SECURO

Air vents with instant fire stop

Firebreather® by Securo

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Protect what matters is more than just a slogan for us at Securo

Protecting people is something we strive to do every day by having the safest fire-resistant vents and ventilated fire stop solutions on the market and also by continuously working for safer regulations, both nationally and internationally.

People and infrastructure
Since 2006 our products based on the award-winning Firebreather® technology have made everyday life safer for both people and infrastructure. It is satisfying for everyone who works here to know that the results of our work are socially beneficial and give people better protection. We are a Norwegian company with sales partners in several countries around the world. We are also actively working with new markets worldwide.

A part of svt Group
Since 2020, Securo has been a part of the international svt Group, which is the largest group in the field of passive fire safety in Europe and has sales networks in more than 50 countries. For more than 50 years, the svt Group of Companies has been recognised as a leading full-service provider in the field of passive structural fire protection and industrial fire stop applications.

Svt's range of products
With our brands PYRO-SAFE®, ROKU®, KERAFIX®, FLAMRO®, FLAMMADUR®, GEAQUELLO®, FLEXILODICE® and Firebreather®, we offer Europe's most comprehensive portfolio of state-of-the-art fire protection products and applications.

Firebreather® by Securo

svt
Protect your values.

Why fire resistance is an integral part of the building envelope

Modern ventilated rainscreen cladding systems have become one of the preferred choices worldwide for high-rise structures, providing design flexibility as well as weather protection.

A free flow of air behind the cladding is very important for keeping the cavity dry, but this also makes the façade one of the most vulnerable elements of a building in case of a fire. A façade must neither propagate fire, nor allow fire or heat to travel from one area to another (compartmentation) and it should remain structurally intact for a reasonable amount of time when exposed to fire.

That ultimately means that:

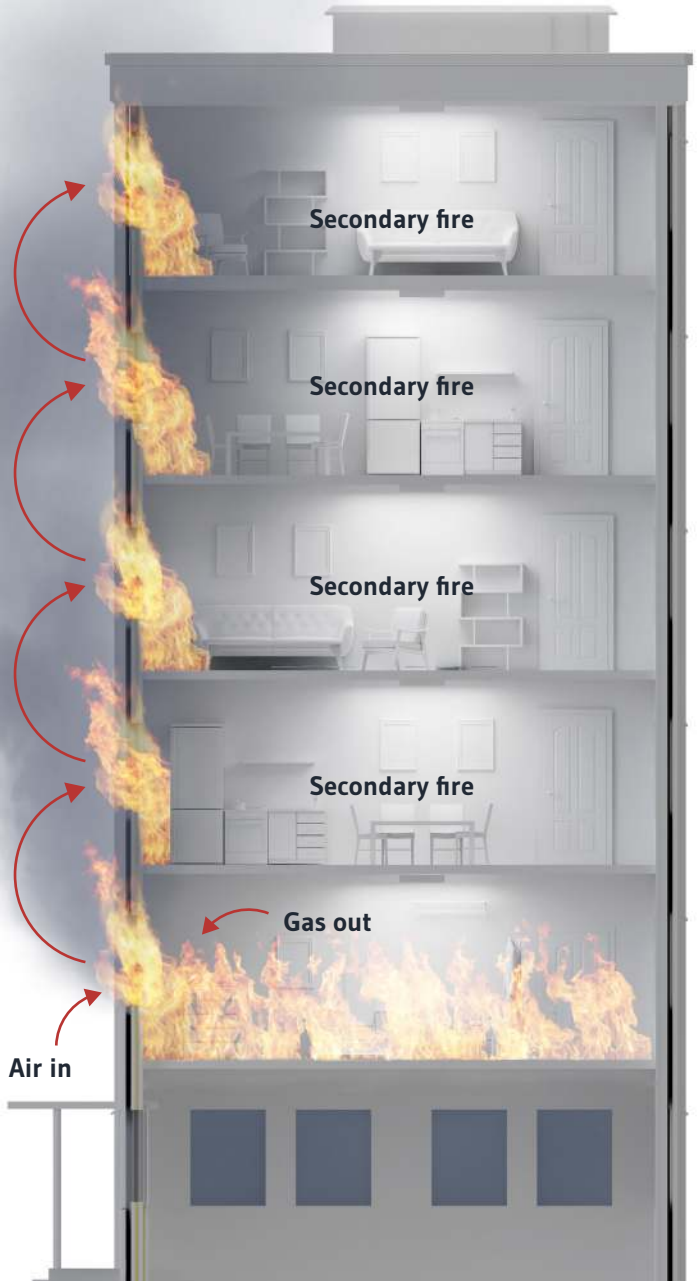
- The separating function between fire cells must be maintained.
- Spread of flame within the wall must be stopped.
- Spread of fire along the surface of the building façade should be limited.

