

# VFB 60/60

## VFB 60/60 Ventilated Fire Barrier

Tenmat's VFB 60/60 Ventilated Fire Barriers are "open state" cavity fire barriers designed to offer fire resistance performance within external wall cavities that require permanent (open-state) ventilation in non-fire conditions.

## Product Description

Tenmat's VFB 60/60 Ventilated Fire Barriers are 'open state' cavity fire barriers for ventilated cavities of up to 450mm. Each VFB 60/60 consists of a specially formulated fire rated stone mineral wool section with an integral high expansion intumescent seal fixed to the leading edge.

The VFB 60/60 then leaves a maximum 25mm air gap to allow for drainage and maintain ventilation in normal use. In a fire situation the intumescent seal rapidly expands to seal off the air gap and prevent vertical fire spread within the external wall.

The products have undergone extensive fire testing following the principles of BS EN1363-1 and in accordance with ASFP TGD19 (Fire Resistance Test for 'Open-State' Cavity Barriers).

The VFB 60/60s are mechanically fixed horizontally within ventilated cavities behind the external wall substrate following the fire compartment line. The VFB 60/60s are used horizontally and can be installed in conjunction with Tenmat NVFB Non-Ventilated Fire Barriers which provide vertical fire separation along fire compartment party wall lines.

## Product Details

- CCPI Verified
- 3rd Party Certification - IFC Certification
- Typical Fire Ratings of minimum 60 Minutes Integrity and Insulation
- Higher Fire Ratings available dependent on application
- Fire Tested on Steel Frame Systems (SFS)
- Maintains a 25mm air gap
- Up to 450mm cavities tested
- Standard thickness of 75mm
- Durability and Age Tested
- Fixing brackets included as standard

## Sizes

Thickness (Total Cavity less 25mm Air Gap) x 75mm x 1000mm



## Fire Test Evidence

### Fire Test performance to BS EN 1363-1 and to the principles of ASFP TGD19

| Inner Leaf Substrate Type (facing cavity) with Appropriate minutes (EI) Fire Rating | Outer leaf Substrate Type (facing cavity) With Appropriate Fire Resistance | Orientation | Insulation Type Within Cavity (interrupted) | Maximum Cavity Width (in mm) | Maximum Open State Air Gap (In mm) | Product Dimensions (thickness x height x length in mm) | Product Fire Resistance Rating |            |
|---|--|-------------|---|------------------------------|------------------------------------|--|--------------------------------|------------|
|   |  |             |   |                              |                                    |  | Integrity                      | Insulation |
| Autoclaved Aerated Concrete   | Autoclaved Aerated Concrete  | Horizontal  | None  | 40                           | 25                                 | 15 x 75 x 1,000  | 180                            | 180        |
| 12.5mm Weather Defence Board on SFS   | Autoclaved Aerated Concrete  | Horizontal  | 25mm Phenolic                               | 60                           | 25                                 | 35 x 75 x 1,000  | 120                            | 120        |
| Autoclaved Aerated Concrete   | 100mm thick 100kg/m <sup>3</sup> stone wool (Rockwool)                     | Horizontal  | 100mm PIR                                   | 300                          | 25                                 | 275 x 75 x 1,000                                       | 120                            | 120        |
| Autoclaved Aerated Concrete   | Autoclaved Aerated Concrete  | Horizontal  | 100mm PIR                                   | 300                          | 25                                 | 275 x 75 x 1,000                                       | 60                             | 60         |
| 10mm Cement Particle Board  | Autoclaved Aerated Concrete  | Horizontal  | 100mm PIR                                   | 450                          | 25                                 | 425 x 75 x 1,000                                       | 60                             | 60         |

#### 3rd Party Certification:

IFC Certification - Certificate No. IFCC 1752

Fire Test Evidence:

Field of Application Report - PAR22672/03

The types of insulation tested do not infer generic approval for these insulation products and approval should be sought from the insulation manufacturers depending upon the particular type of construction being built. Insulation is tested interrupted to prevent the possibility of fire bypassing behind the cavity barrier.

