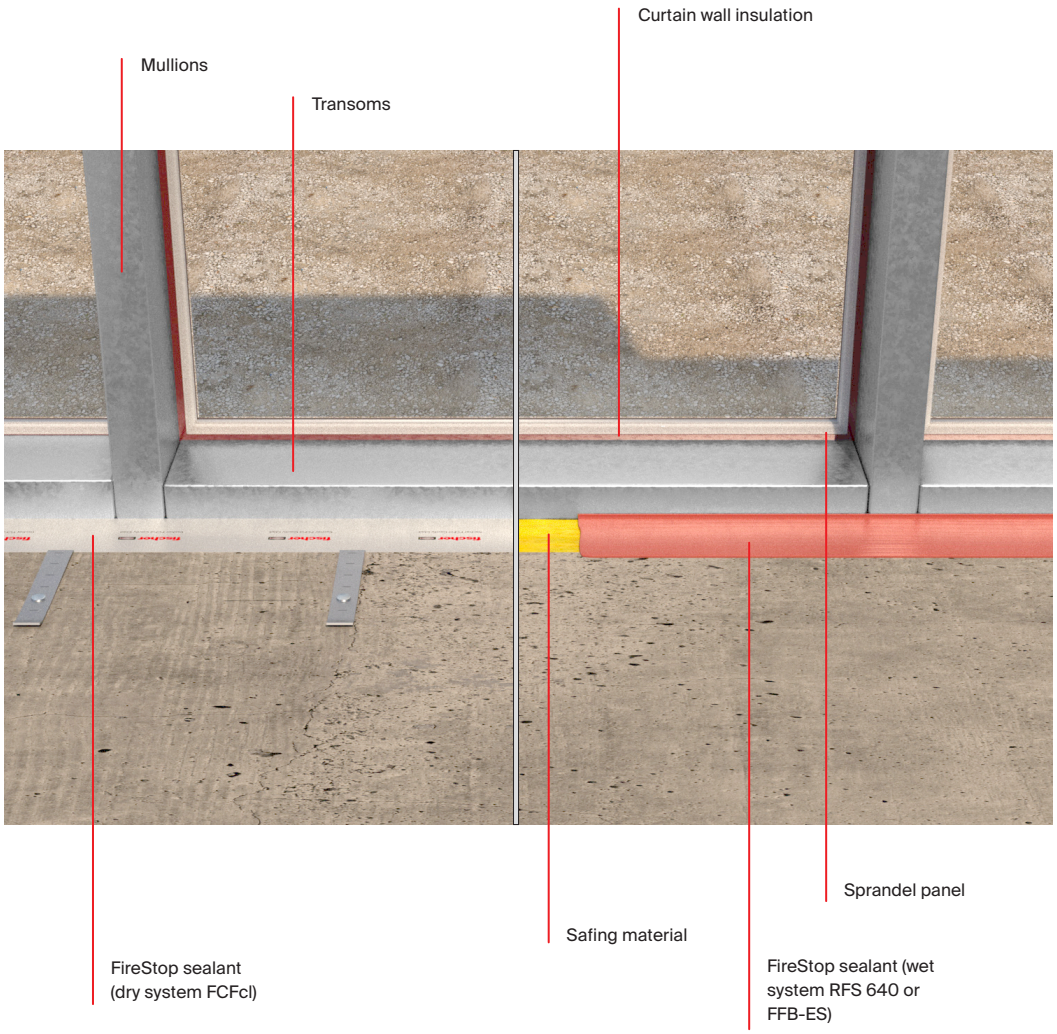
Perimeter joint
Fire can spread within the building through the gap between the edge of a floor and an exterior curtain wall. This void needs to be protected by a perimeter firestop system.

Leap frog effect
The fire on a certain floor grows to such an extent that the heat causes the adjacent vision glass to break. The flames spread on the outer façade surface and „leaps“ from one floor to the other. This effect can only be controlled by an overall system. International test standards as for instance ASTM E 2307 do consider this effect.





