



# VENTS WITH **INSTANT FIRE STOP**



SECURO manufactures and sells passive air vents that ensure necessary ventilation while instantly blocking the spread of fire. The vents require no activation and have no detectors or moving parts.

The products have won numerous awards for its innovative technology. Our products and technology are internationally patented. Our organization includes fire engineers, product designers, sales department, administration and production with great expertise in their fields both nationally and internationally.

SECURO has a policy of transparency and all of our test results and approvals are openly available.

Our main objective is to be the leading manufacturer in our field and to provide the best possible service, so all our customers can feel safe with our solutions.

We are established with sales partners in several European countries and are working on establishing in a number of other countries.

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# THE FIRE PROTECTIVE ENVELOPE AND FIRE SPREAD



## OUTSIDE FIRE SPREAD

Outside spread of fire caused by embers and hot particles flying through air is a major problem and accounts for more than 50% of all external fire spread.

Where it was previously mostly focused on fire spread between buildings through the radiant heat, we are now also more aware of the fire spread from embers and hot particles carried in the air.

The hot particles falls down and ignite flammable materials or ignite unburned combustion gases. The biggest problem with spread of outdoor fires is the combination of sparks and wind that causes fire to go into the house through cavities and weaknesses in the construction.

This kind of fire spread represents the greatest risk of a major fire spread because it spread quickly over large areas and is highly unpredictable. In wildfires embers can be blown far ahead of the fire front, and in extreme conditions start spot fires several kilometers away.

## PASSIVE FIRE PROTECTION

Passive fire protection is vital to the stability and integrity of a building or structure in case of fire. Such protection is either provided by the materials from which the building is constructed, or is added to the construction materials to enhance their fire resistance.

It is vital that these protection measures are correctly designed, specified and installed if the building is to behave as expected in case of a fire. By their nature the vents are 'passive' until there is a fire and only then will their fire performance be activated.

## FIRE PROTECTIVE ENVELOPE

The fire protective envelope is the outer layer of the construction. Openings and cavities in roof, eaves and gables and cladding are critical areas for the spread of fire through the fire protective envelope.

These areas are important for adequate venting into the construction, but must at the same time be protected to prevent fire spread. The solution to this is to secure these weak points to achieve a closed fire protective envelope to delay or stop the spread of fire.

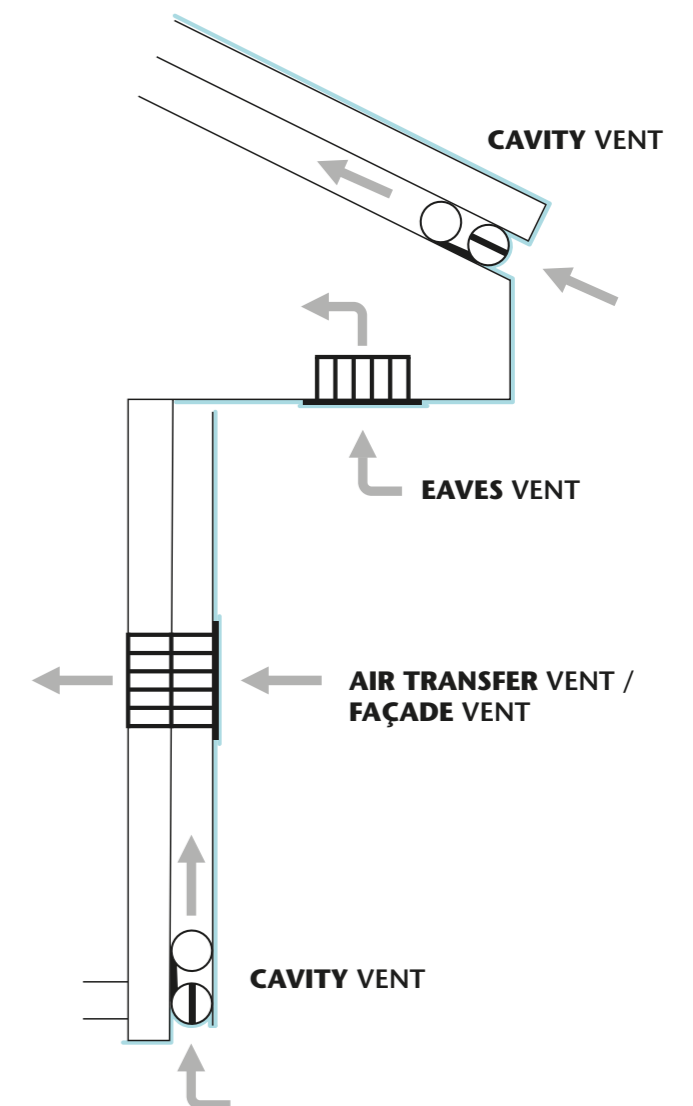
Our passive air vents offer a solution as they are designed to prevent sparks and embers from entering the construction through openings and weak spots and at the same time maintain adequate ventilation of the construction when there is no fire.