The ASFP-TGD19 test standard allows for insulation to be replaced with insulation that is listed as better using the hierarchy as below and must be installed interrupted. Notes on insulation from TGD19:2017-13.3 Insulation. For interrupted insulation the following hierarchy is used: Best- stone wool, glass wool, phenolic, PIR, PUR, EPS - Worst

## Technical Information

|                                    |  |
|------------------------------------|--|
| Colour                             | Black  |
| Finish                             | Polythene Wrap   |
| Cuttability                        | Can be cut to length   |
| Storage                            | Dry, ambient   |
| Transportation Storage Temperature | -20°C to +70°C   |
| Durability                         | Type X intended for use in conditions exposed to weather (UV, rain, frost) |
| Fungal Resistance                  | Protected by polythene   |
| Smoke/Halogen Content              | Low Smoke / Zero Halogen   |
| Minimum Total Working Life (Years) | Based on typical climatic conditions                                       |
|                                    | UK 60 years  |
|                                    | Australia 45 years   |
|                                    | France 60 years  |
|                                    | New Zealand 60 years   |
|                                    | Germany 60 years   |
|                                    | Hong Kong 40 years   |
|                                    | The Netherlands 60 years   |
| Dimensional Tolerances             | Thickness +10/-0mm    Width +5/-0mm    Length +0/-5mm                      |

Working life, durability, halogen content and smoke emission data refers to the active intumescent component.



## General Design & Installation Considerations

Maximum free air gap for this cavity barrier is 25mm, the space in front of the intumescent strip on the face of the cavity barrier to the rear of the external wall surface.

Open state cavity barriers should be installed in a continuous run, (with the exception of abutting up to full fill vertical cavity barriers). Where this is not possible, details should be agreed with the projects principal designer and or fire engineer.

Horizontal cavity barriers should be installed adjacent and tightly abutted to any vertical cavity barriers, the vertical cavity barriers should be installed first.

Cavity barriers may be cut to length as required, adjacent lengths must be tightly abutted together. The intumescent face of the cavity barrier should be unrestricted and free to expand in a fire situation, fully filling the cavity.

An identification label is attached to the intumescent face of the cavity barrier, ensure this faces out into the open cavity. Also ensure the label is visible and legible and reads the right way up.

If the identification label is not legible please contact Tenmat, the label is important in terms of identifying the product in the future, for example during fire risk assessments or fire safety inspections.

Cavity barrier fixing brackets, both multi purpose, (MP bracket) or high performance (HP bracket) must not penetrate through the face of the cavity barrier. Screws for direct fixing and fixings to secure brackets are not supplied by Tenmat.

The brackets used to fix the horizontal cavity barrier must be installed with the spike inserted centrally (horizontally) to the rock mineral wool section of the cavity barrier with the bracket fixed above and not below the cavity barrier.

The use of tape is not required over the joints between the lengths of cavity barrier, and if used should not be applied over the face of intumescent material.

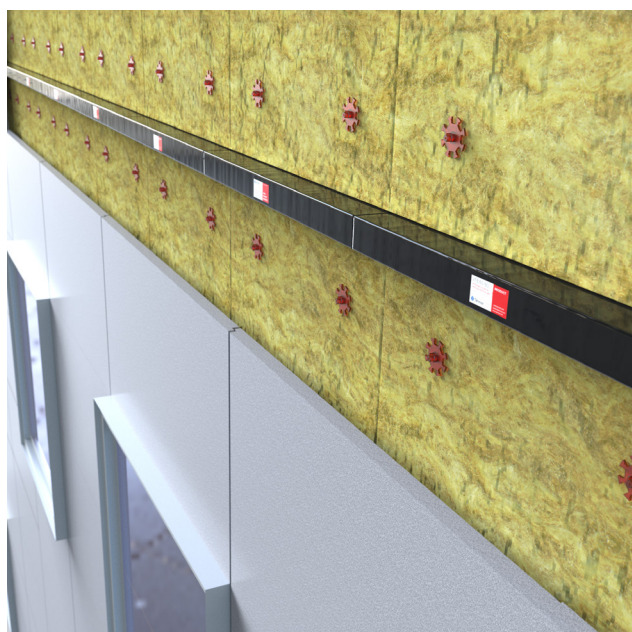
The cavity barrier must be installed following the installation methods described below. The cavity barrier must not be penetrated by any other mechanical or electrical services.

