

# FIRE

## BARRIER SYSTEMS

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- fire blanket
- consumables
- fire insulation rope
- multicoat fire stopper gap filler



Since the day it was founded, ARFEN has been producing solutions in high quality standards to meet construction and industrial sectors demand, and has achieved significant success with its business partners not only in domestic markets but also in international markets. To be able to reach this success, our motto strictly have been " Continues in quality and customer focused approach". Arfen continues its activities in 25.000 m2 closed area in İstanbul Hadımköy Industrial area, Çorlu Organized Industrial area and Gebze Organized Industrial area. It has become one of the most significant and greatest manufacturer in plastic, alu minum and rubber industry with a management approach that has adopted the principle of specialization in manufacturing. While Arfen applies modern production systems, it also providessensitivity to work safety, human health and environment. Arfen fulfills the need of construction industry with its dilatation profiles, Arfen Bridge expansion profiles and bearings, Arfen decoration profiles, Viny wall and corner protection systems, Aluminum matting systems and Hydroflex & chamfer bands. Moreover, having available high machinery and equipment capacity, Arfen meets the specific product requirements of different sectors. As a result of working in numerous projects without any problems, Arfen has gained a Global market network coverage in more than 50 countries in the construction industry. Arfen's perfection and excellence in production quality is provided by its hard working and honest employees from lowest levels to top managers. After 20 years of working with an understanding of business and ethics, we would like to thank our employees, our customers and suppliers for their contributions.



Arfen Construction Company / İSTANBUL



Arfen Aluminium Company / TEKİRDAĞ



Arfen Bridge and Building Technology Company / İZMİT



Ceiling Fire Barrier

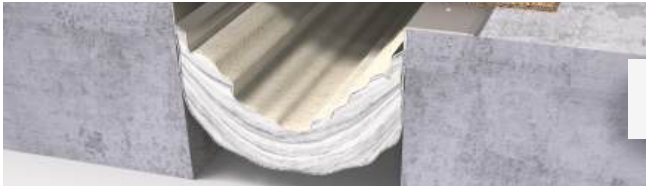
Wall Fire Barrier

Floor Fire Barrier



Arfen Fire Insulation Rope

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Arfen Fire Blanket (Horizontal)

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Arfen Fire Blanket (Vertical)

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Arfen Multicoat Fire Stopper Gap Filler

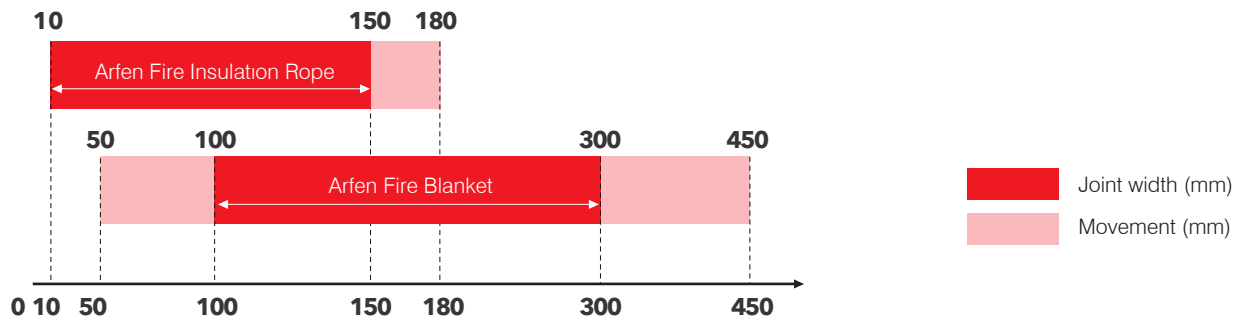
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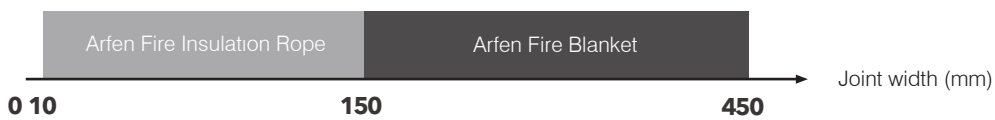
Arfen Consumables

