FB Cavity Barrier

Securo AS **28.10.2020** Version 1.7

Fire rated FB Cavity Barrier

Fires spreading through cavities of a construction, for example behind the façade cladding, represent a major risk of rapid fire propagation. The access and the extinguishing of a fire that has spread is a big challenge for the fire brigade.

With FB Cavity Barrier, the cavity can be compartmented to limit fire spread.

Like other Firebreather products, the FB Cavity Barrier combines the need for adequate venting behind the cladding with the need to limit the spread of fire.

FB Cavity Barrier is also well suited for attic venting. In that regard, it is mounted in the air gap at the eaves level.

In the case of a fire, the cavity barrier will instantly seal the cavity and prevent fire spread. It is tested according to sudden direct flame impingement ASTM 2912:13.

FB Cavity Barrier is available in fire classes EI30, EI60 and EI90.

Product data

Available in 113 cm and 53 cm lengths.

Depth x Height
23(+3) x 112 (±7)mm
28/30(+3) x 87 (±7)mm
36(+4) x 112 (±7)mm
50(+4) x 150 (±7)mm

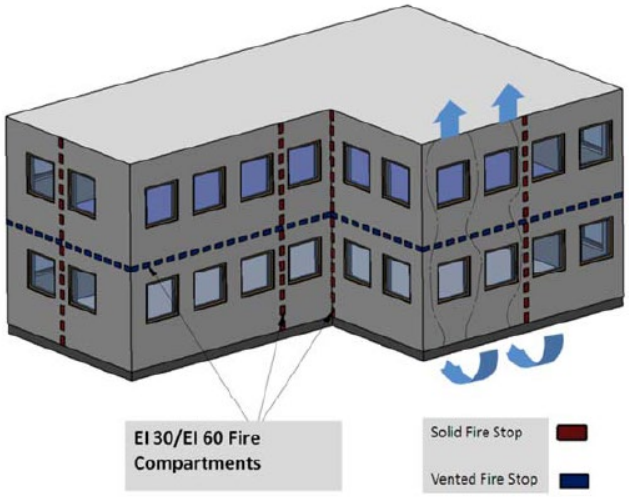
Fire resistance rating:
EI30, EI60 og EI90

Tested according to:
NS-EN 1366-4:2006
ASTM 2912:13

Product Documentation from RISE Fire Research AS:
RISEFR 010-0238

AREA OF APPLICATION

The FB Cavity barrier is usually mounted horizontally behind the facade cladding. Vertically solid fire stops can be used. Together this gives fire compartments in the construction.



If solid or vented fire stops are not installed in the cavities, the fires can spread rapidly. Tests have shown that the fire can spread as fast as a hydrocarbon fire, with a speed of 2-8m/min vertically and horizontally. Such hidden fires are very complicated to identify and get access to and can be a major challenge for the fire brigade. They can be devastating if the fire reaches the eaves, attics, and roof constructions.

The fire-resistant rating of the surrounding materials is crucial and there is no purpose in having a cavity barrier of higher fire resistance than the rest of the facade.

Technical specifications

FB Cavity Barrier consists of stainless steel (AISI 3044) woven mesh and an intumescent material that expands when exposed to heat.

Effective ventilation area

Vented cladding can be designed in many ways and with different types of material. The main principle is the same: The cladding is separated from the back wall (wind stop) with a vented and drained air gap.

Recommendations from the book Brandsäkra Trähus 2. edition and SINTEF Byggforsk handbook 51 “Fleretasjes trehus” describe that the venting area of the attic should be 1/300 of the attics floor area. This venting area is the total venting area including outlet air.