## Fitting Instructions

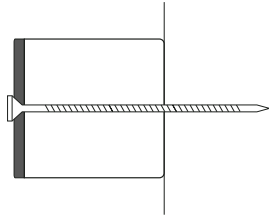
### VFB 60/60

#### Fire Barrier Support Details

| Cavity Size (mm) | Product Width (mm) | Fitting Option Number | Barrier Support Type | No. of support (brackets) fixings per metre | Maximum (brackets) Centres (mm) |
|------------------|--------------------|-----------------------|----------------------|---|---------------------------------|
| 40-100           | 15-75              | 1                     | Screw                | NA  | NA                              |
| 101-115          | 76-90              | 2                     | MP Bracket           | 2   | 500                             |
| 116-240          | 91-215             | 3                     | MP Bracket           | 2   | 500                             |
| 241-300          | 216-275            | 4                     | MP Bracket           | 3   | 350                             |
| 301-450          | 276-425            | 5                     | HP Bracket           | 2   | 500                             |



## Option 1



VFB 60/60- Product width across cavity 16mm up to 75mm wide, directly faced fixed.

Use stainless steel countersunk head screws, with a maximum head diameter of 16mm and with a length suitable for the size of cavity barrier and sufficient fixing depth into the substrate.

Fixings must have an appropriate fixing depth for the substrate (with a minimum of 50mm for masonry fixings and minimum 25mm for timber unless otherwise specified by the fixing manufacturers guidance for their fixing type).

Ensure that the countersunk screw head does not fully penetrate the face of the cavity barrier, the screw head should sit flush or slightly proud.

Care should be taken not to over tighten as this may affect the performance of the intumescent seal.



Position the first screw fixing through the centre line of the face of the cavity barrier at a maximum 125mm from one end, continue to face fix through at maximum 250mm centres (4 screws per linear meter), ensuring that the final fixing is a maximum 125mm from the end of the cavity barrier. This will ensure that face fixings are positioned at 250mm centres across the continuous run of cavity barrier.

Where sections of cavity barrier are less than 1 linear meter in length, ensure that face fixings are positioned at a maximum 125mm from each end with additional fixing being positioned at maximum 250mm centres between the end fixings.

For cut sections of cavity barrier less than or equal to 250mm in length only one fixing is required.

### Slitting

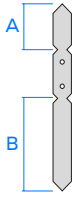
If the intumescent face on the front face of the cavity barrier is slit to allow fitting around vertical rails, it must be ensured that every slit section of cavity barrier has a fixing through the face of the intumescent material and into the back substrate.

Vertical slits must be kept as small as practicable, ensuring no gaps remain and the depth of slit is to minimum the depth of the rail and maximum 10mm deeper than the rail.

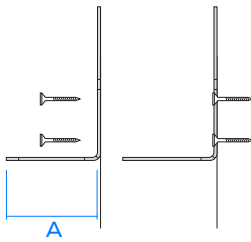
Additional fixings at maximum 125mm to either side of each cut, and ensure that the next fixings are no more than 250mm centres from the additional fixing applied.

## Option 2

VFB 60/60 – Product width across cavity from 76mm up to 90mm wide, fixed using 2 multi purpose (MP) 65mm brackets (per linear metre).



MP brackets are supplied with 2 fixing spikes, one spike is 65mm long (A), the other is 160mm long (B), with a central pre drilled section for securing the bracket to the substrate.



For cavity barriers 76mm-90mm wide (across cavity) use 2 MP brackets and the 65mm (A) long spike.

To secure the bracket use nom. 5mm Ø stainless steel screws/fixings, with a maximum head diameter of 13mm and with a length and type suitable for the substrate.

Ensure that the screw head sits as flush as possible with the substrate.

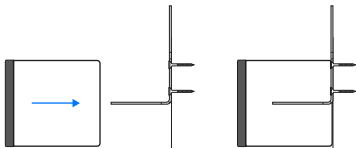
Fix through both of the fixing holes.

Fixings must have an appropriate fixing depth for the substrate (with a minimum of 50mm for masonry and minimum 25mm for timber unless otherwise specified by the fixing manufacturers guidance for their fixing type).