Why are fires in cavities and air gaps in facades so dangerous?
Due to the "chimney effect", fire in the air gap behind cladding can spread very quickly. As the oxygen in the air gap is utilized, the fire seeks more oxygen and moves rapidly upwards.

Fire spreading only on the outside of cladding is often not that critical, while fire that spreads in the air gap behind the cladding can travel 5-10 times faster in the same time frame due to rapid buoyancy of hot air in the air gap, compared to fire on the outside.

"The Leap-Frog Effect"
A flashover in a room may cause fire to break out of a window and flames and hot gasses escaping through a window opening are sufficient to cause the re-entry of the fire in the room above the storey of fire origin. Speeds up to 8 meters per minute have been measured. Since the fire is hidden behind the cladding, it is very hard for fire fighters to extinguish it.

When this mechanism of fire spread occurs, it has the potential to repeat through the same mechanism to every floor above it. Therefore, this is referred to as the "Leap-Frog"-Effect.



What if the cavity is non-combustible?
Even if the cavity itself is fully non-combustible, the extended length of flames created in the "chimney" still allows the flames to reach the next floor level, where windows and other wall penetrations will allow the fire to re-enter the building and maintain the spread of fire.

The Firebreather® cavity barrier stops the chimney effect
The Firebreather® Cavity Barrier is the only product on the market that has the ability to instantly stop fire from spreading in the air gap behind the cladding in a facade. This makes it possible to use non-combustible materials in the air gap.

Photo: Moelven

The World's Tallest Timber Building, Mjøstårnet, is secured by Securo

Standing 85.4 meters tall, Mjøstårnet is certified as the world's tallest timber building by the Council on Tall Buildings and Urban Habitat, as well as Guinness World Records. The tower has also received numerous awards and recognitions, such as the New York Design Awards, Norwegian Tech Awards and CTBUH's Award of Excellence.

Mjøstårnet stands as a symbol of the "green shift" and proves that tall buildings can be built using local resources, local suppliers and sustainable wooden materials.

Firebreather® Cavity Barriers are installed between the storeys and provide a good façade compartmentation in the building. Securo is proud to be a part of the fire safety of such a landmark building.

How the Firebreather® Technology works

The Firebreather® technology is our patented concept for the development of passive ventilation grilles and cavity barriers with the unique feature of blocking the spread of flames, heat and embers instantly in case of fire.

Our technology consists of a unique combination of a flame arresting element, a heat absorbing and accumulating element that extends the flame arresting effect, a thermal bridge that prevents the products becoming too hot on the unexposed side and a grid of intumescent that completely closes the product in minutes.

This makes the Firebreather® technology unique:

- A flame arresting element that works from the first millisecond.
- A heat absorbing and accumulating element that extends the flame arresting effect for up to five minutes.
- A thermal bridge that prevents the products from becoming too hot on the unexposed side.
- A grid of intumescent that completely closes the product within a couple of minutes.

Flame stop from the first second

The combination of these elements results in stopping flames, heat, and embers from the first second and up to several hours.

Application areas

The Firebreather technology can be applied in different configurations, and application areas. Our ventilated fire stopping solutions can be implemented and customized in construction, offshore installations, shipping, batteries, industry, and more.

The solution for fire resistance

Fire resistance is the ability of a construction element to maintain its fire stability, integrity, and thermal insulation for a certain period of time.

All Firebreather® products are tested and certified with EI rating.

Technical advantages with Firebreather® Cavity Barrier
What makes the Firebreather® Cavity Barrier the superior choice for passive fire safe ventilation of façades:

- The cavity barrier creates strong fire cell compartments in facades.
- The cavity barrier instantly stops fire spread in cavities.
- The cavity barrier limits the spread along the outside of the facade.