Dimension	m^2
23mm	0,0115
28mm	0,014
36mm	0,018

Table 1 Total effective venting area for FB Cavity Barrier

Article Numbers

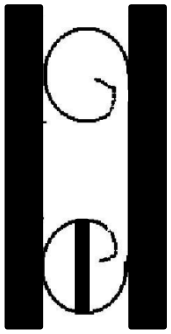
FBH		
Dimension	Fire Rating	Article no.
23mm – 113 cm length	EI30	FBH-23-1130-30
23mm – 53 cm length	EI30	FBH-23-530-30
23mm – 113 cm length	EI60	FBH-23-1130-60
23mm – 53 cm length	EI60	FBH-23-530-60
23mm – 113 cm length	EI90	FBH-23-1130-90
23mm – 53 cm length	EI90	FBH-23-530-90
28mm – 113cm length	EI30	FBH-28-1130-30
28mm – 53 cm length	EI30	FBH-28-530-30
28mm – 113 cm length	EI60	FBH-28-1130-60
28mm – 53 cm length	EI60	FBH-28-530-60
28mm – 113 cm length	EI90	FBH-28-1130-90
28mm – 53 cm length	EI90	FBH-28-530-90
36mm – 113 cm length	EI30	FBH-36-1130-30
36mm – 53 cm length	EI30	FBH-36-530-30
36mm – 113 cm length	EI60	FBH-36-1130-60
36mm – 53 cm length	EI60	FBH-36-530-60
36mm – 113 cm length	EI90	FBH-36-1130-90
36mm – 53 cm length	EI90	FBH-36-530-90
50 mm – 113 cm length	EI60	FBH-50-1130-60
50 mm – 53 cm length	EI60	FBH-50-530-60
50mm – 113 cm length	EI90	FBH-50-1130-90
50mm – 53 cm length	EI90	FBH-50-530-90

Mounting

The FB Cavity Barrier must be handled with caution. Avoid exposing the products to impact or other external force that can cause the cavity barrier to bend, buckle or create damages at its ends. This may weaken the product's performance. Do not take the product out of the packaging before installing. The product should be stored under roof and must not be exposed to temperatures outside the range – 50°C to 100°C.

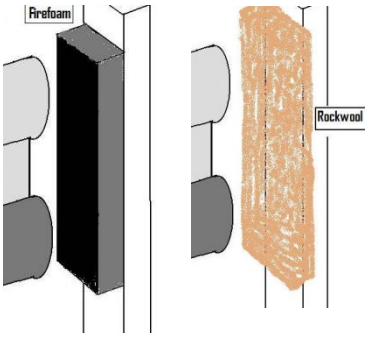
The FB Cavity Barrier is mounted with three stainless steel screws, 4.5x35mm, per 1130 mm. The product should be placed with the tube containing the intumescent strip facing downwards, and with the intumescent strip centered vertically in the tube to allow air flow. Any gaps between the FB Cavity Barrier and the abutting surface must be less than 2 mm. Cutting of lengths should be done using a fixed grinder, or circular saw to avoid that heat activates the intumescent strip. The blade of the grinder must be of stainless steel.

It is crucial that the cavity barrier is mounted with solid and stable construction on both sides, to be able to prevent fire from spreading. See picture below.



Mounting – towards studs

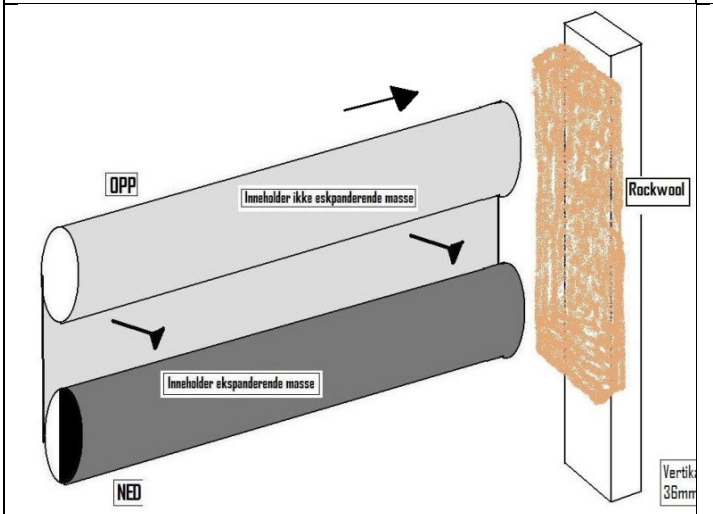
In the gap between the FB Cavity Barrier and the stud, Rockwool or FireFoam should be used. Gaps between the cavity barrier itself and outer boards in over-and underboard systems should be sealed with Rockwool or Firefoam. Contact surfaces can be timber, wooden panel, gypsum, or concrete. The fire resistance rating of the cavity barrier should be the same or higher than the cladding.



