INTRODUCTION
Cafco FENDOLITE® MII / Cafco FENDOLITE® TG are cement / vermiculite coatings that can provide up to 240 minutes fire protection to structural steel sections in interior or exterior applications. (For exterior applications a suitable topcoat system must be applied).

Cafco FENDOLITE® MII / Cafco FENDOLITE® TG can be applied directly onto clean bare ‘ginger’ steel for internal use.

All other conditions will require some form of substrate preparation. This may simply be degreasing, de-scaling or the removal of loose rust from unprimed steel, but primed or galvanised substrates will require pre-treatment before Cafco FENDOLITE® MII / Cafco FENDOLITE® TG can be applied.

If the steel is in an exterior application it must be primed using a suitable primer to provide long term corrosion protection. It is, however, for the building designer to decide whether the risk of corrosion in an interior environment warrants the use of a priming system.

Promat Cafco sprayed products are only applied by Promat Cafco Recognised applicators (Promat CRA), who are trained in the correct mixing and application techniques required for the particular product.

The most important factor for the contractor to consider is the compatibility of the spray product with the surface it is being applied to – it must stick to it and stay there.

It is therefore the Promat CRA Contractor’s responsibility to ensure that the substrate to be protected is in a suitable condition to accept the coating and that any applied primer is fully cured.

PRIMER COMPATIBILITY
Cafco FENDOLITE® MII / Cafco FENDOLITE® TG must only be applied onto primers that are in good condition. The primer must be clean, dry and free from dust, oil or any other contaminant that may inhibit good adhesion.

In refurbishment situations, where spray products may have to be applied over old, or existing primed and painted steelwork (that may be in an unsound or poor condition) the paint types will need to be clearly identified and established as being compatible or incompatible with Cafco FENDOLITE® MII / Cafco FENDOLITE® TG before any attempt is made to apply the product.

Existing paints may need to be removed if they are of a type that can have an adverse reaction, or that may cause adhesion problems with the Cafco FENDOLITE® MII / Cafco FENDOLITE® TG coating.

If the primer used cannot be clearly identified from this technical note, or there is still doubt about the primer compatibility, a technical data sheet for the primer should be forwarded to Etex Building Performance technical team for clarification before any application work is carried out.

Any damage to the primer must also be repaired and the primer applied in accordance with the manufacturer’s guidance

- For compatible primers and galvanised steelwork (with the exception of vibration or movement allowance requirements) Cafco FENDOLITE® MII / Cafco FENDOLITE® TG are always applied onto a KEYCOAT to achieve correct adhesion. The KEYCOAT is a specific mix of diluted CAFCO® SBR Bonding Latex and Cafco FENDOLITE® MII.

- For incompatible primers, Cafco FENDOLITE® MII / Cafco FENDOLITE® TG are always applied onto CAFCO® PSK101 which provides a sealer coat forming a barrier to the incompatible paint and bonding surface for the Cafco FENDOLITE® MII / Cafco FENDOLITE® TG

- Where there is a requirement for vibration or movement allowance, Cafco FENDOLITE® MII / Cafco FENDOLITE® TG are always applied onto CAFCO® PSK101 even if the primer is of a compatible type such as a Two-pack Epoxy Resin. Mesh reinforcement will also be required, see TDS 137 for more details.

APPLICATION TO POLYURETHANE (PU), TO ANY OTHER TOPCOAT - OR TO ANY GLOSSY PRIMER

Structural steel sections can be shipped and delivered to site with a primer, intermediate coat and a topcoat system already applied, so that the steels are corrosion resistant prior to transportation and are aesthetically acceptable to the client.

On the very rare occasions, when Polyurethane (PU) or other topcoat are found to have been applied, the topcoat should be completely removed by sweep blasting - taking care to only remove the topcoat paint, and not the primer paint layers beneath it.

Or, as an alternative to sweep blasting, the Polyurethane or other topcoat surface (or glossy primer) must be thoroughly mechanically abraded over the entire surface (using power sanding tools) so that any shiny gloss finish of the paint is removed to give a matt surface to permit adhesion of the Cafco spray coating.

(In cases where intumescent fire resistant paint coatings may have been applied, then the coating must be completely removed back to bare metal if Cafco FENDOLITE® MII / Cafco FENDOLITE® TG are to be subsequently used.)

AUTHORITY: PROMAT RECOMMENDATION - BASED ON IN-HOUSE KNOWLEDGE AND TECHNICAL EXPERIENCE
APPLICATION TO COMPATIBLE PRIMERS / GALVANISED STEELWORK

Compatible primer types must be stable when exposed to the alkaline pH of 12-12.5 of the Portland cement contained in Cafco FENDOLITE® MII / Cafco FENDOLITE® TG.