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**RESULTS**



**RECOMMENDATIONS**



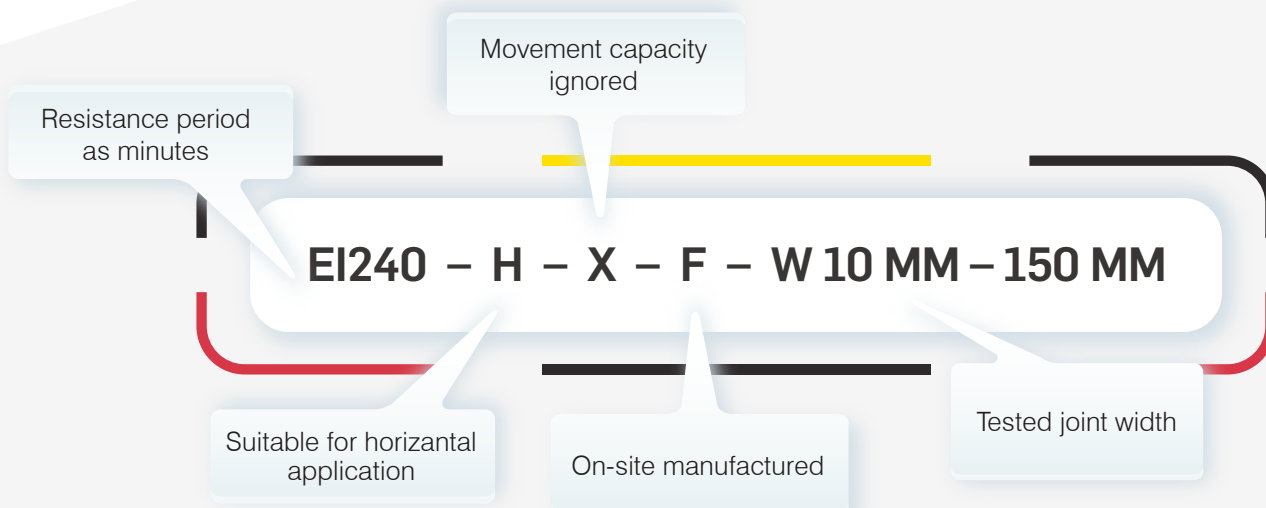
HOW TO READ A

# CLASSIFICATION

# REPORT ?

Things to know for correct reading of test reports in accordance with fire resistance standards

- E: Integrity
- I: Insulation
- EI: Resistance period as minutes
- H: Suitable for horizontal application
- V: Suitable for vertical application
- M: Movement Capacity
- X: Movement capacity ignored
- B: Factory and on-site manufactured
- F: On-site manufactured
- W: Tested joint width

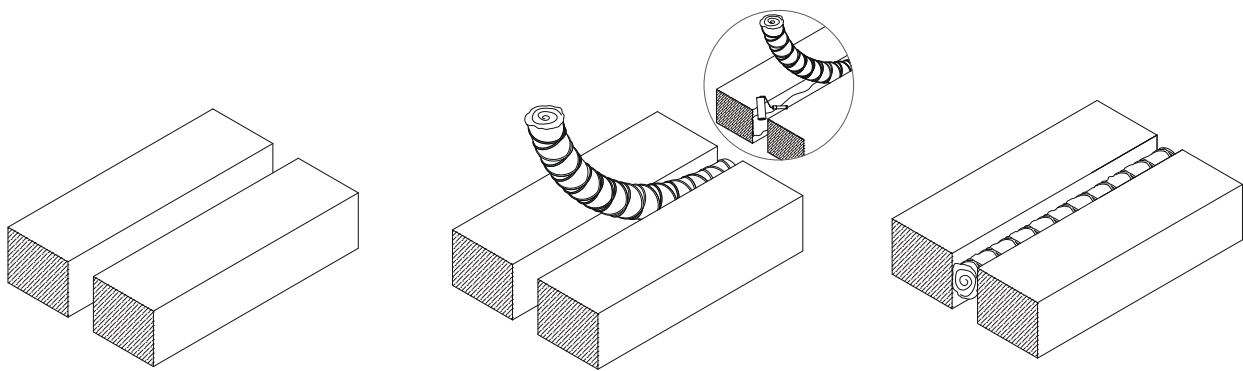


## ARFEN FIRE INSULATION ROPE

Arfen fire insulation rope can be easily applied because of type used as glass yarn weaving on rock wool. Should be placed in the expansion joint gap by compression of at least 33% Arfen fire insulation rope diameter to be selected according to the application area,



- Horizontal - Vertical Fire Resistance Time: EI240 (SIST EN 13501-2)
- Fire Resistance Classification: A1
- Product Sizes: 20 - 180 mm
- Product Density: 240 +/-20 Kg / m<sup>3</sup>
- Horizontal And Vertical Use Suitability: Yes
- ETA 17/0061