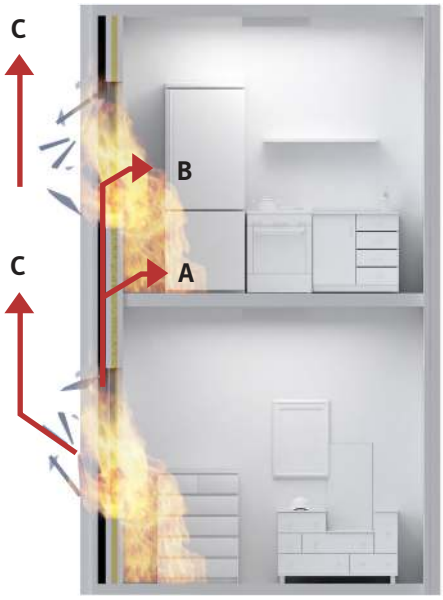
Firebreather® Cavity Barrier tests and certified documentation
Firebreather® Cavity Barrier is tested according to the European standard EN 1366-4 and have a product documentation from RISE fire research and a French product approval.

Firebreather® Cavity Barrier is also tested according to ASTM 2912 – Test method for sudden direct flame impingement for the open state in ventilated constructions. This shows the products ability to stop the passage of flames, embers, radiation, and hot gases caused by sudden direct flame impingement.

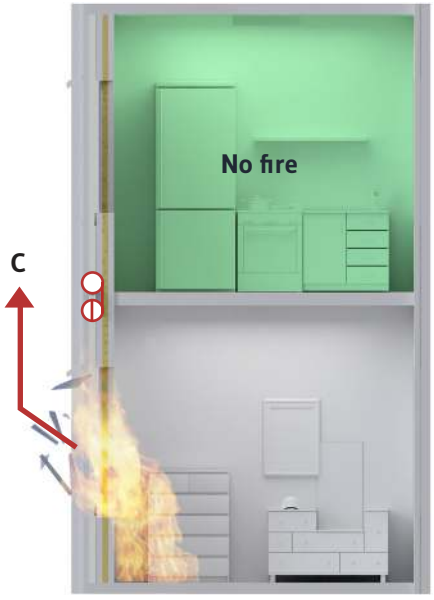
These documentations is a guarantee of quality and performance and makes the product safe to use in your projects.

What makes the Firebreather® Cavity Barrier from Securo your best choice for passive fire safe venting of your façade?

- No bypassing of fire compartments via perimeter wall-deck joint **(A)**.
- No bypassing fire compartments via air gaps and breaking window **(B)**.
- Limit fire spread on the façade **(C)**.
- Block flames in the open state (traditional products allow flames to pass first 5 minutes).*
- No disintegration during fire (Firebreather® keeps in place even with movement).
- No PVC or plastic that can form burning droplets spreading downward fires.
- Block ember attacks.
- Block birds, rodents and insects (more than 2 mm).



Without Firebreather® Cavity Barrier



With Firebreather® Cavity Barrier

Knowing the speed at which a fire can spread in a cavity, instant fire stop is an essential attribute for a cavity barrier. As the Firebreather® prevents any concealed fire in the cavity, the only way for fire to spread is on the panels' outer surfaces **(C)**. Flames **(C)** are no longer supported by the torch **(B)** emanating from the vent opening at top of the air gap, so its capability of leap frogging to next panel is significantly reduced.

* While all other products on the market need up to several minutes to expand and close the cavity, the **Firebreather® Cavity Barrier** has instant fire stop that will keep flames from entering the protected area at any time.

Fire compartmentation of the façade

Just like fire cells inside a building, façade compartmentation prevents fire from spreading in the facade and eventually inside the building.

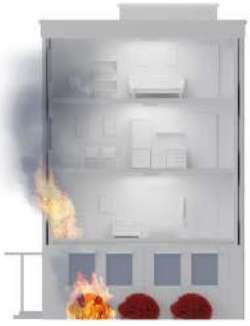
A façade can be divided into fire compartments by using ventilated cavity barriers at floor level, ensuring that normal ventilation of the façade is maintained and at the same time ensuring effective fire protection. Non-ventilated fire stops would be installed vertically.