Fix 2 number MP brackets, per linear meter, to the substrate at maximum 250mm from the end of the cavity barrier, with a maximum spacing between brackets of 500mm.

Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 250mm from each end. For cut sections of cavity barrier less than or equal to 500mm in length only one MP bracket is required.



Push the cavity barrier onto the bracket spike, the brackets should impale the VFB 60/60 to mid barrier depth and must not protrude through the intumescent element.

The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.

### Cut Sections

Each metre length of cavity barrier is supplied with 4No. face fixings pre-installed underneath the polythene outer to hold the intumescent strip in place.

It must be ensured that if the cavity barriers are cut to length that sufficient face fixings are in place to hold the intumescent strip to the stonewool backing.

It is not allowable to have any cut sections without a face fixing in place.

For sections 200mm or less, each section must have minimum one face fixing in place, positioned centrally.

Sections 200 to 500mm must have minimum 2No. fixings in place, 500 to 750mm is 3No. and 750 to 1000mm is 4No. fixings and they must be equally spaced with not more than 250mm between fixings and not more than 125mm for either end.

### Slitting

If the intumescent face on the front face of the cavity barrier is slit to allow fitting around vertical rails, it must be ensured that every slit section of cavity barrier has face fixings through the face of the intumescent material.

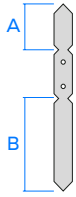
Vertical slits must kept as small as practicable, ensuring no gaps remain and the depth of slit is to minimum the depth of the rail and maximum 10mm deeper than the rail.

Additional face fixings at maximum 125mm to either side of each cut, and ensure that the factory fitted face fixings are no more than 250mm centres from the additional fixing applied.

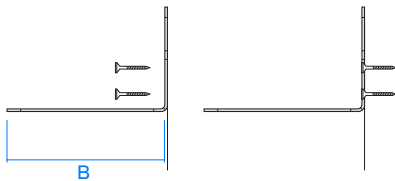
Suitable face fixings for cut or slit sections, are 65mm long stainless steel pig tail screws.

## Option 3

VFB 60/60 - Product width across cavity from 91mm up to 215mm wide, fixed using 2 multi purpose (MP) 160mm brackets (per linear metre).



MP brackets are supplied with 2 fixing spikes, one spike is 65mm long (A), the other is 160mm long (B), with a central section for securing the bracket to the substrate.

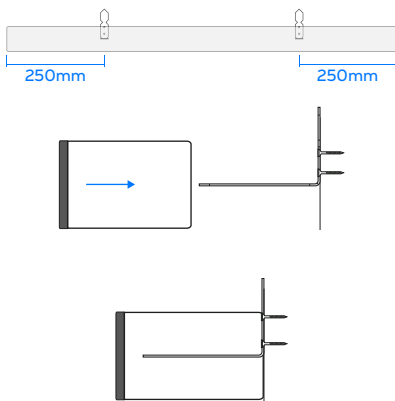


For cavity barriers 91mm–215mm wide (across cavity) use 2 MP brackets and the 160mm (B) long spike. To secure the bracket use nom. 5mm Ø stainless steel screws/fixings, with a maximum head diameter of 13mm and with a length and type suitable for the substrate.

Ensure that the screw head sits as flush as possible with the substrate.

Fix through both of the fixing holes.

Fixings must have an appropriate fixing depth for the substrate (with a minimum of 50mm for masonry and minimum 25mm for timber unless otherwise specified by the fixing manufacturers guidance for their fixing type).



For cavity barriers 91mm–215mm wide (across cavity) use 2 MP brackets and the 160mm long spike. The 160mm spike will require cutting to size, if used in barriers less than 185mm wide, to ensure that the spike does not pierce through the face of the intumescent material, the bracket should be cut to provide a minimum projection through the barrier to 3/4 of the cavity barrier width and to a maximum of 25mm behind the face of the intumescent strip.

Fix 2 number MP brackets, per linear meter, to the substrate at maximum 250mm from the end of the cavity barrier, with a maximum spacing between brackets of 500mm. Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 250mm from each end. Where the cavity barrier is less than or equal to 500mm in length 1 MP bracket may be used.