### 1st step

Concrete surface area and expansion joint gap should be cleaned and prepared to be suitable for application

### 2nd step

ARFEN rope should be selected according to suitable size for the expansion joint gap and placed into the gap with squeeze

### 3rd step

If required, the rope can be fixed with suitable sealant or adhesive on the edge of concrete surface



**EI240 - H - X - F - W 10 MM - 150 MM**

Expansion Joint Gap Dimension (mm)	<10	11-15	16-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	111-120	121-130	131-140	141-150	150
Material Diameter to be applied (mm)	20	25	30	40	50	60	70	80	90	100	120	130	140	150	160	170	180

## ARFEN FIRE BLANKET HORIZONTAL

Horizontal Fire Blanket is a high performance, low weight, 7 layer fiberglass fire blanket that is designed to prevent fire and smoke passage in Expansion Joint gaps and also prevents heat transfer and flame transition to cold side. Horizontal fire blanket can be applied easier and faster than traditional solutions. Horizontal fire blanket have designed and tested to resist fire longest when mounted properly. Can be used in vertical and horizontal gaps from 100 mm to 300 mm.

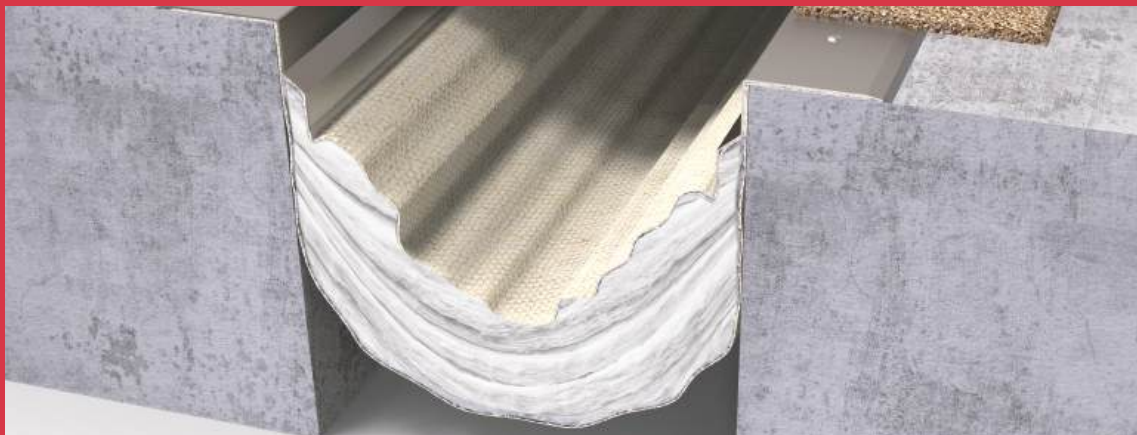
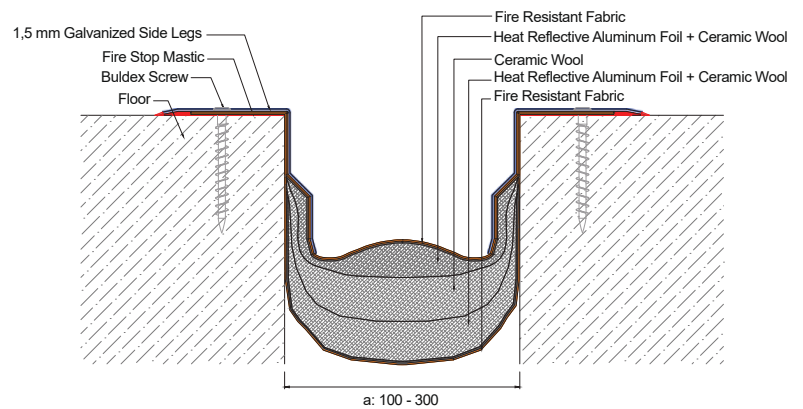
Suitable for floor and wall applications.

Application areas: Carparks, hospitals, shopping centres, schools, library and etc.

