



Promat



Cafco FENDOLITE®-MII - data sheet
Integrated fire protection solutions

www.promat-oilandgas.com





With a service life exceeding 30 years, Cafco FENDOLITE®-MII is protecting more than 20 million square metres of structural steel frames and ancillary equipment across the globe.

Cafco FENDOLITE®-MII is a spray applied, single pack factory controlled premix, based on vermiculite and Portland cement. It produces a monolithic coating able to withstand the thermal shocks experienced in a high intensity hydrocarbon fire. Although low in density, thus significantly reducing the dead load, Cafco FENDOLITE®-MII is highly durable and will not crack or spall when subject to mechanical impact.

Since the mid 1970's, Cafco FENDOLITE®-MII has been the global leader in cementitious fireproofing and has been applied to steel and concrete structures as well as ancillary equipment in order to protect chemical & petrochemical facilities, gas processing plants, refineries, and power plants.

Cafco FENDOLITE®-MII Product Benefits

- Proven fitness for purpose & performance worldwide on all types of climatic conditions
- Over 30 years of service under the harshest of conditions
- Unrivalled track record spanning over three decades
- Unequalled knowledge and experience of Promat
- Excellent performance under industry standard fire tests
- Suitable for both shop and field application
- Reduced structural weight lowering installation and transportation costs
- Optimum cost-benefit solution for modules
- Global availability - supplied and installed
- Promat recognized applicators (PRAs) worldwide
- Global technical, specification and sales support
- Suitable for use under exposure to jetfire, hydrocarbon and cellulosic fire

Cafco FENDOLITE®-MII Common Applications

- Refineries and petrochemical facilities
- Gas processing plants
- GTL, LNG & NGL processing plants
- Fossil fuels and nuclear power plants
- Pharmaceutical facilities
- Terminals (airport, rails, shipping, etc.)
- Industrial buildings
- Pipe racks and other steel structures
- Concrete structures
- Horizontal and vertical vessels
- Spheres including legs and bracing
- Vessel saddles and skirts

				
Financial standing	Technical literature	Track record & expertise	Quality & HSE	Sales & technical service



Modular steel structures



Spheres including legs and bracing



Vessels and vessel supports

Cafco FENDOLITE®-MII has been rigorously tested and certified for a variety of fire performance protocols

- USA - UL 1709 (Design No. XR719), UL 263 and ASTM E119
- UK - BS 476 (Parts 20-21: 1987 Appendix D) Hydrocarbon Ratings
- International Standards ISO 834
- Germany - DIN 4102
- France - Hydrocarbon Modified HCM
- Italy - UNI 11076
- UL Environmental Testing
- Blast from Gas Explosion Test (more than 3 bar overpressure)
- ISO 22899-1: 2007 - Resistance to Jet Fires
- ISO 22899-1: 2007 - Resistance to Jet Fires Following Gas Explosion
- NFPA 58: Annex H - Torch Fire and Hose Stream Testing
- Liquid Nitrogen Immersion (Cryogenic) Test
- GESIP GASAFE Testing Program

Material properties

Color and finish	Off-white, monolithic, spray texture
Alkalinity	12.0 - 12.5 pH
Sound absorption	0.35 Noise reduction coefficient (NRC)
Cure	By hydraulic set
Initial set	2 to 6 hours at 20°C (68°F) and 50% RH
Minimum practical thickness	8mm (5/16") unreinforced, 15mm (5/8") reinforced
Theoretical coverage	62m ² /tonne (15 Bd. Ft/Bag) at 25mm (1") thickness
Packaging	50lb bag in North America, 20kg bag elsewhere
Storage	Kept off the ground and dry until ready for use
Shelf life	Maximum 12 months
Health and safety	Material safety data sheet available upon request
Application	Industry & application specific manuals are available upon request

Physical testing performance

Physical Property	Test Method	Test Results
Density	ASTM E605	775kg/m ³ (48.4pcf) ±15%
Durometer hardness	ASTM D2240	40 (Shore D)
Compressive strength	ASTM E761	3778 kPa (548 psi)
Combustibility	ASTM E136 BS476	Noncombustible
Surface burning	ASTM E84	0 flame spread, 0 smoke developed
Deflection	ASTM E759	No cracking, delamination or spalling
Impact resistance	ASTM E760	No cracking, delamination or spalling
Thermal conductivity	ASTM C518	1.5 BTU in/hr ft ² (0.216W/mK) at 75°F (24°C)
Corrosion resistance	ASTM E937	Does not promote corrosion of steel
Fungal resistance	ASTM G21	0 Rating - No fungus growth

All physical & mechanical values are averages based on standard production and tested according to standard procedures. These typical values are given for guidance. The figures can change depending on the test methods used.



Jet fire test



Gas explosion test



Preparation

Typical substrate
Concrete and steel

Substrate preparation

The substrate must be clean, dry and free from visible moisture (including condensation), concrete laitance, formwork release oils, loose millscale, loose rust and any other condition preventing good adhesion. Concrete curing agents should not be used.

Mesh reinforcement

Most fire tests conducted have been carried out without mesh reinforcement, to demonstrate the ability of Cafco FENDOLITE®-MII to stay in place under the most severe fire conditions. However, for maximum long term service durability, the use of mesh is recommended. The use of mesh is mandatory where resistance to gas explosion is required.

Application

Initial steps

Application of Cafco FENDOLITE®-MII must be carried out by an applicator recognized by Promat and applied in accordance with the installation guides available from Promat.

Methods

Mix Cafco FENDOLITE®-MII with potable water in a suitable mixer and apply using equipment approved by Promat. Cafco FENDOLITE®-MII may also be float or roller finished or left. A hand applied patching mix is available for minor repairs. Please refer to product data sheet of Cafco FENDOLITE®-MIIT.

Limitations

Cafco FENDOLITE®-MII may be applied when the substrate and air temperatures is at least 2°C (36°F) and rising, but should not be applied if the substrate or air temperatures is less than 4°C (39°F) and falling. Maximum substrate and air temperature should not exceed 50°C (122°F). Substrate should be at least 2°C (36°F) above dew point temperature.

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