With correct fire protection houses with wooden façade can resist an outdoor fire for 30-60 minutes, which is invaluable in this context.

## FIRE IN CAVITIES

Fire in cavities spreads very quickly with a burning rate of 2-8 m/min. Fire behind ventilated cladding can spread 5-10 times as fast as on the outside of the cladding.

This is because the different density between hot and cold air makes the hot gases raise up in the cavity if there is an opening at the top and bottom, and even if there is only non-combustible material in the cavity, the gases will ignite at the top when they receive air supply. Fire in cavities can also be very difficult to detect and extinguish.



# VULNERABLE CONSTRUCTIONS

Securo aim to secure all openings and cavities in the construction to make a completely closed fire protective envelope.

## VENTILATED FAÇADE

The main function of ventilated cladding is to protect the outer wall against climate stresses and mechanical damage in which the outer cladding acts as rain screen and dense layer inside acts as a wind barrier. It is important to separate the fire protective envelope from the climate envelope, which includes both layers. The cladding on the outside serves as a part of the fire protective envelope and the thickness of the cladding determines the fire resistance. In most cases a continuous air gap with openings in the top and bottom is used to get sufficient amount of air through the structure. This air gap makes a space in the construction that is vulnerable for intrusion of flames and sparks and fire can spread rapidly.

Another important point in this context is that surfaces inside cavities in wall constructions is to be considered similarly as the exterior surface and have the same fire safety properties. This means that the same requirement to fireproof the outer wall will apply in the cavity, and the inside of the

cavity must be treated with fire retardant impregnation. The upper side of the cavity must also be secured. Another option is to make a technical substitution: Our Cavity Vent can for instance act as a replacement for fire retardant impregnation or other customizations on the inside.

## FAÇADE VENT

Walkways in apartment buildings are critical area when it comes to fire protection. In apartment buildings where walkways are defined as an escape route, a fireproof outer wall towards the apartment is often a requirement. This means that you must have fire-rated windows that cannot be opened in normal operating mode. At the same time, if you have a room meant for lasting stay behind a fireproof wall there is often a demand to have at least one door or openable window for ventilation. This problem can be solved by using façade vents which can be opened for ventilation, but at the same time meets the fire resistance requirement.

## ROOF AND EAVE

Roofs and attics are usually ventilated to avoid condensation problems and rotting in the roof structure. This make the roof structure a very vulnerable area for intrusion of flames and sparks. Important areas to secure are vented eaves and roof sealings.

Spread of fire from a window or an opening in the outer wall to the façade or combustible roof, is a common cause of rapid fire spread. The same applies to the spread of fire from underlying window to eaves and further on to cold attic which is a separate fire cell. Venting must be arranged elsewhere, or fire resistance air vents can be used.

## VENTS

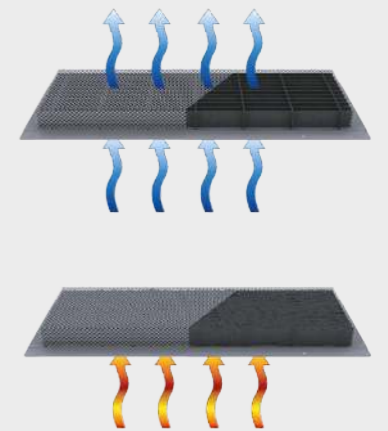
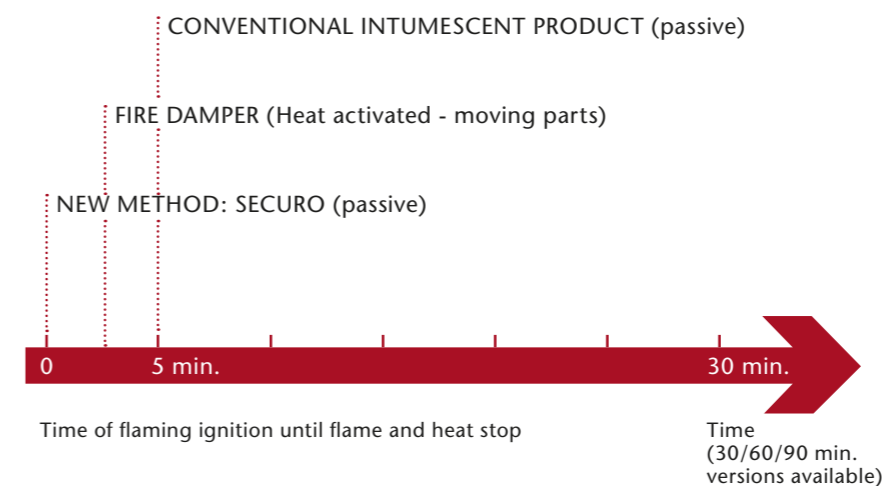
Venting through outer walls such as in ventilation of attic from gable wall to gable wall creates a risk of sparks penetrating through the vents, igniting fire on the inside.