A fire safe curtain wall usually consists of the following elements



Technical details

Two differing solutions

The perimeter joint in a curtain wall between the façade elements and the floor slab can be protected against the passage of fire from one floor to another by extending the slab to the outer construction element (façade panel) using a suitable and tested firestop material. An effective seal can be provided by two differing solutions.

Wet system
fischer Rapid Fire Seal RFS 640 / fischer Fire Barr ElastoSeal FFB-ES is a spray grade one-part water-based, fire rated sealant, which has been designed to provide smoke and fIre protection when used in perimeter joints. Once applied, it prevents the passage of fire and smoke and can contribute to the acoustic value of a structure between fire rated compartments giving a fire resistance for up to 3 hours for RFS 640. The FFB-ES provides an integrity rating of up to 120 minutes tested to EN 1364-4.

fischer FireStop Spray RFS 640

fischer FireStop Spray FFB-ES

Advantages wet system

- Excellent smoke seal
- Water resistance (leakage)
- Excellent movement capabilities

Assessment / approval RFS 640

CLASSIFIED c UL us
FILL, VOID OR CAVITY MATERIAL FOR USE IN THROUGH PENETRATIONS FIRE STOP SYSTEMS SEE UL FIRE RESISTANCE DIRECTORY 4NE5

FM APPROVED

American Standard
ASTM E 814 (UL 1479)
ASTM E 84 (UL 723)
ASTM E 1966 (UL 2079)

Assessment / approval FFB-ES

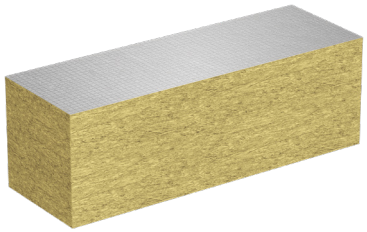
ETA-15/0203
1121-CPR-JA5065

UL EU

British Standard	
BS EN 10140	BS 476-20
BS EN 1366-4: 2006	BS EN 1364-4
BS EN 1026	BS EN 1366-3
BS EN 1027	

Dry system

fischer FCFcl Cavity Clad has been designed for curtain wall façades closing the gap between façade elements and a floor slab. A unique one piece closed stone wool core provides a resilient lateral compression. Encased with an aluminium foil face scrim to provide class 'O' reaction to fire rating and provides excellent resistance to smoke and fire.



fischer Cavity FireStop Clad FCFcl

Advantages dry system

- Quick installation
- No shelf life
- No curing time

Assessment / approval

ETA-17/0448
0843-CPR-0361

Approved CF 5659

British Standard
BS 476 - 20
BS EN 1026
BS EN 1366-4: 2006
BS EN ISO 10140-3: 1995

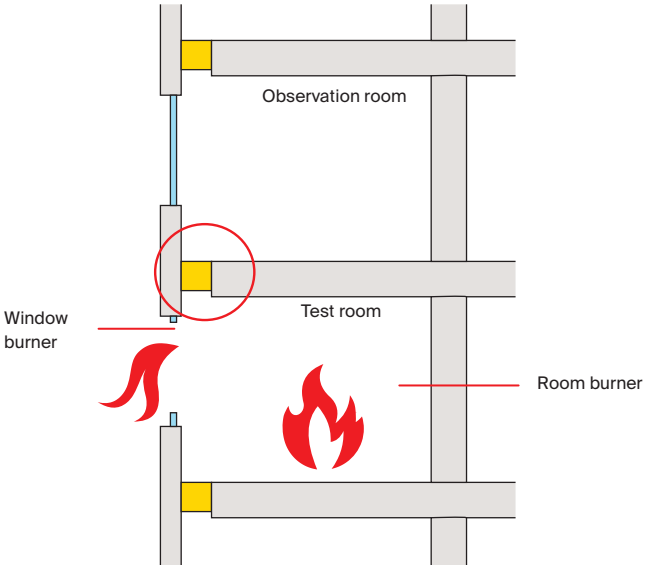
Note: 1364-4 testing and approval is pending