Push the cavity barrier onto the bracket spike, the brackets should impale the VFB 60/60 to mid barrier depth and must not protrude through the intumescent element.

The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.

#### Cut Sections

Each metre length of cavity barrier is supplied with 4No. face fixings pre-installed underneath the polythene outer to hold the intumescent strip in place.

It must be ensured that if the cavity barriers are cut to length that sufficient face fixings are in place to hold the intumescent strip to the stonewool backing.

It is not allowable to have any cut sections without a face fixing in place.

For sections 200mm or less, each section must have minimum one face fixing in place, positioned centrally.

Sections 200 to 500mm must have minimum 2No. fixings in place, 500 to 750mm is 3No. and 750 to 1000mm is 4No. fixings and they must be equally spaced with not more than 250mm between fixings and not more than 125mm for either end.

#### Slitting

If the intumescent face on the front face of the cavity barrier is slit to allow fitting around vertical rails, it must be ensured that every slit section of cavity barrier has face fixings through the face of the intumescent material.

Vertical slits must kept as small as practicable, ensuring no gaps remain and the depth of slit is to minimum the depth of the rail and maximum 10mm deeper than the rail.

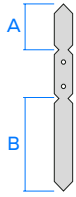
Additional face fixings at maximum 125mm to either side of each cut, and ensure that the factory fitted face fixings are no more than 250mm centres from the additional fixing applied.

Suitable face fixings for cut or slit sections, are 65mm long stainless steel pig tail screws.



## Option 4

VFB 60/60 - Product width across cavity from 216mm up to 275mm wide, fixed using 3 multi purpose (MP) 160mm bracket (per linear metre).



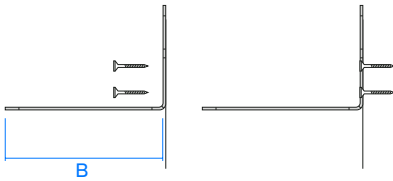
MP brackets are supplied with 2 fixing spikes, one spike is 65mm long, the other is 160mm long, with a central section for securing the bracket to the substrate.

For cavity barriers 216mm–275mm wide (across cavity) use 3 MP brackets and the 160mm (B) long spike. To secure the bracket use nom. 5mm Ø stainless steel screws/fixings, with a maximum head diameter of 13mm and with a length and type suitable for the substrate.

Ensure that the screw head sits as flush as possible with the substrate.

Fix through both of the fixing holes.

Fixings must have an appropriate fixing depth for the substrate (with a minimum of 50mm for masonry and minimum 25mm for timber unless otherwise specified by the fixing manufacturers guidance for their fixing type).



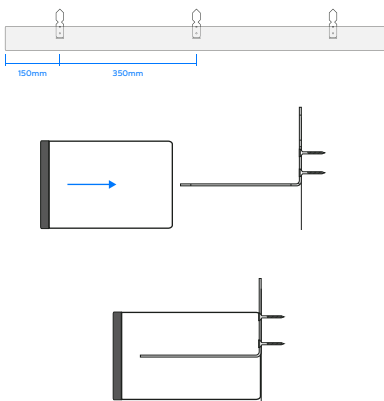
Fix 3 number MP brackets, per linear meter, to the substrate at maximum 150mm from the end of the cavity barrier, with a maximum spacing between brackets of 350mm.

Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 150mm from each end.

Where the cavity barrier is less than or equal to 350mm in length 1 MP bracket may be used.

Push the cavity barrier onto the bracket spike, the brackets should impale the VFB 60/60 to approximately mid barrier depth and must not protrude through the intumescent element.

The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate, at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.



#### Cut Sections

Each metre length of cavity barrier is supplied with 4No. face fixings pre-installed underneath the polythene outer to hold the intumescent strip in place.

It must be ensured that if the cavity barriers are cut to length that sufficient face fixings are in place to hold the intumescent strip to the stonewool backing.

It is not allowable to have any cut sections without a face fixing in place.

For sections 200mm or less, each section must have minimum one face fixing in place, positioned centrally.

Sections 200 to 500mm must have minimum 2No. fixings in place, 500 to 750mm is 3No. and 750 to 1000mm is 4No. fixings and they must be equally spaced with not more than 250mm between fixings and not more than 125mm for either end.