# SECURO FIREBREATHER TECHNOLOGY

Firebreather technology (FB) is a unique concept for the development of passive ventilation grilles which has the exceptional characteristic that they block the spread of flames, heat and embers with immediate effect in the case of fire.

The technology is patented and is the first that enables an instant and time-uninterrupted fire classified partition in a ventilated item without moving parts, sensors, cabling or activation. The result of the technology is achieved by combining several well known principles for preventing the spread of fire. These principles will not separately work satisfactorily, but when combined they work instant and up to several hours. The unique with these vents is the combination of a flame stopper element which acts from

the first millisecond, a heat-absorbing and heat-accumulating element that extends the flamestop effect for up to five minutes, a thermal breakage which prevents the vent from becoming too hot on the protected side so that something can ignite and a grid off intumescent that will close the vent completely for the spread of fire within a few minutes. The combination of these principles means that the vent will prevent fire from spreading from the first millisecond and up to several hours.



## CLASSIFICATION

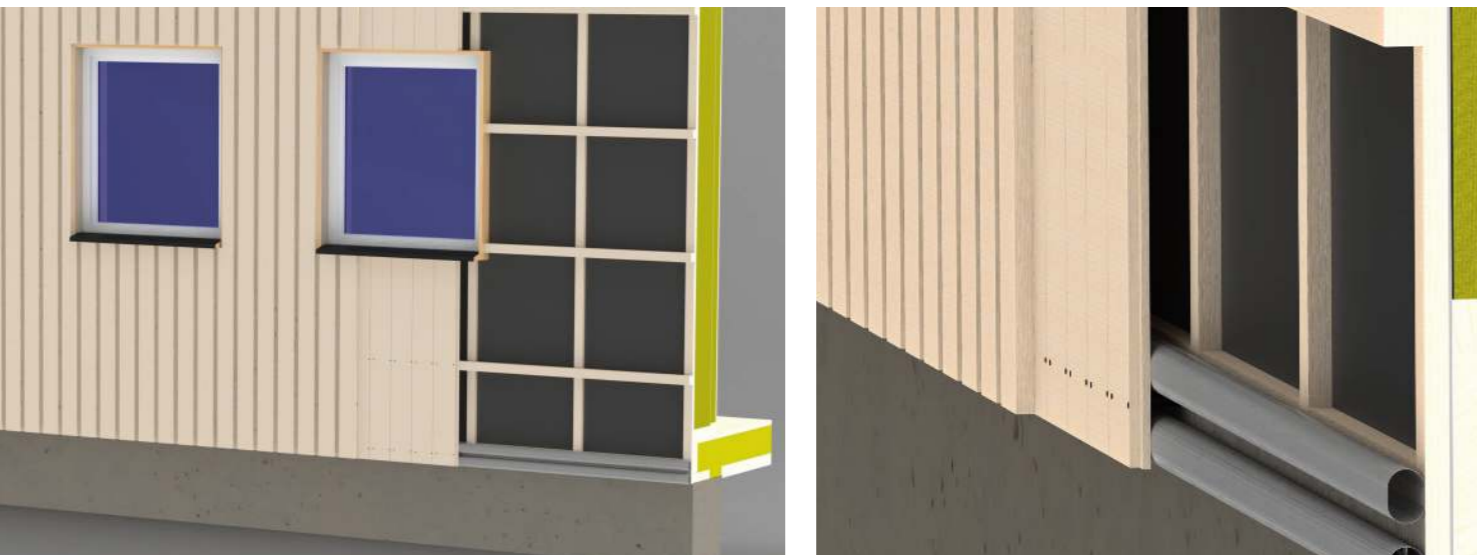
Today, this is the only passive product for this type of use in the market which has a EI classification and instant fire stop.