Compatible primers are:
- Two-pack Epoxy Resins
- Epoxy MIO (Micaceous Iron Oxide)
  Note: This does not include Alkyd MIO types, as they are not compatible.
- Zinc-Rich Epoxy
  Note: If Zinc-Rich Epoxy primers are left exposed for long periods, zinc salts may form on the surface of the primer. Steels should be rinsed with clean water and scrubbed if necessary, to remove any salts, and then allowed to dry before application of the KEYCOAT and Cafco FENDOLITE® MII or Cafco FENDOLITE® TG in the normal manner.
- Zinc Silicate primers - caution see note below
  Note: Organic / Inorganic Zinc Silicate primers are a special case. They are porous and in our opinion, are not directly compatible Cafco FENDOLITE® MII / Cafco FENDOLITE® TG. In order to apply Cafco FENDOLITE® MII / Cafco FENDOLITE® TG to surfaces primed with this material, it is essential that the zinc silicate primer is cleaned with fresh water (if required to remove zinc salts) and when dry, a 25-30 micron tie coat/mist coat of an epoxy primer must be applied and cured in accordance with the manufacturer’s recommendations. Once the tie coat is cured, this may be treated as a compatible substrate and KEYCOAT and Cafco FENDOLITE® MII / Cafco FENDOLITE® TG may be applied in the normal manner.

SPRAY APPLICATION OFCAFCO FENDOLITE® MII / CAFCO FENDOLITE® TG ONTO COMPATIBLE PRIMERS / GALVANISED STEELWORK.

For application of Cafco FENDOLITE® MII / Cafco FENDOLITE® TG onto compatible primers, a KEYCOAT is always required to achieve correct adhesion. The KEYCOAT (sprayed at 20-50% coverage as a ‘spatter coat’), must be allowed to cure for 10-36 hours - depending on ambient drying conditions, before application of Cafco FENDOLITE® MII / Cafco FENDOLITE® TG.

Cafco FENDOLITE® MII / Cafco FENDOLITE® TG must be applied in the minimum number of built-up layers to achieve the final coating protection thickness. Layers must be allowed to dry for 2-6 hours between coats.

Full details of the KEYCOAT are given in the Cafco FENDOLITE® MII Construction Application Manual.

Note: KEYCOAT is a specific mix of diluted CAFCO® SBR Bonding Latex and Cafco FENDOLITE®.

APPLICATION TO INCOMPATIBLE PRIMERS

Incompatible primer types are those that are alkali sensitive and can therefore react with the high alkaline pH of Cafco FENDOLITE® MII / FENDOLITE® TG eg those containing an Alkyd binder.

Incompatible primers are:
- Single-pack Alkyds
- Single-pack Oil Based materials
- Red Oxide primers
- Alkyd MIO (Micaceous Iron Oxide).

Notes: Single-pack alkali sensitive alkyds and oil based materials

Saponification is a chemical reaction that can occur between a single pack alkyd or oil based primer and the Portland cement in Cafco FENDOLITE® MII / FENDOLITE® TG. This can take up to three months to become evident and is usually characterised by a regular vertical cracking pattern in the web or horizontal cracking on the flange tips (particularly on the bottom flange). This reaction results in bond loss and detachment of the Cafco FENDOLITE® MII / FENDOLITE® TG from the surface and can be identified by a hollow ringing sound when the Cafco FENDOLITE® MII / FENDOLITE® TG is tapped with a tool handle.

APPLICATION OF CAFCO FENDOLITE® MII / FENDOLITE® TG ONTO INCOMPATIBLE PRIMERS

For the application of Cafco FENDOLITE® MII / FENDOLITE® TG onto an incompatible primer, a coat of CAFCO® PSK101 is required to provide a complete alkali resistant barrier and act as a bonding coat for the Cafco FENDOLITE® MII / FENDOLITE® TG.

CAFCO® PSK101 is a dark green coloured water-based synthetic latex. In addition to CAFCO® PSK101 forming a barrier to incompatible paints, the ‘rubber-like’ coating also ensures correct adhesion of the Cafco FENDOLITE® MII / FENDOLITE® TG. It can also be used on any primed beam where there is a requirement for vibration or movement allowance.

- After the CAFCO® PSK101 coat has been applied, Cafco FENDOLITE® MII / Cafco FENDOLITE® TG must be applied within 2 months OR the surface must be washed and CAFCO® PSK101 re-applied.
- CAFCO® PSK101 must never be used as a primer onto bare steel.
- CAFCO® PSK101 must never be allowed to freeze during storage or transportation. Frozen material must be rejected and removed from site.

Further details are given in literature and the Cafco FENDOLITE® MII Construction Application Manual.

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