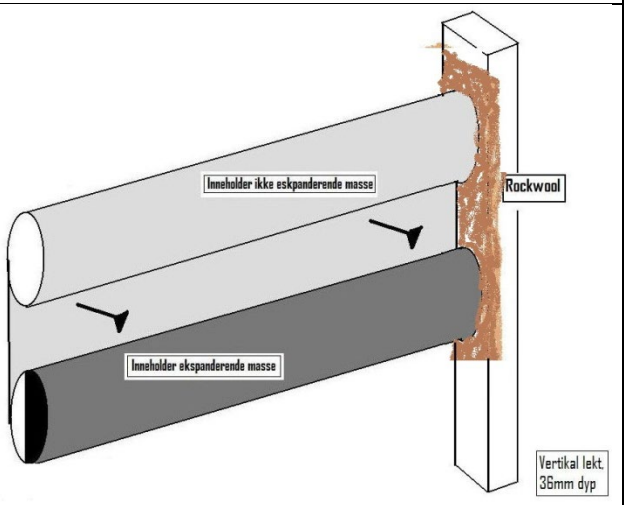
Mounting – Cavity Barrier (53 cm), between studs

If mounted between studs/battens, ensure the cavity barriers do not become deformed during the mounting. Hence, the product should be mounted with typically a Rockwool plate towards a stud (picture 1). Then place a new piece of Rockwool plate (picture 3) on the other end of the cavity barrier before a new stud is mounted, creating a light pressure towards the plates (picture 4).

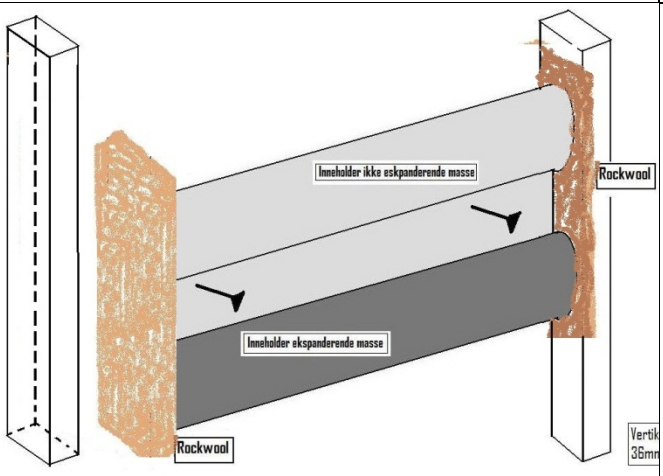
1.



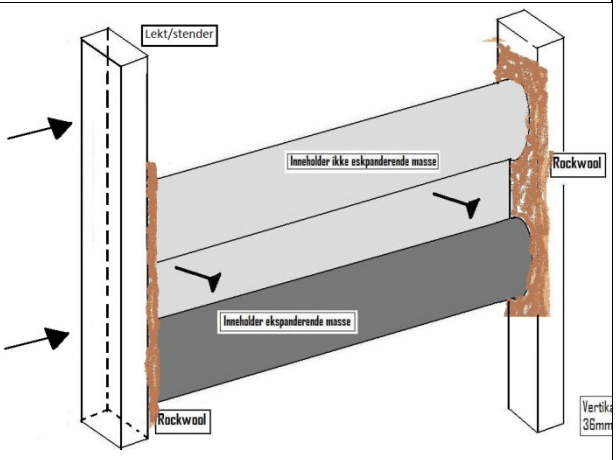
2.