- E** = integrity
- I** = isolation

The integrity E is the ability of a separating element of building construction, when exposed to fire on one side, to prevent the passage of flames and hot gases to the unexposed side.

The insulation I is the ability of a separating element of building construction when exposed to fire on one side, to restrict the temperature rise of the unexposed side to no more than 140°C in average, and never above 180°C at a certain point.

Our products satisfy both of these requirements by not letting flames penetrate, and at the same time keeping the temperature on the unexposed side low enough to prevent combustible materials to ignite.



## CAVITY VENT

Fires that spread behind the façade cladding, represent a major challenge for the fire brigade; since it is difficult to identify where it is burning and often is difficult to get access to. With the FB Cavity Vent, Securo has developed a new set of applications specially designed for establishing vented fire barriers in voids or cavities behind the cladding on façades or inside fire rated walls and floors. The vents provide sufficient ventilation of construction and at the same time instantly prevent fire from spreading.

The vent does not seal the cavity when it is installed, but permits necessary venting into the construction. In case of fire, the product will instantly seal the gaps behind the cladding and prevent fire spread.

The vent is also suitable for use in eaves to protect from fire spread into the attic. This will give a continuous air gap similar to the normal use of air gaps with insect mesh.



## AIR TRANSFER VENT

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

No detection or activation required – blocks instantly spread of fire (30/60 minutes). An easy and affordable solution for venting through fire rated partitions without compromising the constructions fire resistance rating.



### FB CAVITY VENT

- Solves the need for fireproof ventilation in an easy and affordable way
- Ensures the necessary ventilation
- Blocks instant spread of fire in cavities

#### Applications:

- Behind ventilated façade cladding
- Vents in the roof/attic
- Other cavities in the structure
- Floor separates in multi storey buildings

#### The solution combines:

- Necessary ventilation
- Fire rated construction
- Prevents mice and pests from entering the construction

#### Dimensions:

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

#### Fire rating:

EI30, EI60 and EI90

### FB AIR TRANSFER VENT

#### Applications:

- Ventilation through exterior wall
- Habitable rooms
- Gable wall
- Storage room
- Ventilation of garages
- Interior fire rated partitions, between offices, technical rooms etc.
- Venting through outer walls such as venting of attic from gable wall to gable wall

#### Dimensions:

Standard sizes: 150x150 mm, 200x200 mm, 500x100 mm, 500x150 mm and 600x600 mm.

All other sizes between 100x100 mm and up to 600x600mm can be manufactured.

#### Fire resistance:

EI60





## EAVES VENT

The principle of cold attic and venting through eaves is common. The principle ensures sufficient venting of the roof construction and prevents moisture damage while keeping the surface of the roof cold enough to avoid unwanted consequential damage from snow melting and ice formation at the eaves and gutters. But in case of fire, there is a problem with this principal; when flames breaks out through windows they will spread up to the roof through the

open air gaps in the eave. Fires that spread into cold attics often result in major material damages.

With the FB Eave Vent there is an easy and reliable solution that ensures both the need for venting and stopping fire spread. The vent prevents fire spread in the classified period 30 minutes (EI30) and satisfies hence the recommendations on fire cell limiting design of the eave.

## FAÇADE VENT

In fire rated walls there is often a conflict between venting and fire protection. You want to have the opportunity to ventilate through windows or vents. For example, this conflict often occurs in apartment buildings with walkways.

have openings where the fire can spread. The FB Façade Vent solves this problem by offering both venting and fire rating. This is the best and affordable method to fulfill the requirements for the fire rated construction. The FB Façade Vent is sold by several major window producers.

Walkways are often the escape routes and as a result have to be of fire limiting structures, and cannot



### FB EAVES VENT

- Firesafe solution for ventilation of attic and roof
- Ensures sufficient venting of the attic while preventing fire spread through eaves.

**Applications:**  
For use in fire rated constructions

**Dimensions:**  
LxWxH: 495mm x 145mm x 73mm

**Fire rating:**  
EI30



### FB FAÇADE VENT

In fire rated walls there is often a conflict between venting and fire protection. You want to have the opportunity to ventilate through windows or air vents. A simple solution to this problem is to use a fireproof FB Façade Vent.

- Applications:**
- For venting through fire rated walls, for instance walls facing walkways.

**Fire rating:**  
EI30 and EI60

- Producers:**
- Natre
  - Lian Trevare
  - Nordan
  - Norgesvinduet
  - Nordvestvinduet
  - Magnor
  - Viking





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