- Horizontal Fire Resistance Time : E180 (EN 1366-4:2006+A1:2010)
- Fire Resistance Classification: A1
- Product Sizes: 100- 300 MM
- Vertical Use Suitability: YES
- Horizontal Use Suitability: YES



**60** MINUTES ISOLATION **180** MINUTES OF INTEGRITY

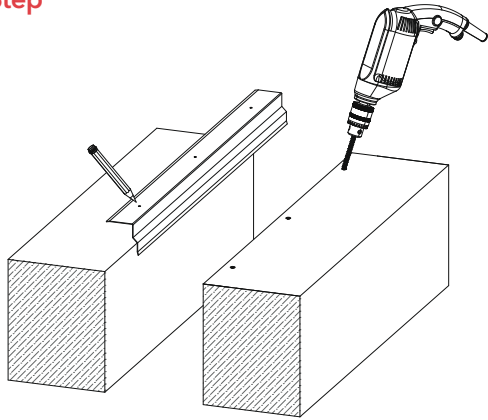


**E 180 - EI 60 - H - M50 - F- W100-300 MM**

Product Code	Expansion Joint Width (mm)	Min. Max Expansion Gap (mm)	Classification
FS100-1	100	50 mm -150 mm	E180 - EI60 - H - M50 - W100
FS150-1	150	75 mm - 225 mm	E180 - EI60 - H - M75 - W150
FS200-1	200	100 mm - 300 mm	E180 - EI60 - H - M100 - W200
FS250-1	250	125 mm - 375 mm	E180 - EI60 - H - M125 - W250
FS300-1	300	150 mm - 450 mm	E180 - EI60 - H - M150 - W300

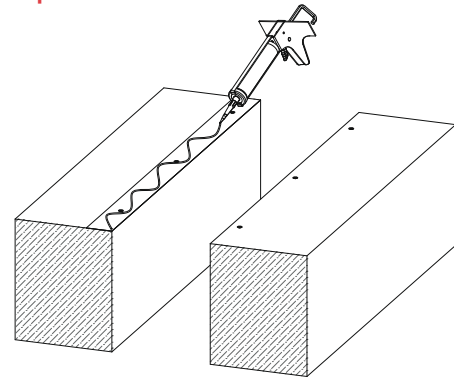
## ARFEN HORIZONTAL FIRE BLANKET APPLICATION

### 1st Step



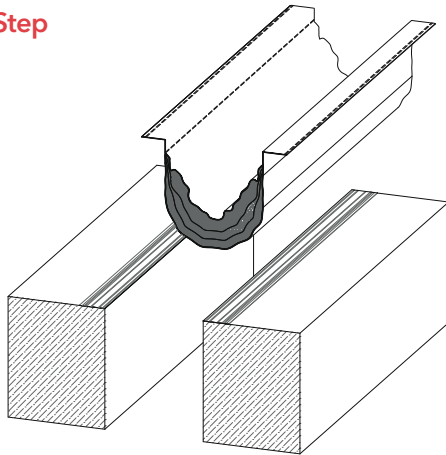
1st Step: The concrete surface and expansion joint gap should be cleaned. The galvanized moutage profiles should be placed on the concrete surface and concrete should be marked through holes on the galvanized profiles, after that fixation holes should be opened with 6,5 mm drill. The holes started from beginning point 150 mm and continue with the interval of 300 mm

### 2nd Step



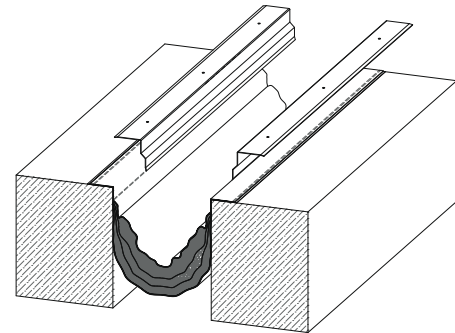
2nd Step: Sealant should be applied on the concrete surface and the layer should be 70 mm

### 3rd Step



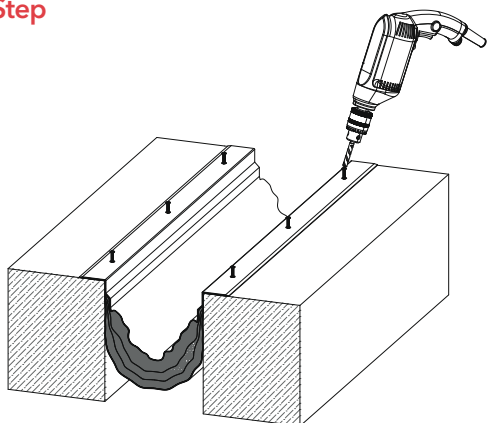
3rd Step: Fire barrier should be placed on the sealant layer. Wait for a while to get efficient bonding with sealant and barrier. After this process, fire barrier could be fixed with nails on the surface optionally

### 4th Step



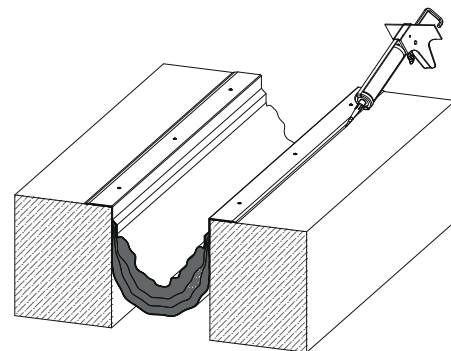
4th Step: Galvanized moutage profiles should be placed on the fire barrier which is already bonded with concrete surface.