3.

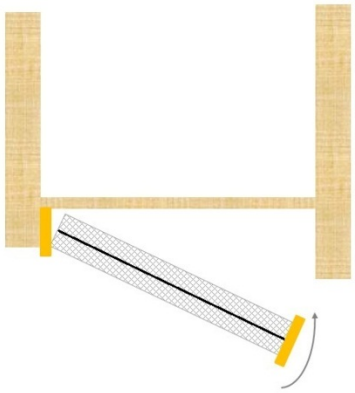
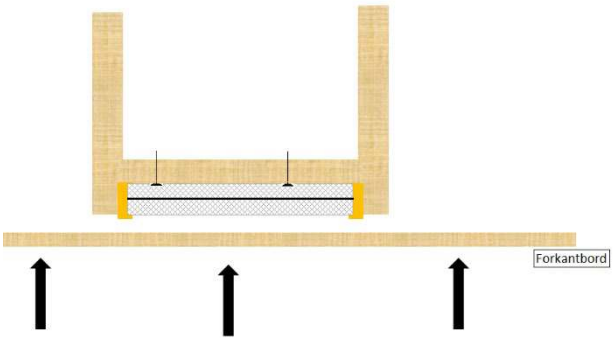
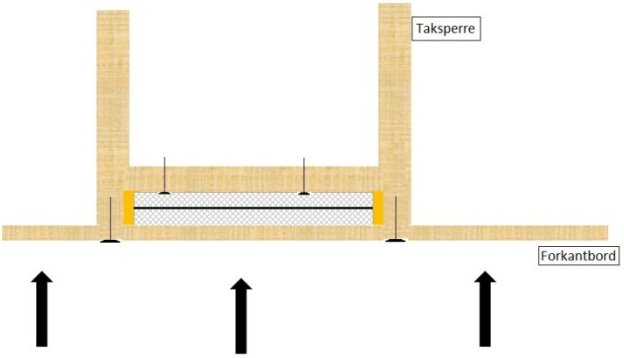


4.



Mounting between existing studs

Viewed from above:

1.	2.
	
3.	4.
	

The images below show mounting behind vertical cladding.

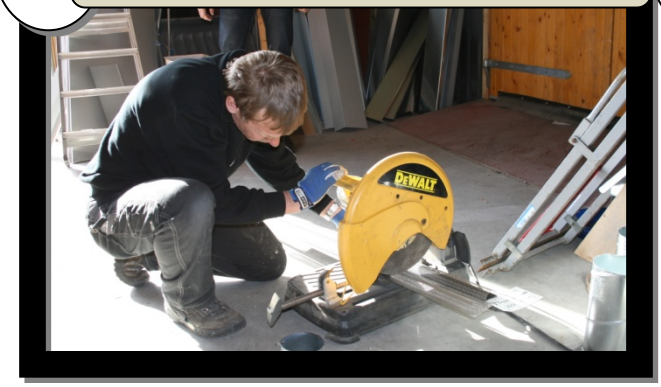
1 Wall ready for mounting at sill.

2 FB Cavity Barrier fixed with 3 screws per 113cm

3 Mounted edge to edge. Corners are sealed with Rockwool.

4 A minimum of 50mm from the studding above or below.

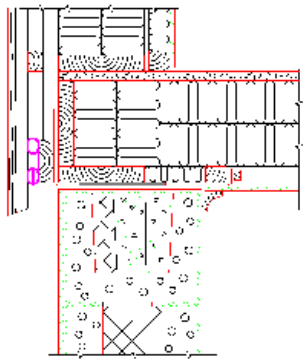
5 To adjust the length of the barrier you can use an angle grinder or circular saw with metal cutting blade