Role of barriers in cavity compartmentation
Cavity barriers prevent fire from entering the cavity of rainscreens and from bypassing fire-separating elements, like floors. A cavity can be as large as the wall itself, so it is most often sub-divided into cavity compartments.

Fire in the cavity behind the cladding can spread 5–10 times faster than on the outside, with a speed of up to 8 meters per minute. Firebreather® cavity barrier stops the fire from spreading to the floor above while maintaining the necessary ventilation for the facade. This means that the fire can only spread on the outside of the facade, which is often less critical compared to a fire that spreads in the cavity.

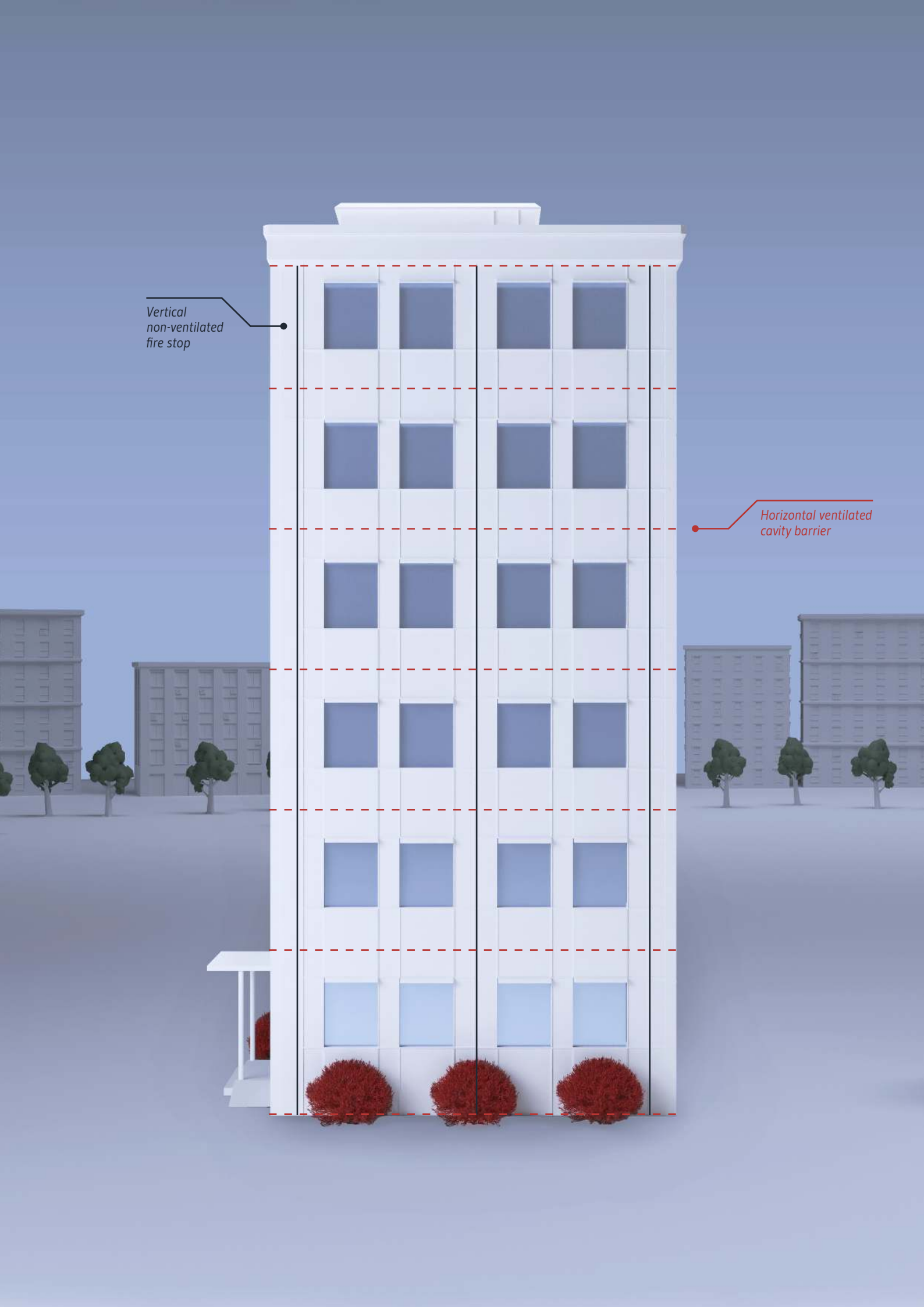
Working principle of 30 minutes external wall cavity compartmentation