### 5th Step



5th Step: Application should be done by E 8,0x80 Buldex Screw through the opened holes on galvanized moutage profiles.

### 6th Step



6th Step: The application will be completed with sealant to prevent any leakage between galvanized moutage profiles and concrete surface

# ARFEN FIRE BLANKET VERTICAL

Vertical Fire Blanket is designed as a system produced to prevent the flame, smoke and high heat transfer that will occur in the expansion joint gaps in case of fire in the building for a specified period of time.

Vertical Fire Blanket is a low-weight, high performance and easy-to-apply system with its special fireproof fabric and 8 layer inner structure consisting of fiberglass material. The system is approved and certified by fire resistance performance test centers in accordance with international standards.

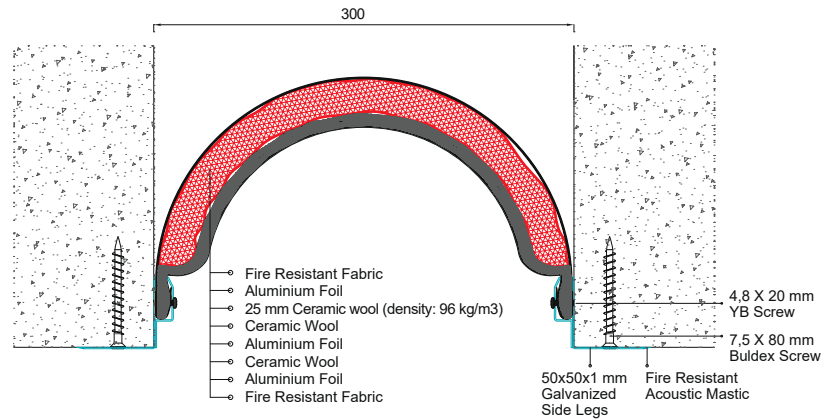
Suitable for wall and ceiling applications.

Application areas: Carparks, hospitals, shopping centers, schools, library and etc.

- Vertical Fire Resistance Time: E120 (EN 13501-2:2016)
- Fire Resistance Classification: EN1366-4:2006 + A1:2010
- Product Sizes: 100- 300 mm
- Vertical Use Suitability: Yes
- Horizontal Use Suitability: It can be used on the ground with rock wool + multicoated fire stopping gap filler or arfen rope.



**20** MINUTES ISOLATION    **120** MINUTES OF INTEGRITY

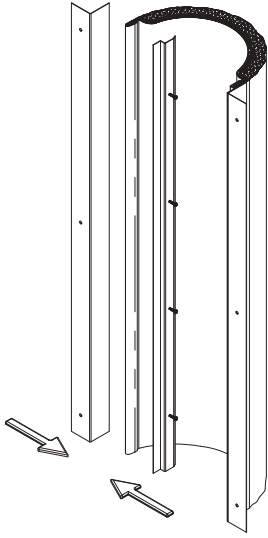


**E120 -EI 20- V- M050 - F - W 100 MM - 300 MM**

Product Code	Expansion Joint Width	Min. & Max. Expansion Gap	Classification
FS100	100	50 mm - 150 mm	E120 - EI20 - V - M50 - F - W100
FS150	150	75 mm - 225 mm	E120 - EI20 - V - M75 - F - W150
FS200	200	100 mm - 300 mm	E120 - EI20 - V - M100 - F - W200
FS250	250	125 mm - 375 mm	E120 - EI20 - V - M125 - F - W250
FS300	300	150 mm - 450 mm	E120 - EI20 - V - M150 - F - W300

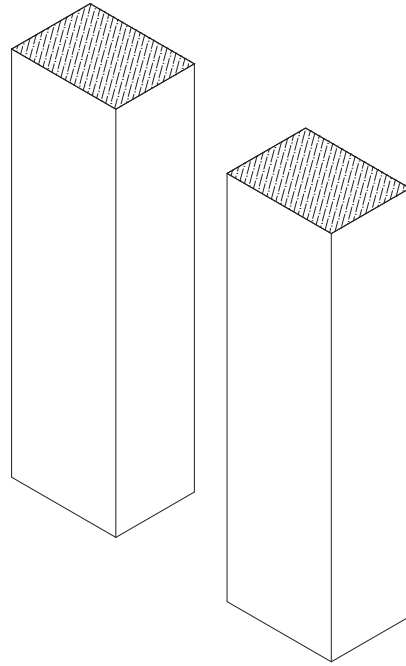
## ARFEN VERTICAL FIRE BLANKET APPLICATION