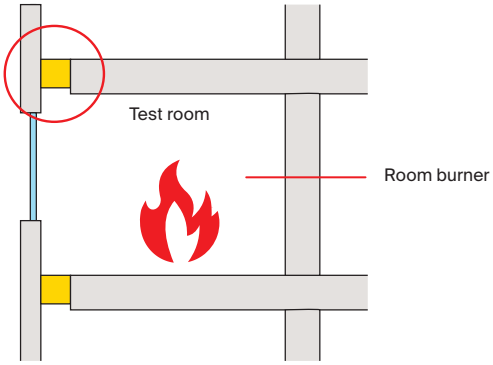
Testing and design

Standards for fire tests in curtain wall façades

For assessing the fire resistance performance in curtain wall façades mainly two standards are to be considered:

- **ASTM E 2307:** Standard test method for determining fire resistance of perimeter fire barriers using intermediate-scale multi-story test apparatus.
- **EN 1364-4:** Fire resistance tests for non-loadbearing elements – part 4: curtain walling – part configuration.





Testing procedures ASTM E 2307

- Fire exposure internal with external fire spread through open window to simulate the „leap frog effect“
- 4 m long perimeter joint tested
- Minimum pressure of 2.5 Pa at lowest point of perimeter joint
- Movement test: Different movement types for cycling specified
- Integrity fail criteria: cotton pad test, flames
- Insulation fail criteria: Mean temperature rise of 139 °C / Temperature rise of 181 °C

Testing procedures EN 1364-4

- Fire exposure internal or external upon the application required
- Min. 3 m long perimeter joint
- Pressure: 20 Pa at 100 mm below the seal
- Movement test: Optional
- Integrity fail criteria: Cotton pad test, gap gauge, sustained flaming
- Insulation fail criteria: Mean temperature rise of 140 °C / Temperature rise of 180 °C

fischer RFS 640 – ASTM tested

Tested to:
ASTM E 814 (UL 1479), ASTM E 1966 (UL 2079), ASTM E 2307, FM approval

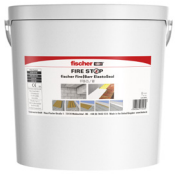
fischer FFB-ES ElastoSeal – EN tested

Tested to:
EN 1366-4, EN 1366-3, EN 1364-4, BS 476-20

Product specifications

Assortment

fischer FFB-ES ElastoSeal



FFB-ES

Item	Art.-No.	Content [kg]	Colour	Sales unit [pcs]
FFB-ES/White	**520753**	20	white	1
FFB-ES/GREY	**520755**	20	grey	1
FFB-ES/RED	**520756**	20	red	1

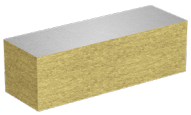
Quantity per box is subject to minimum order requirement.

fischer RFS 640

RFS 640

Item	Art.-No.	Content [l]	Sales unit [pcs]
RFS 640	**516539**	19	1

fischer FCFcI



FCFcI

Item	Art.-No.	To suit cavitiy void width [mm]	Colour	Fire rating [hours]	Sales unit [pcs]
FCFcI 75	**546210**	1200 x 600 x 75	silver	up to 2*	1
FCFcI 100	**053046**	1200 x 600 x 100	silver	up to 2*	1
FCFcI 1200	**546209**	1200 x 1200 x 100	silver	up to 2*	1

Important: Please provide total cavity width for your application, excluding any insulation there might be.
FCFcI Cavity Clad shall be cut 10 mm (3/8 in.) over size.
* Depending on design & configuration of the FCFcI Cavity Clad.

fischer Multi Purpose Bracket

Item	Art.-No.	To suit cavitiy void width [mm]	Fire rating [hours]	Sales unit [pcs]
Multi Purpose Bracket	**551868**	390 x 25 x 1 (A2)	N/A	1
Multi Purpose Bracket	**551954**	500 x 25 x 1 (A2)	N/A	1

Dealer:

www.fischer.de

fischer stands for

fixing systems
Automotive
fischertechnik
Consulting
LNT Automation

fischerwerke GmbH & Co. KG
Klaus-Fischer-Straße 1 · 72178 Waldachtal
Germany
T +49 7443 12 - 0
www.fischer.de · info@fischer.de

XXXXXXX (1) · 05/2020 · V-MKS · Printed in Germany · Subject to technical modifications.