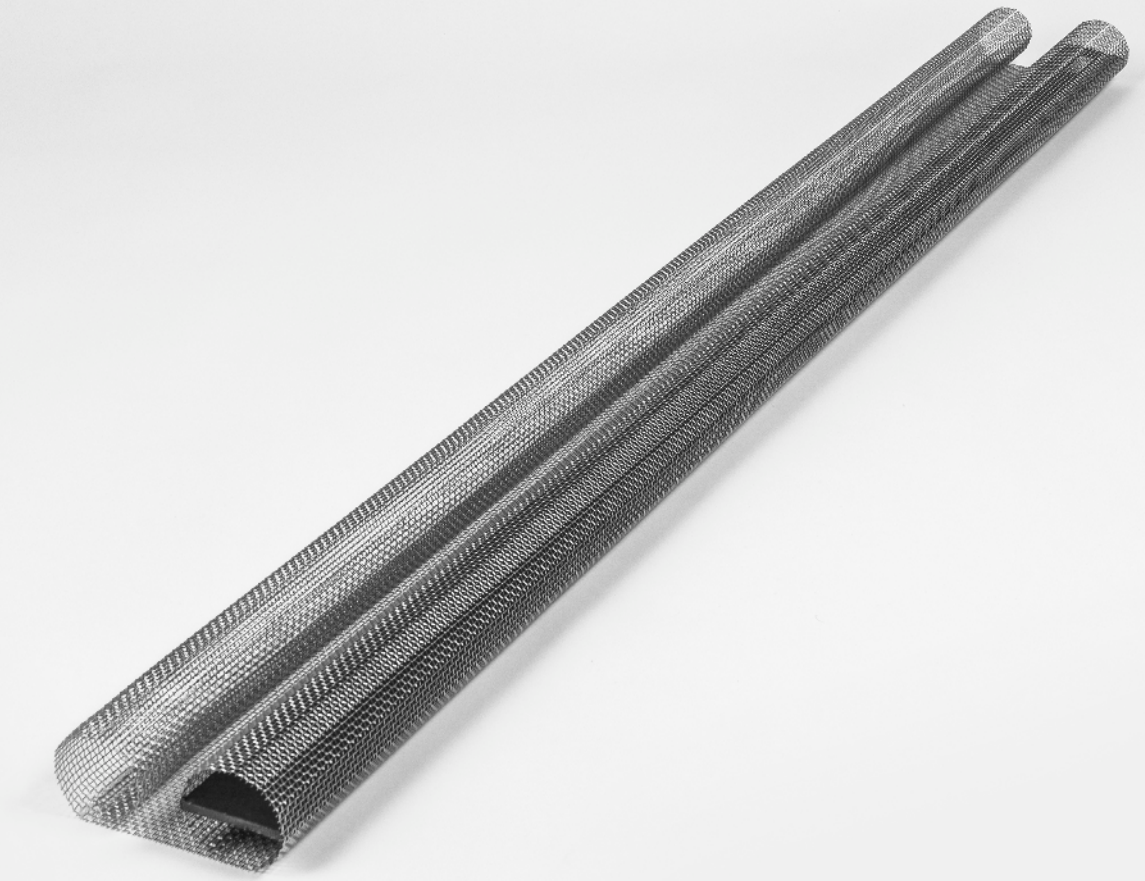
0–30 minutes:
External fire



60 minutes:
Fire contained within cavity compartment 1

90 minutes:
Fire contained within cavity compartments 1 and 2


Vertical
non-ventilated
fire stop
Horizontal ventilated
cavity barrier



Firebreather® Cavity Barrier

To prevent vertical fire spread in the façade, some kind of fire stopping needs to be installed. One of the main challenges is ensuring that the breathability of the building is balanced with the ability to prevent the passage of smoke and fire through the cavities. The most effective way is to use non-combustible cavity barriers that are mechanically fixed on the façade wall so that, in case of fire, the expanding material does not fall off.