### 1st Step



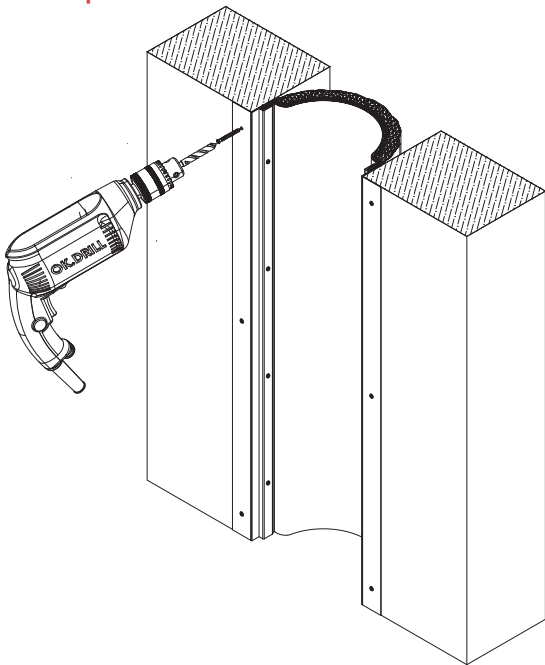
1st Step: The Vertical Fire Blanket detail which is 7 mt long prepared and assemble with galvanized mountage profiles in ARFEN facility and dispatch to the site

### 2nd Step



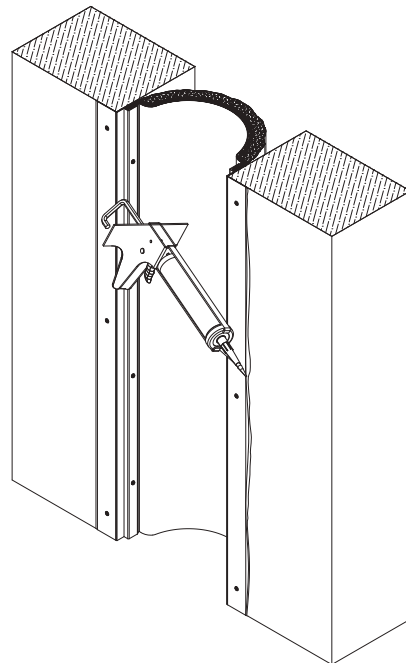
2nd Step: Concrete surface should be cleaned and should be prepared to application

### 3rd Step



3rd Step: The Vertical Fire Barrier should be placed on the wall and immobilized with 7,5 x 80 mm buldex screw.

### 4th Step



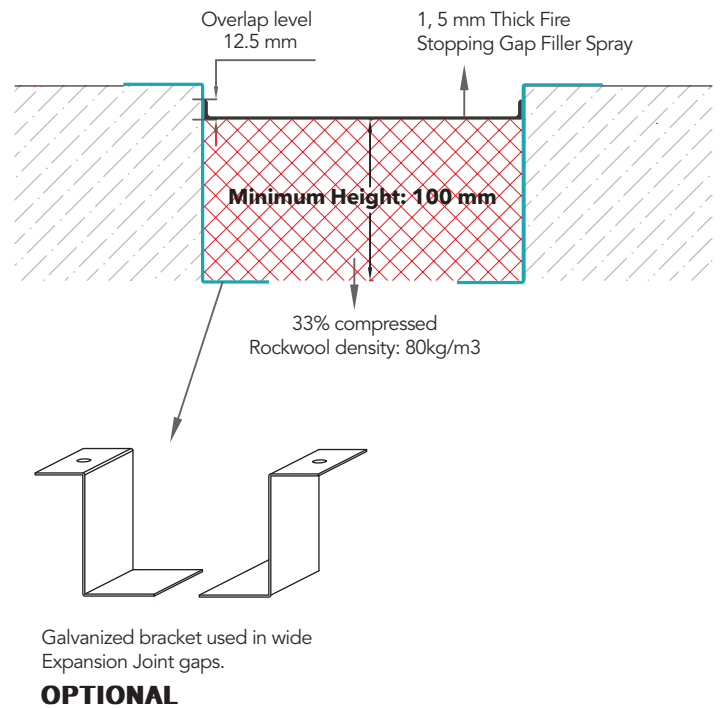
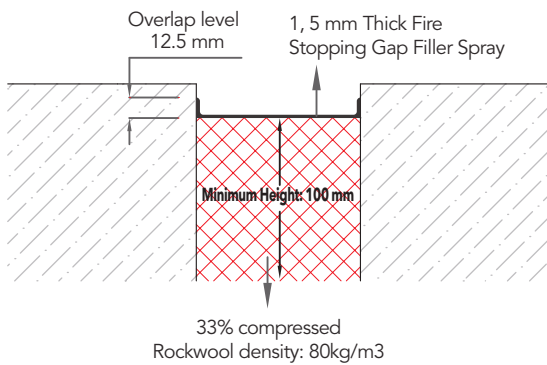
4th Step: The application will be completed with Fire resistant sealant to prevent any leakage between galvanized mountage profiles and concrete surface

