# Promat

#### **INTRODUCTION**

Recommendations regarding the use of mesh or metal lathing support with Cafco FENDOLITE® MII / Cafco FENDOLITE® TG and Cafco MANDOLITE® CP2 are contained in Section 6 of their respective Application Manuals but for simplicity and ease of reference it has been decided to bring these recommendations into a single document.

Notwithstanding this, all requirements of the relevant product application manual shall be observed.

### REQUIREMENTS

In the majority of construction applications, Cafco FENDOLITE® MII / Cafco FENDOLITE® TG and Cafco MANDOLITE® CP2 do not require the use of mesh reinforcement or metal lathing support to fulfil their function.

The need for mesh reinforcement will be determined if any of the following conditions are found to exist:

- There is no re-entrant detail present (Cafco FENDOLITE® MII / Cafco FENDOLITE® TG and Cafco MANDOLITE<sup>®</sup> CP2)
- Offsite application is proposed or undertaken (Cafco FENDOLITE<sup>®</sup> MII / Cafco FENDOLITE<sup>®</sup> TG only)
- Exterior application (Cafco FENDOLITE® MII / Cafco FENDOLITE® TG only)
- Vibration, mechanical damage and / or possibility of de-bonding exist
- Section dimensions dictate use of mesh i.e. web depth between the flanges exceeds 650mm; flange width exceeds 325mm; diameter of a CHS exceeds 325mm or when any face of a RHS or SHS when used as a beam exceeds 325mm
- Where a continuous application is required between two adjacent but separate surfaces (but not bridging a movement joint).
- Where "solid fill" of a small steel section is required.

The need for metal lathing support will be determined if any of the following conditions are encountered.

- Boxed or hollow encasement is required using Cafco FENDOLITE® MII / Cafco FENDOLITE® TG.
- To provide support where unsuitable backgrounds require the application of Cafco FENDOLITE® MII / Cafco FENDOLITE® TG or Cafco MANDOLITE® CP2. This includes substrates such as old, unknown or multi layer paint systems and substrates previously protected with or contaminated with asbestos.

#### MESH REINFORCEMENT

When mesh is required, it should be one of the following depending upon environmental exposure condition:

- Galvanised hexagonal mesh of size 50mm x 50mm x 1mm (interior use only)
- Galvanised hexagonal mesh of size 50mm x 50mm x 1.4mm - 1.6mm (exterior or interior use)
- CAFCO<sup>®</sup> Plastic Coated Galvanised Mesh (exterior or interior use)

When complete meshing of a beam or column is required care should be taken at the mesh joint overlaps to ensure that the spray is able to penetrate all the way through the mesh and adhere to the substrate. For this reason Promat recommend the use of 50mm x 50mm mesh in this application.

#### **METHODS OF USE**

Hexagonal mesh reinforcement (of the type appropriate to exposure condition) shall be secured to the profile of steel section and located substantially within the mid third of the required coating thickness.

Note: When hexagonal mesh reinforcement for a "solid fill" application of a small section is undertaken the mesh shall be located in the mid third of the applied thickness when measured from the flange tip / flange face.

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The mesh should be secured to the steel substrate by means of CAFCO® Helical CD Weld Pins, **OR** standard 3mm stud (Capacitor Discharge) welded pins /nails (supplied by Cutlass Fasteners or Taylor Stud Welding) **OR** percussion (shot fired) fixings (available from Hilti or Spit Fixings) at maximum 400mm centres on a staggered or diamond pitch as shown in Item 6.4.1 of both the Cafco FENDOLITE® MII / Cafco FENDOLITE® TG and Cafco MANDOLITE® CP2 application manuals.

Note the following points:

- The fixing centres are applicable **irrespective** of which type of hexagonal mesh reinforcement is used.
- If CAFCO® Plastic Coated Galvanised Mesh is used it may be secured by use of CAFCO® Helical CD Weld Pins (which require no clips) OR standard CD Weld Pins / Nails with galvanised non return (Speedfix) washers.
- If standard / straight CD Weld pins / nails are used, reinforcement mesh shall be secured by use of galvanised non return (Speedfix) washers.
- Galvanised mesh reinforcement shall not be secured by use of CAFCO® Helical CD Weld Pins since these pins are manufactured from stainless steel and there is potential for bi-metallic corrosion of the mesh to be initiated due to dissimilar metal contact.

### VIBRATION

Where there is a risk of vibration of the steel substrate, which may lead to bond loss and / or cracking of the Cafco FENDOLITE® MII / Cafco FENDOLITE® TG or Cafco MANDOLITE® CP2, one coat of CAFCO® PSK101 at a wet film thickness of 100 - 150 microns (corresponding to a dry film thickness of 55 - 82 microns) shall be applied to the primed or galvanised substrate in addition to the appropriate hexagonal mesh reinforcement.