Firebreather® Cavity Barrier is the leading, high performance choice for protection of ventilated façades and rainscreen cladding. Used in the external building envelope, it provides an effective protection against fire and hot smoke, whilst maintaining continuous airflow and drainage.

The **Firebreather® Cavity Barrier** has several superior attributes, one of them being that It's the only tested solution in the market with instant fire stop.

Firebreather® Cavity Barrier:
- > Instant fire stop
- > Ember stop
- > Continues ventilation and drainage behind the cladding
- > No disintegration of intumescent during fire and movement in the building
- > Tested both as stand-alone and as part of several large-scale system tests
- > Fast and easy installation

Applications:
- > Behind ventilated façade cladding
- > In ventilated roof constructions

Dimensions:
- > Width: 23mm, 28/30mm, 36mm and 50mm
- > Length: 53cm and 113cm

Fire rating:
- > EI30, EI60 and EI90

Firebreather® Façade Vent

In fire rated walls a conflict between venting and fire protection often occurs because venting is required/desired, but openable windows will compromise the fire rating of the wall.

This problem is often encountered, for example, in buildings where there are external walkways, and the walkway is the escape way and therefore requires a fire limiting structure without openings where fire can spread.

The **Firebreather® Façade Vent** solves this problem by offering both venting and fire rating. This is the best and cheapest method to fulfil the requirements for fire rated construction.

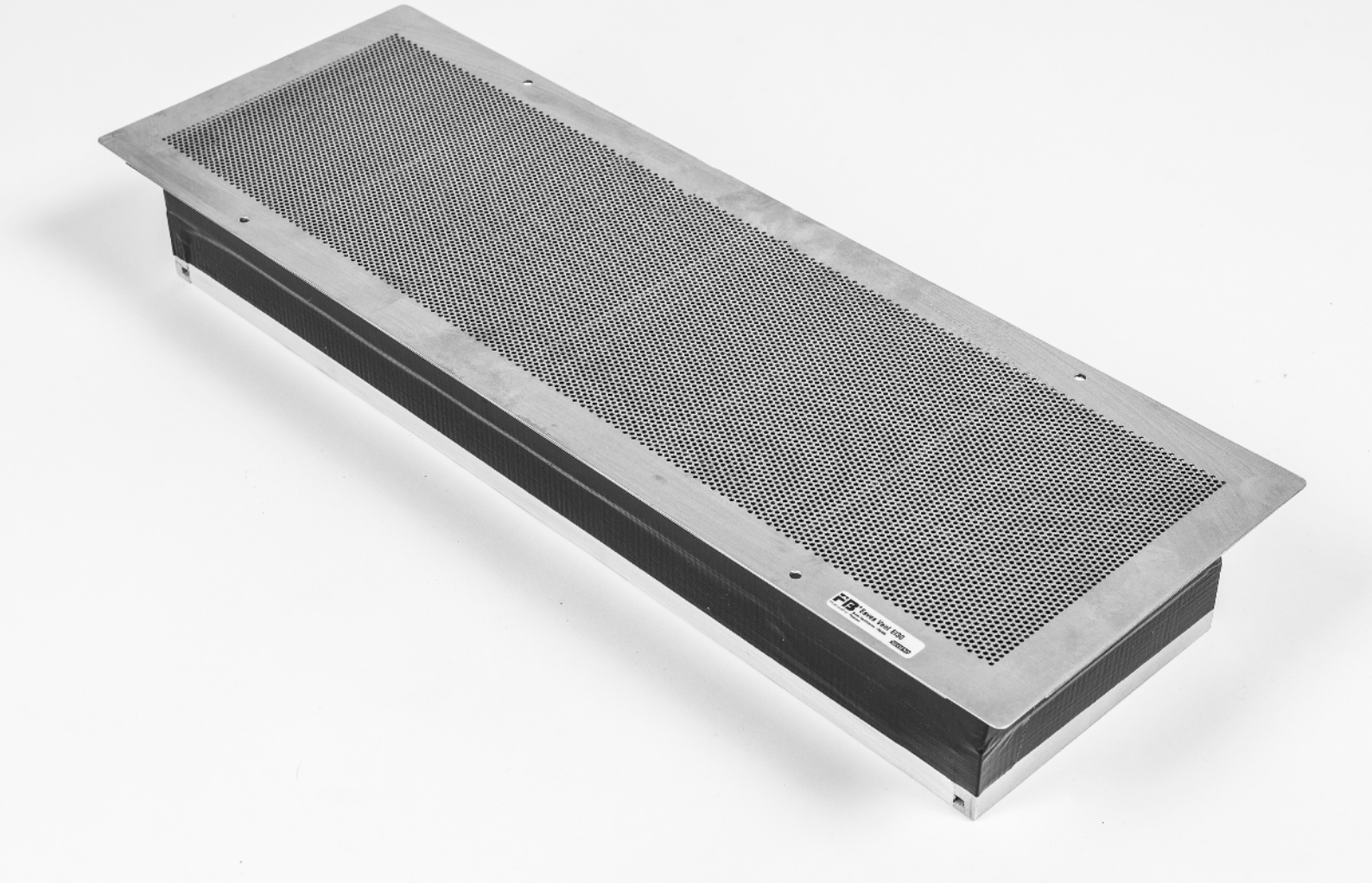
The **Façade Vent** is sold by several different window manufacturers. Please contact them for more information about sizes, colours, profiles, delivery times and prices.