## ARFEN FIRE MULTICOATED FIRE STOPPING GAP FILLER

This product is multicoated water based acrylic fire stopping gap filler. Applied on rock wool by a roll or spray internally or externally. ARFEN's fire stopping gap filler has 25% movement capacity of the gap applied in and can resist to fire up to 2 hours.

- Produced in buckets of 5 litre and 15 litre
- Density 1.35 kg/dm<sup>3</sup>
- Ideal storage temperature: 5.30 C, minimum shelf life is 1 year
- Application Temperature: 5.30 C
- Drying Time: 2-4 hours
- Recommended thickness: Wet sheet thickness 3 mm
- Dry sheet thickness 1,5 mm.
- Usage: 1.4 Lt/m<sup>2</sup>
- Colour: White and Red
- Waterproof. (Limited to 25% movement capacity)

Note: Rockwool needs to be compressed 33% before fitting in to Expansion Joint Gap.



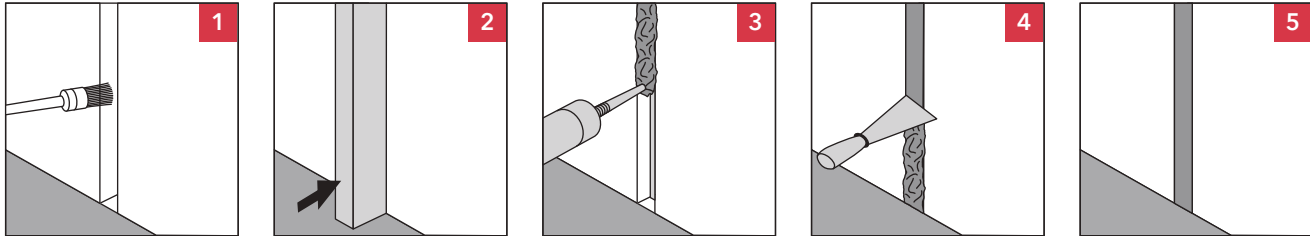
## ARFEN CONSUMABLES FIRE-RESISTANT ACOUSTIC MASTIC

An acrylic based firestop sealant that provides movement capability in fire rated joints and seals through-penetrations applications

- Silicone free
- Halogen, asbestos and solvent free
- Paintable
- Tested up to %33 movement with 500 cycles in accordance to UL 2079 and ASTM 1966
- Smoke and fume resistant
- Easy clean up with water
- Single component systems available
- Meets LEED requirements for indoor environmental quality credit 4.1 Low Emitting Materials, Sealants and Adhesives and 4.2 Paints and Coatings



### APPLICATION STEPS



Technical Data	Acoustic Mastic
Chemical basis	Acrylic based firestop sealant
Color	Available in red, white and gray
Application temperature	40 F to 104 F (5°C to 40°C)
Skin-forming time	Approx 15 min
Curing time	Approx 3 mm / 3 days
Average volume shrinkage (ASTM C1241)	22.2%
Movement capability	Approx 10%
Temperature resistance	-22 F to 176 F (-30°C to 80°C)
Surface burning characteristics (ASTM E 84-96)	Flame Spread: 10 Smoke Development: 0
Sound transmission classification (ASTM E 90-99)	56 (Relates to specific construction)



## IMAGES DURING FIRE TEST

During Fire Classification and Fire Resistance Test, we passed 180 minutes straight fire resistant according to EN 1366-4:2006 A1:2010 standards.

