FIREMAC® GULF

passive fire protection

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FIREMAC FM BLUE

Fire resistant walls, ceilings, ductwork and service enclosures

www.firemacgulf.com

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passive fire protection

COMPANY PROFILE

MISSION IS TO PROTECT PEOPLE AND PROPERTY FROM FIRE.

VISION IS TO BE THE LEADING PROVIDER OF FIRE PROTECTION IN THE BUILT ENVIRONMENT.

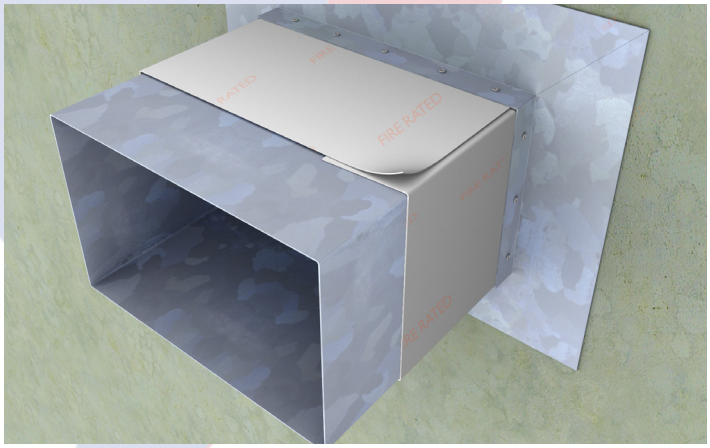
Firemac was established in 1989 and has grown to become a major provider of passive fire protection products in the UK & internationally.

Passive Fire Protection systems form a critical part of a buildings fire strategy, to help maintain the load bearing capacity of the structure, and prevent the spread & passage of fire through compartmentation (i.e. the use of fire resisting walls / floors / doors / ductwork etc.)

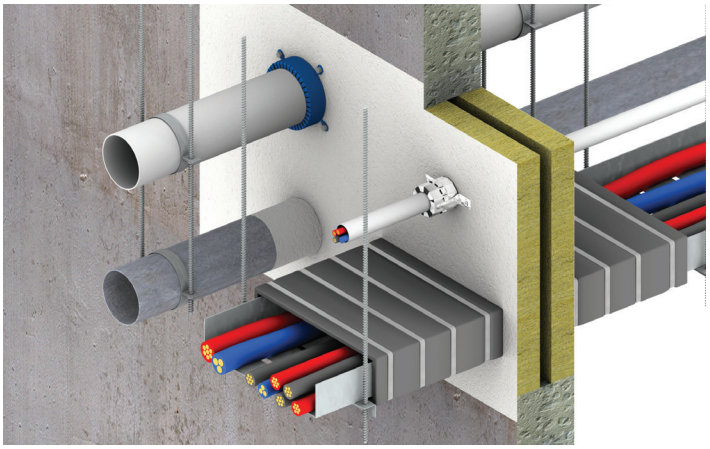
The correct design, fabrication, and installation is critical in ensuring such systems achieve the required performance. Having been at the forefront of the sector for over 25 years, Firemac has extensive experience in providing guidance from concept to completion of such systems and markets three main product ranges.

As our customers and their clients would and should expect working in life safety systems, Firemac products are manufactured under appropriate third party certification schemes.

FIREMAC FM BLUE
A non-combustible composite board, used to form fire resisting walls, ceilings, building service enclosures and ductwork, while offering high levels of impact resistance, and blast resistance. Tested to the relevant British and European Standards.



FIREMAC FM FABRIC
A lightweight fabric, for use in fire resisting ductwork, with a proven record in the UK and international markets. Tested to the British and European Standards. Awarded the Queens Award in 2018, for Enterprise & Innovation.



FIREMAC FM FIRESTOP
A range, comprising of ablative batts and coating, a mortar compound, acrylic sealant, intumescent sealant, pipe collars, pipe wraps and pillows. Tested to the European Standards.

FIREMAC FM BLUE

Building regulations require that new buildings must be divided into smaller compartments, to enable a safe means of escape in the event of a fire. Passive Fire Protection (PFP) methods such as fire resisting partitions, ceilings, doors, ductwork, and fire-stopping – can be used to help create such compartments

Firemac FM Blue Systems can be used to help form compartments for periods of up to 4 hours fire resistance. Firemac FM Blue is a nominal 8.5mm non-combustible composite board with a fibre reinforced cement core and outer facings of perforated galvanised steel mechanically bonded to the core. Other steel finishes such as stainless steel are also available on request, depending on quantity.