Firebreather® Façade Vent:
- > Instant fire stop
- > Ember stop
- > Easy way to satisfy both the need for ventilating rooms and maintaining fire rating of the walls
- > Several different versions available through different manufacturers

Applications:
- > In fire rated walls where there is a conflict between venting and fire protection. The Firebreather® Façade vent gives you the opportunity to ventilate without compromising the fire rating of the wall.

Fire rating:
- > EI30 and EI60

Firebreather® Façade Vent



Firebreather® Eaves Vent

The principle of attic ventilation and venting through the eaves is widespread and has proven to be very effective to prevent moisture damage.

However, this principle has always been problematic during a fire because of fire spreading to the ceiling and the roof, and by flames breaking out through the windows and up through the open-air slots in the eaves. Fires that spread to cold ceilings often result in major material damage.

Firebreather® Eaves Vent is a simple and safe solution that both meets the need for venting through the eaves while effectively preventing the spread of fire. For the construction of new buildings, this means that one can achieve effective fire safety and still use the principle of cold roof and venting through eaves. For existing buildings with cold ceilings, sealing of the eaves and installing the **Firebreather® Eaves Vent** is a suitable measure to achieve effective fire safety without extensive building adaption.

Firebreather® Eaves Vent:
- > Ensures sufficient venting of the attic while preventing fire spread through the eaves
- > Instant fire stop
- > Ember stop
- > Fast and easy installation
- > Suitable for retrofitting in existing constructions

Applications:
- > Fire rated roof constructions

Dimensions:
- > LxWxH: 500mm x 150mm x 73mm

Fire rating:
- > EI30

Firebreather® Air Transfer Grilles

When a fire rated partition needs to be vented, the most used solution on the market today is ducting and mechanical fire dampers. Now it is possible to use our passive air transfer grilles through fire rated exterior and interior walls.

Instantly blocks spread of fire (EI30-EI60) - with no detection or activation required. This is a simple and inexpensive solution for venting across fire cells without compromising the construction's fire rating.

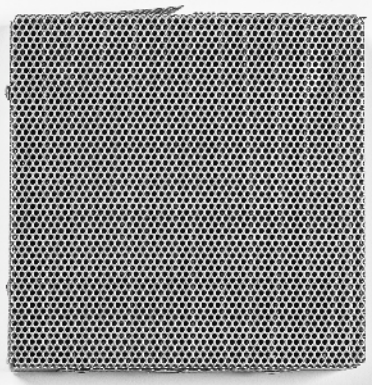
Firebreather® Air Transfer Grilles:
- > Instant fire stop
- > Ember stop
- > Easy installation
- > No detection or activation
- > No flame penetration or leakage of hot gases to the unexposed side