CAFCO® PSK101 contains an elastomeric binder and will provide a degree of flexibility at the substrate resulting in a significantly reduced risk of vibration being transmitted into the applied cementitious coating which could cause bond loss and / or cracking.

# NOTE

The use of any type of hexagonal mesh reinforcement does not preclude the requirement for CAFCO® PSK101 on an incompatible steel primer or where vibration is anticipated, or the use of a keycoat on primed compatible steelwork where no vibration is expected. The reason being that although mesh will ensure that the applied product remains in place, it will not assist in bonding or prevent bond loss. Only unprimed steel substrates, where no vibration is expected and which are free from loose rust, mill scale or any other material that may impair adhesion, are suitable for direct applications of Cafco FENDOLITE® MII / Cafco FENDOLITE® TG or Cafco MANDOLITE® CP2. Mesh reinforcement may still be required if section dimensions or application conditions as previously described dictate its use.

## METAL LATH SUPPORT

Metal lath shall be used when a boxed or hollow encasement is required using Cafco FENDOLITE® MII / Cafco FENDOLITE® TG. It is also used to provide support where the underlying substrate is incompatible or contaminated.

Note the following points:

- Cafco MANDOLITE® CP2 is not suitable for hollow / boxed method of application.
- Hollow / boxed method of application of Cafco FENDOLITE® MII / Cafco FENDOLITE® TG and Cafco MANDOLITE® CP2 is not recommended for offsite application due risk of damage in transit.
- Hollow / boxed application is not suitable if there is a risk of vibration at the substrate.

## METAL LATHING TYPES

When metal lathing is required, it should be one of the following.

- Galvanised expanded metal lath ref BB264 (Expanded Metal Co) or equal at 1.61kg/m<sup>2</sup>
- Galvanised ribbed metal lath eg Riblath 271 (Expanded metal Co) or equal at 2.22kg/m<sup>2</sup>
- Stainless ribbed metal lath e.g Riblath 267 (Expanded Metal Co)

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The use of mesh reinforcement with Promat spray products

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For hollow / boxed encasement applications or applications to contaminated steel substrates, expanded metal lath (BB264 or equal) or Riblath 271 shall be attached to the substrate by use of standard CD weld pins / nails at maximum centres of 400mm / 600mm respectively and secured by the use of nonreturn (Speedfix) washers.

In either case it is essential to ensure that the lath is spaced away from the substrate by approximately 6mm by the use of suitable spacers or in the case of Riblath 271, that the ribs face the substrate so as to allow penetration of the applied coating through the lath.

It is also essential that the lath is fixed, overlapped and secured fully in accordance with the manufacturer's instructions.

If there is a requirement to use stainless steel Riblath 267 it shall be secured by the use of suitable stainless steel pins / nails and non-return (Speedfix) washers or suitable stainless steel percussion fixings (at maximum 600mm centres).

For 4 sided applications to steel columns, lath may also be attached to steel banding strapped around the steel at maximum 600mm centres by use of 1mm - 1.4mm galvanised steel wire ties at approximately 150mm centres.

If the hollow encased application is in an exterior environment (Cafco FENDOLITE® MII / Cafco FENDOLITE® TG only) there will also be a requirement for mesh reinforcement (exterior grade) to be incorporated within the mid third of the applied thickness.

This mesh may either be attached to the same CD weld pins that the lath has been attached to (if sufficient in length) or may be attached to the lath by pre-attached galvanised wire ties at maximum 400mm centres.

For a 4 sided application, the mesh may also be wrapped around the column after application of approximately half thickness and secured to itself by use of galvanised wire ties or twisting cut ends of the mesh together at approximately 150mm centres.

Requirements for mesh / lath overlap and wire ties are fully detailed in Section 6 of the application manuals which must be read in conjunction with this Technical Data Sheet.

### METAL LATHING USED AS INDEPENDENT SUPPORT

Metal lath may also be used to provide independent support when spraying over unsuitable backgrounds such as old, unknown or multi layer paint systems and substrates previously protected with or contaminated with asbestos. Drilled expanding anchors (at the same centres as for mesh) will be required to fix metal lathing to contaminated concrete substrates. Whilst Cafco FENDOLITE® MII / Cafco FENDOLITE® TG and Cafco MANDOLITE® CP2 may be used for this purpose it is often more appropriate to use a Promat board product and the Etex Building Performance technical team can provide more details on request.

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