Firemac FM Blue systems provide robust insulated or uninsulated vertical and horizontal barriers, ventilation, smoke extract and kitchen extract ductwork and enclosures for building services with a fire resistance of up to 4 hours. Firemac FM Blue systems are particularly useful where high levels of impact or blast resistance are required.

FIREMAC FM ACRYLIC SEALANT

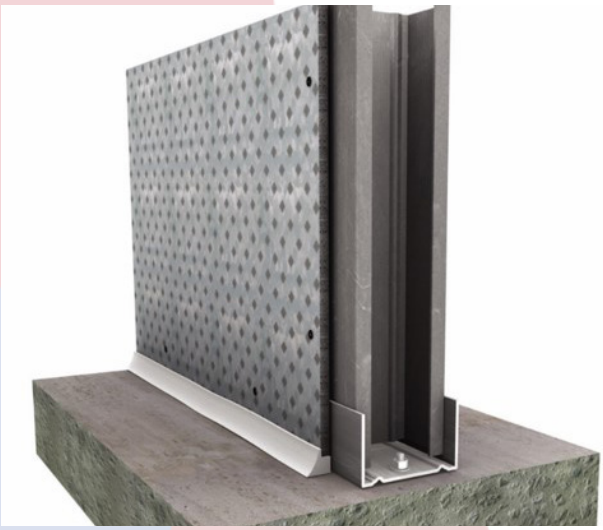
Firemac FM Acrylic Sealant is a water based gunable sealant designed for sealing joints in Firemac FM Blue Systems. The sealant will form an insulating char when exposed to the heat of a fire and prevents the passage of fire and smoke. In normal use Firemac FM Acrylic Sealant can help retard the passage of sound in all Firemac FM Blue applications and may also be used to reduce the air leakage in Firemac FM Blue ductwork systems.

FIREMAC FM SILICONE SEALANT

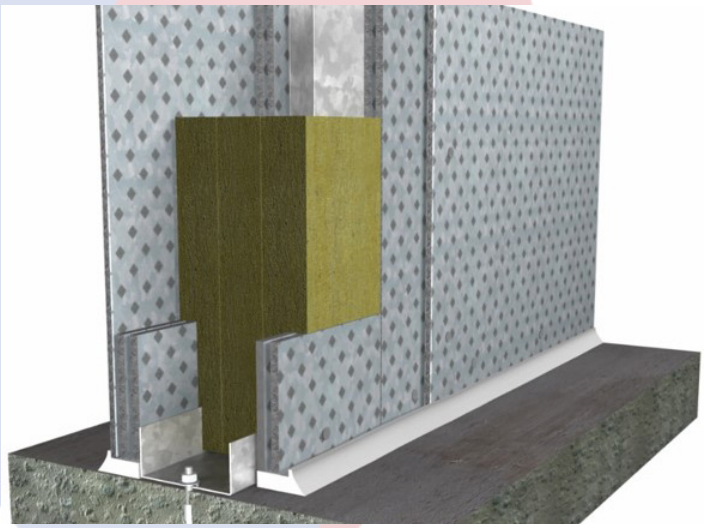
Firemac FM Silicone Sealant is a one-part neutral-curing silicone sealant, designed for sealing joints in Firemac FM Blue Systems. The sealant is flexible and when exposed to the heat of a fire it will prevent the passage of fire and smoke. The sealant has excellent weatherability and flexibility and is odourless – and should be used in place of the Firemac FM Acrylic Sealant where such requirements apply. In normal use, Firemac FM Silicone Sealant can help retard the passage of sound in Firemac FM Blue applications, and may also be used to reduce the air leakage in Firemac FM Blue ductwork systems.

APPLICATIONS: WALLS & PARTITIONS

Firemac FM Blue non-loadbearing walls and partitions consist of Firemac FM Blue lining boards, nominal 8.5 mm thick, fastened to steel framing members - designed to provide up to 240 minutes fire resistance (integrity only or integrity and insulation) in terms of BS 476: Part 22: 1987 or BS EN 1364-1.



Unisulated systems are formed using a single skin of Firemac FM Blue on one side of the steel framing.