#### Slitting

If the intumescent face on the front face of the cavity barrier is slit to allow fitting around vertical rails, it must be ensured that every slit section of cavity barrier has face fixings through the face of the intumescent material.

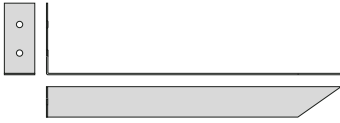
Vertical slits must kept as small as practicable, ensuring no gaps remain and the depth of slit is to minimum the depth of the rail and maximum 10mm deeper than the rail.

Additional face fixings at maximum 125mm to either side of each cut, and ensure that the factory fitted face fixings are no more than 250mm centres from the additional fixing applied.

Suitable face fixings for cut or slit sections are 65mm long stainless steel pig tail screws.

## Option 5

VFB 60/60 - Product width across cavity from 276mm-425mm wide, fixed using 2 high performance (HP) 328mm bracket (per linear metre).



HP brackets are supplied with a single fixing spike, at 328mm long with two pre drilled fixing holes and a 90° return angle for securing the bracket to the substrate.

The 328mm spike will require cutting to size, if used in barriers less than 350mm wide, to ensure that the spike does not pierce through the face of the intumescent material.

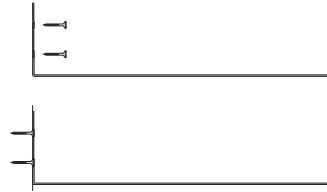
The bracket should be cut to provide a minimum projection through the barrier to 3/4 of the cavity barrier width and to a maximum of 25mm behind the face of the intumescent strip.

To secure the bracket use nom. 5mm Ø stainless steel screws/fixings, with a maximum head diameter of 13mm and with a length and type suitable for the substrate.

Ensure that the screw head sits as flush as possible with the substrate.

Fix through both of the fixing holes.

Fixings must have an appropriate fixing depth for the substrate (with a minimum of 50mm for masonry and minimum 25mm for timber unless otherwise specified by the fixing manufacturers guidance for their fixing type).

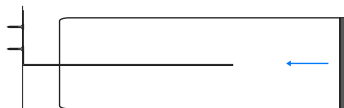


Fix 2 number HP brackets, per linear meter, to the substrate at maximum 250mm from the end of the cavity barrier, with a maximum spacing between brackets of 500mm.

Where sections of cavity barrier are less than 1 linear meter in length, ensure that MP brackets are positioned at a maximum 250mm from each end. Where the cavity barrier is less than or equal to 500mm in length 1 HP bracket may be used.



Push the cavity barrier onto the bracket spike, the brackets should impale the VFB 60/60 to approximately mid barrier depth and must not protrude through the intumescent element. The cavity barrier should be pushed fully onto the bracket spike and sit flush with the substrate, at the rear of the cavity barrier, ensuring that there are no gaps behind the cavity barrier.



### Cut Sections

Each metre length of cavity barrier is supplied with 4No. face fixings pre-installed underneath the polythene outer to hold the intumescent strip in place.

It must be ensured that if the cavity barriers are cut to length that sufficient face fixings are in place to hold the intumescent strip to the stonewool backing.

It is not allowable to have any cut sections without a face fixing in place.

For sections 200mm or less, each section must have minimum one face fixing in place, positioned centrally.

Sections 200 to 500mm must have minimum 2No. fixings in place, 500 to 750mm is 3No. and 750 to 1000mm is 4No. fixings and they must be equally spaced with not more than 250mm between fixings and not more than 125mm for either end.

### Slitting

If the intumescent face on the front face of the cavity barrier is slit to allow fitting around vertical rails, it must be ensured that every slit section of cavity barrier has face fixings through the face of the intumescent material.

Vertical slits must kept as small as practicable, ensuring no gaps remain and the depth of slit is to minimum the depth of the rail and maximum 10mm deeper than the rail.

Additional face fixings at maximum 125mm to either side of each cut, and ensure that the factory fitted face fixings are no more than 250mm centres from the additional fixing applied.

Suitable face fixings for cut or slit sections, are 65mm long stainless steel pig tail screws.



# VFB 60/60

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