After Test process, there wasn't any deformation on the ARFEN Fire Blanket at all. Examine images as below. In consequence of deformation at the supporting construction because of losing the security of the test conditions, test was terminated after consulted with the sponsor. Otherwise the test could be finalized up to 240 minutes.



Blanket Bottom View

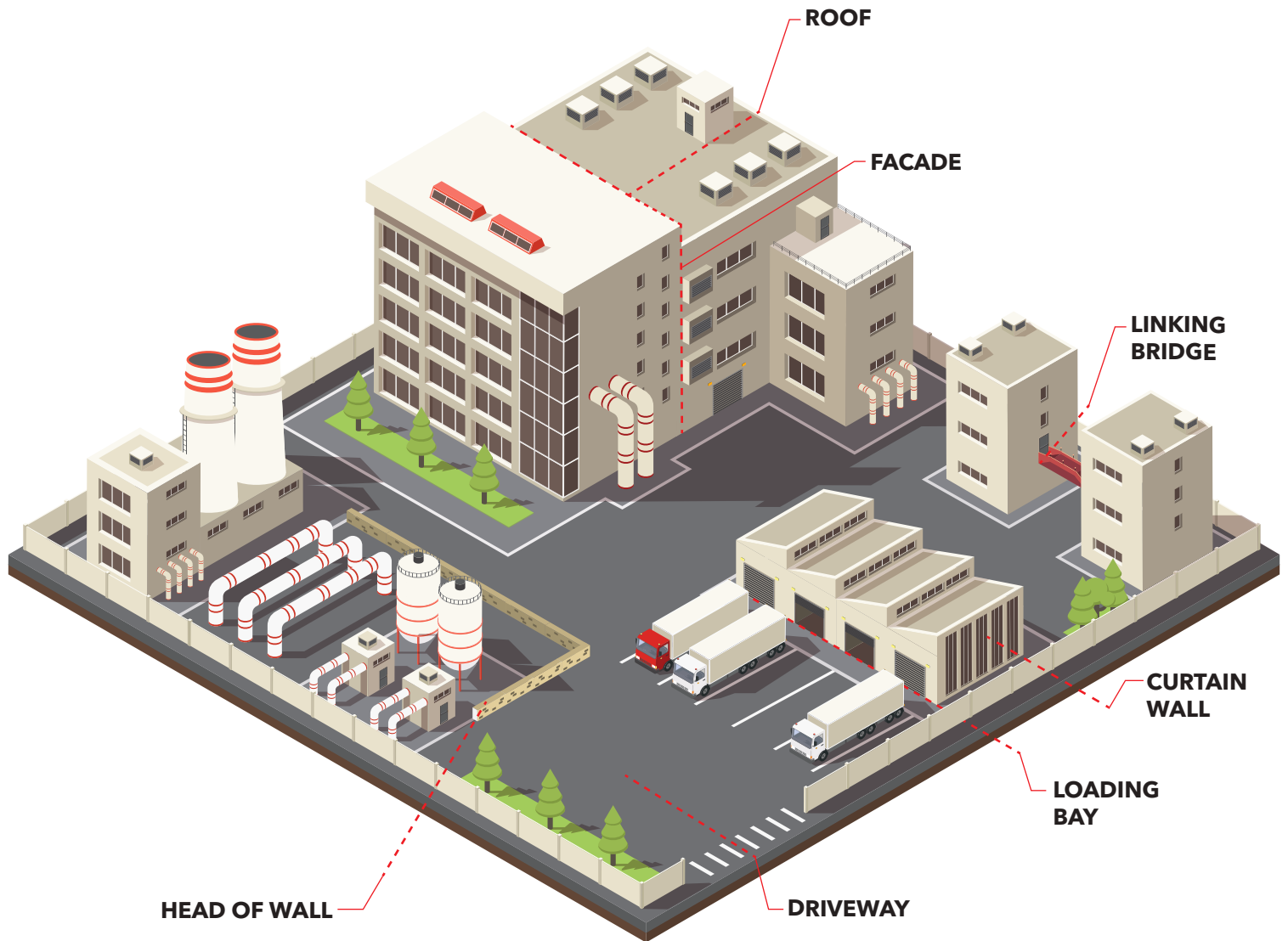


# CERTIFICATES OF ARFEN FIRE BLANKET FOR HORIZONTAL AND VERTICAL APPLICATION



Certificate No: EEA-2000-0007  
Certificate No: EEA-2000-0140

# EXPANSION JOINTS AND FIRESTOP LOCATIONS



**“ Specialist solutions for buildings ”**





safe handling seismic mattress structural joint compressibility  
movement blanket performance tested certified professional versatile



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