Insulated systems are formed using Firemac FM Blue on the outer face of steel framing, with stone mineral wool installed in the cavity, or through the use of plasterboard linings.

Firemac FM Blue walls and partitions can be particularly important in high risk environments, including underground railway stations and power stations. Typical locations for Firemac FM Blue walls and partitions applications include hoardings and walkways, document and equipment protection, warehouse compartmentation, and in electric transformer and switch rooms. The versatility and robustness of the board can make it useful in a range of environments. .

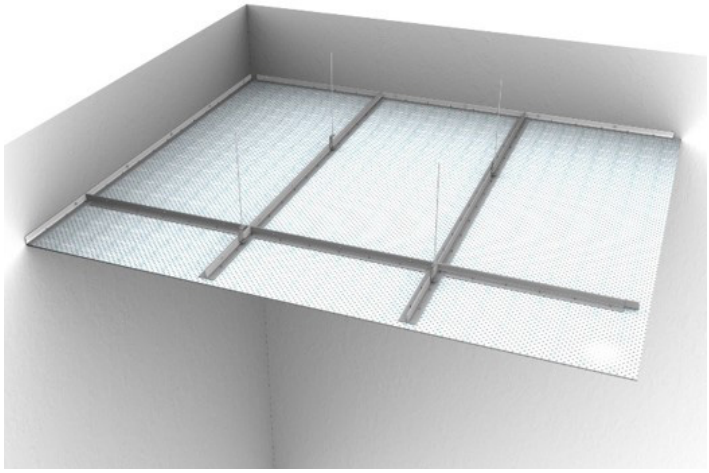
PROJECT: RACE BANK

Firemac FM Blue boards were installed at Race Bank, a 580 megawatt (MW) UK Offshore Wind Farm project. Race Bank Offshore Wind Farm is located west of the village of Walpole St. Peter in Norfolk.

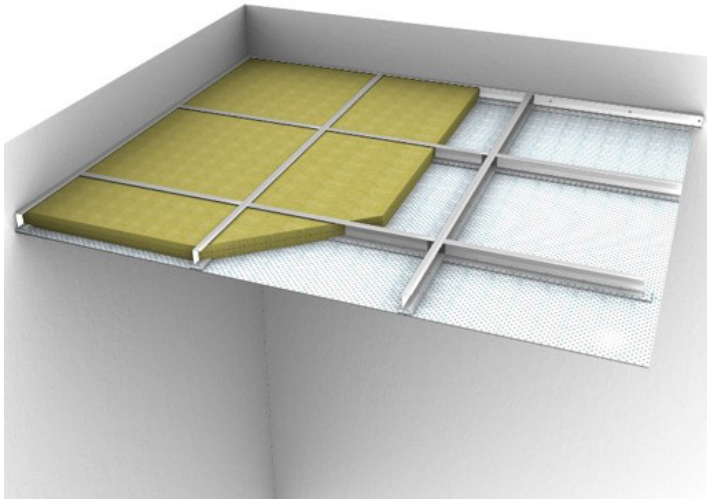
The boards, provide protective-screened enclosures around two shunt reactors and two DRC transformers. Over 1200m^2 of Firemac FM Blue fire protection boards were used in the screens which measured over 10m high by 14m long. The Firemac FM Blue walls provide weather tolerant, fire, blast and acoustic resistant screens.

APPLICATIONS: CEILINGS

Firemac FM Blue suspended or membrane ceiling systems consist of Firemac FM Blue lining boards, nominal 8.5 mm thick, fastened to steel framing members - designed to provide up to 240 minutes fire resistance (240 minutes integrity only or 240 minutes integrity and up to 120minutes insulation) in terms of BS 476: Part 22: 1987 or BS EN 1364-2.



Uninsulated systems are formed using a single skin of Firemac FM Blue on the underside of the steel framing.



Insulated systems are formed using Firemac FM Blue on the underside of the steel framing, with stone mineral wool laid over the top of the Firemac FM Blue lining boards.

Firemac FM Blue ceilings can be particularly important in high risk environments, including underground railway stations and power stations. Typical locations for Firemac FM Blue ceiling applications include protection in electric transformer and switch rooms. The versatility and robustness of the board can make it useful in a range of environments.