6 Gap sealed with Rockwool or Firefoam

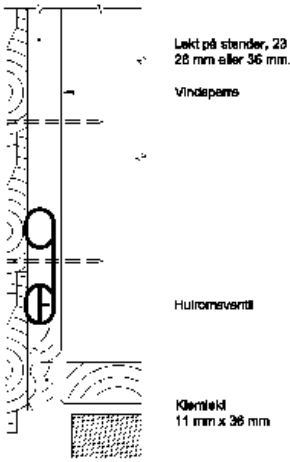
Mounting examples

Vertical cladding



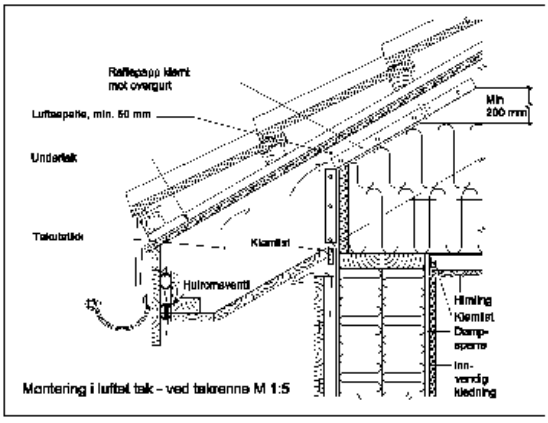
Montering i utlektet vertikal kledning M 1:5

Horizontal cladding



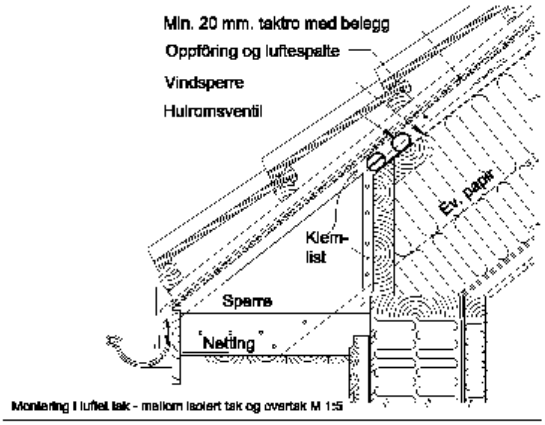
Montering i utlektet horisontal kledning – M 1:2

In the eave at the gutter



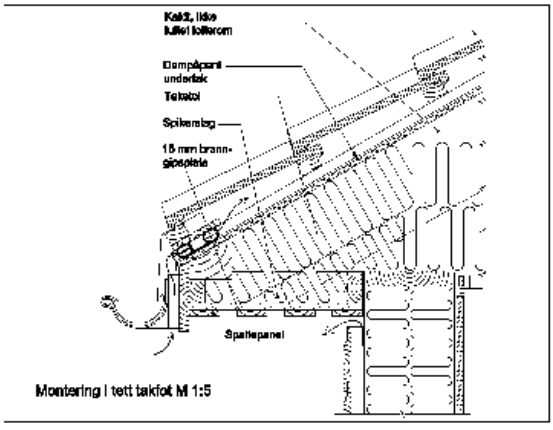
Montering i luftet tak – ved takrenne M 1:5

Between isolated and vented roof



Montering i luftet tak – mellom isolert tak og overtak M 1:5

Isolated eave



Montering i tett takfot M 1:5

Conditions for use

- Do not buckle or bend
- The tube containing intumescent must be at bottom
- When mounted continuously, there should be no gaps in the joints
- Make sure that the intumescent strip is parallel with the contact surfaces
- Make sure that the cavity barrier is lightly compressed between the contact surfaces so that there are no gaps for flames to pass through

Maintenance

FB Cavity Barrier contains no moving parts and requires no special maintenance to ensure the function in case of fire.

Environment

Waste should be recycled. FB Cavity barriers are made of stainless steel and can be recycled. This recycling makes the Cavity barrier an environmentally friendly alternative. The intumescent material can be disposed as residual waste.

References

Sintef Byggforsk details: *520.308 Exterior walls and roofs of wooden houses with 30 minutes fire resistance.*

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