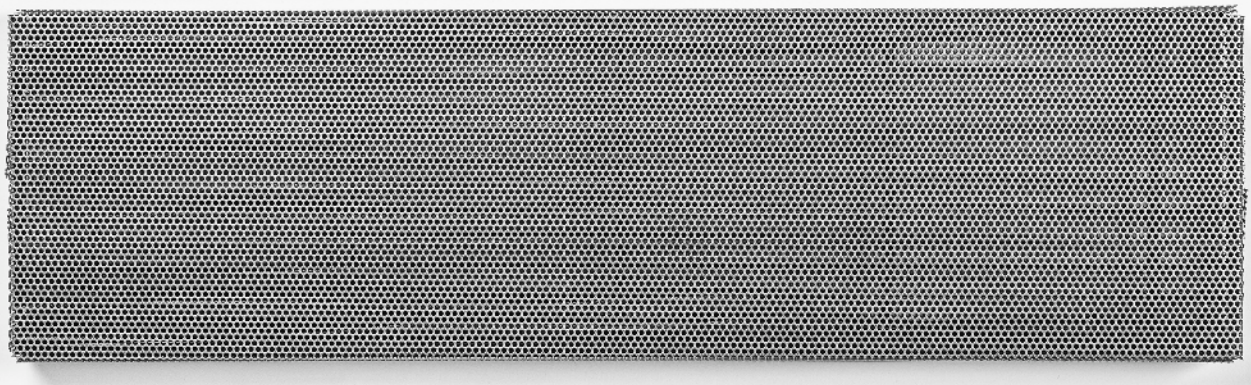
Applications:
- > Venting through exterior wall
- > Living rooms
- > Gabel walls
- > Booths
- > Venting of garage facilities
- > Indoor fire separators, between offices, technical rooms, etc.
- > In a fire partition on the ceiling for venting from the gable wall to the gable wall

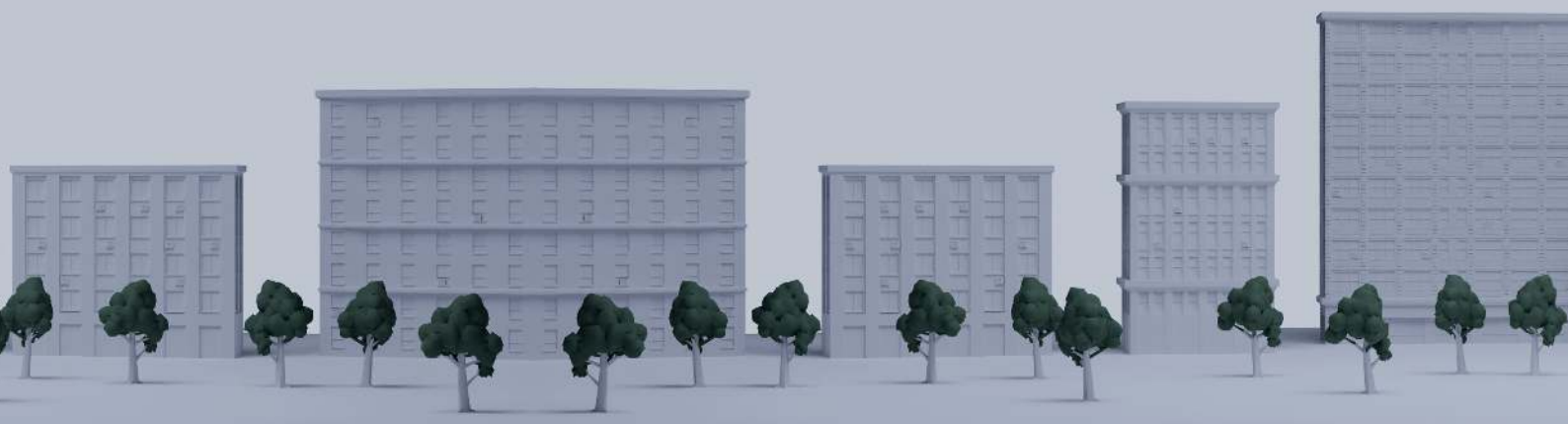
Dimensions:
- > Standard sizes: 150x150mm, 200x200mm, 500×100 mm, 500x150mm, 600x600mm
- > In addition, customized sizes from 100x100mm up to 600x600mm can be ordered on request

Fire rating:
- > EI30 and EI60.

Firebreather® Air Transfer Grilles







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