PROJECT: HERE EAST

Location: Queen Elizabeth Olympic Park, London, United Kingdom

Firemac FM Blue has been used to provide one-hour fire protection for ceilings in the development of Here East on the site of the London 2012 Olympic Park. It will be the biggest Technology Innovation Centre ever built in Europe.

PROJECT: UK FIRE RESISTANCE TESTING

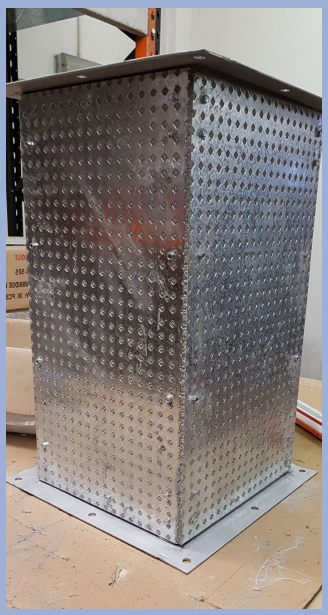
APPLICATION: DUCTWORK

Firemac FM Blue ductwork systems consist of Firemac FM Blue lining boards, nominal 8.5 mm thick, fastened to steel framing members - designed to provide up to 240 minutes fire resistance (240 minutes integrity only or 240 minutes integrity and up to 120 minutes insulation) in terms of BS 476: Part 24: 1987.

Uninsulated systems are formed using a single skin of Firemac FM Blue on the outer face of steel framing.

Insulated systems are formed using Firemac FM Blue on the outer face of steel framing, with stone mineral wool fastened to the outer face of the Firemac FM Blue boards.

Firemac FM Blue ductwork systems may be used for ventilation, smoke control or kitchen extract purposes - in high risk environments, such as where ventilation ductwork is required in a substation environment.



APPLICATION: BUILDING SERVICE ENCLOSURES

Firemac FM Blue building service enclosures consist of Firemac FM Blue lining boards, nominal 8.5 mm thick, fastened to steel framing members - designed to provide up to 240 minutes fire resistance (240 minutes integrity only or 240 minutes integrity and insulation) in terms of BS 476: Part20: 1987.

Uninsulated systems are formed using a single skin of Firemac FM Blue on the outer face of steel framing.

Insulated systems are formed using Firemac FM Blue on the outer face of steel framing, with stone mineral wool on the inner face of the Firemac FM Blue enclosure.

Firemac FM Blue service enclosures may be used to house cables, pipes or other services - in high risk environments, such as to encase a gas pipe running through a building.

PROJECT: GATWICK AIRPORT

Gatwick Airport is a major international airport, south of central London. It has recently seen as much as 46 million passengers in a single year, with 230 destinations over 70 countries. A Firemac FM Blue building service enclosure was designed to house an existing gas pipe – from a riser cupboard, to point of exhaust, providing up to 120 minutes fire resistance.

SUMMARY OF FIRE RESISTANCE PERFORMANCE

To enable Firemac to market the various fire resisting systems they do using Firemac FM Blue, Firemac have carried out successful testing to a range of British & European Standards – for periods of up to 240 minutes.

Firemac FM Blue Systems tested and assessed to the British Standards, are summarised in the table below. For guidance on Firemac FM Blue Systems tested to the European Standards or UL Standard, please contact Firemac for further guidance.

Report no.	Description	Maximum fire resistance to BS476 (min)		
		Stability (ducts only)	Integrity	Insulation
Warringtonfire 192474J	9 Wall systems	n/a	240	240
Warringtonfire 325685	6 Ceiling systems	n/a	240	120
Warringtonfire 324514	3 Duct systems	240	240	120
Warringtonfire 323294	10 Service enclosures	n/a	240	240
Warringtonfire 332995 Issue 2	4 Penetration seal barriers	n/a	240	240

SUMMARY OF PHYSICAL & MECHANICAL PROPERTIES

While offering high periods of fire resistance, Firemac FM Blue Systems can also be designed and installed in high risk environments to protect against impact and or a blast. The impact and blast resistance Firemac FM Blue can provide is summarised throughout this section.

A test wall consisting of Firemac FM Blue secured to one face of a steel framing system. The Firemac FM Blue test specimen was exposed to a dynamic pressure load. This was designed to simulate a blast.

The Firemac FM Blue single skin wall, 5m high, was tested to BS 5234: Part 2 and satisfied the performance requirements for Severe Duty and the maximum crowd pressure rating (3kN/m). The wall was subjected to tests for stiffness, damage by small hard body impact and large soft body impact, structural damage by large soft body impacts, door slamming and resistance to crowd pressure.

Report no.	Conforms to	Description
BRE 264954 Rev 1	BS EN ISO 1182: 2010	On the central fibre cement core of FM Blue
BRE 266127	BS EN ISO 1716: :2010	On the central fibre cement core of FM Blue
BRE 266768	BS EN 13501-1: 2007	A1 reaction to fire classification
BRE 279356	Dynamic pressure loading of 14kPa	Showed no measurable permanent displacement of FM Blue wall
BSRIA C25092A	BSRIA air leakage test	Complied with the requirements of High Pressure Class C ductwork
BTC 18586	BS 5234: Part 2	Severe Duty for strength and robustness of partitions, including crowd pressure rating (3kN/m)

WHY FIREMAC?

TECHNICAL SUPPORT

BSi FLEX 8670 is a framework which provides a set of core principles of competency. The importance of competency in an industry relating to the design and construction of life safety systems must not be underestimated. We, at Firemac, take pride in offering technical support from concept design to handover. Firemac can help in the provision of:

1. Office Based or Site Based Meetings
2. Development of Technical Drawings / Design
3. Product Specific Training
4. On-going General Technical Support
5. Site Inspections (including an issue of a Certificate of Conformity)

Firemac are happy to work with all parties from the trained Firemac FM Blue contractor to the main contractor and approval authority, to help ensure a smooth process throughout each project.

THIRD PARTY CERTIFICATION

Voluntary third party product certification schemes essentially include verification of the test evidence and scope of application or use of the product, and a regular audit of the factory quality assurance (QA) system to ensure that the product as supplied to the contractor is to the same design or formulation as the original test samples.

Firemac FM Blue three and four hour fire resisting walls have been successfully tested to UL 263, which includes a hose stream test. The board production for these walls is covered by UL third-party certification schemes.

The board production of Firemac FM Blue for its use in fire resisting walls, ceilings, ductwork and building service enclosures are covered by IFC Certification's third-party certification schemes.

At present there is no product standard, which permits one to apply a 'CE mark' to Firemac FM Blue. It should, however, be noted that CE Marking is not a 'quality mark' but uses harmonised European classification and fire testing procedures. Voluntary third party product certification schemes are 'product quality' schemes and invariably include more checking procedures than are required for CE Marking.

INTERNATIONAL DISTRIBUTION

Firemac FM Blue is distributed in key markets in the UK, Europe, the Middle East and Asia Pacific through a network of major partners, providing stock availability and logistic support.

In the UK, Firemac FM Blue is distributed by SIG, the UK's market leading specialist distributor to the construction industry. SIG have a nationwide branch network, and a fleet of specialist delivery vehicles, ensuring product delivery on time. Firemac provides full technical support to SIG and their customers.

PROJECTS

TOWER HILL STATION

Location: Tower Hill Underground Station, London, United Kingdom

Firemac FM Blue was installed as a double-skin insulated wall to provide a two-hour fire protected stairway. The wall was also required to satisfy the impact and crowd pressure performance criteria of BS 5234.

CANNON STREET STATION

Location: London, United Kingdom

Firemac FM Blue was used in a fire resistant passenger tunnel in London Underground's re-development of Cannon Street Station. The purpose of the tunnel was to achieve the safe transit of passengers from the street entrance into the main stairs, through the middle of a construction site.

The passageway was required to be structurally sound, suitable for passenger loadings at peak times, relatively lightweight so as to not exceed the structural loading capacity of the existing station flooring, aesthetically pleasing and incorporate services fixings.

PARKSIDE, COVENTRY

At Parkside Coventry, a luxury student accommodation development was designed with 502 high quality bedrooms within 3 towers, which reach 6, 13 and 19 storeys high respectively. The complex also boasts green roof space, retail space, a gym and various other communal areas. In this development, a Firemac FM Blue ceiling system was required in a high risk substation environment, to provide up to 240 minutes fire resistance.

KLANG VALLEY MASS RAPID TRANSIT

Location: Klang Valley, Malaysia

Firemac FM Blue demountable walls were installed within Malaysian MRT projects to provide up to 120 minutes fire resistance (integrity and insulation) in accordance with BS 476: Part 24: 1987.

FIREMAC GULF DMCC

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