

## SHORT FORM

Routine maintenance performed through testing and inspection of Spray-Applied Fire Resistive Materials (SFRMs) ensures that the product will be in-place for its intended life cycle.

Petrochemical structures are continually exposed to severe environments. As a result, the fireproofing system is susceptible to damage caused by items such as impact and weathering.

A Maintenance program is essential to maintain the integrity of a completely installed fireproofing system. The complete system consists of the steel substrate (i.e. galvanized or primed/coated), metal lath or mesh, anchoring system (i.e. shots, pins, studs and/or wire ties), the fireproofing material, along with the sealer/top coat (if required) and caulking system.

A complete survey of the fireproofing is needed in order to maintain the system and project future cost of the Maintenance Program.

The survey must be conducted by a N.A.C.E. Inspector with knowledge of the fireproofing system, and recommended and approved by Isolatek International.

The procedures outlined below are intended as a guide for conducting your maintenance program. The N.A.C.E. inspector will need a complete copy of the drawings (steel, equipment and support) for mark up, along with access to the project site. The drawings are to remain with owner and/or owner's rep upon completion of survey.

The N.A.C.E. Inspector will divide the survey in segments (i.e. pipe rack, equipment, HCU unit, Alkyd unit, Diesel unit, etc.) so that all areas and units have their own cost / breakdown for tracking purposes.

### 1.0 INSPECTION

**1.1 The N.A.C.E. Inspector will inspect and record on the drawings all areas of concern including but not limited to locations where:**

- a. Fireproofing system is damaged
- b. Corner bead is damaged (if used)
- c. Previous repaired areas
- d. Delamination areas
- e. Cracking
- f. Mildew
- g. Chemical stain/damage areas
- h. Wet areas
- i. Top coat/sealer failure
- j. No caulk or improperly applied caulk
- k. Areas that may have steam discharge onto the system

**1.2 The N.A.C.E. Inspector shall submit to the owner and/or owners representative all of the drawings with the mark ups, along with a written procedure to complete all of the necessary repairs of the fireproofing system in accordance with Isolatek International's guidelines.**

### 2.0 DECISION

**2.1 Inspector must ascertain which observed items require attention within the current maintenance cycle, based on one or both of the following criteria:**

- a. A repair (i.e. fissure or crack) which may allow moisture and chemical ingress / accumulation behind the fireproofing material.
- b. Aesthetic appeal

### 3.0 REPAIR

**3.1 Termination Seal Delamination and/or Cracking**

1. Strip away the old caulk to reveal the original surfaces. This must occur a minimum of 6 inches (150 mm) beyond the problem area in both directions.
2. Re-apply an approved compatible caulk in its place.

**3.2 Topcoat Failure**

1. Remove all peeling topcoat by adhering to SSPC-SP 2 (hand tool cleaning).
2. Ensure surface is free from dust and other contaminants.
3. Apply new approved topcoat.

### 3.3 Prior Repair or Patch Failure

1. Remove existing/damaged patching material down to steel substrate/reinforcement, chamfering sharp edges to leave only sound material in place.
2. Attach a new piece of 3.4 lb/yd<sup>2</sup> (1.84 kg/m<sup>2</sup>) expanded metal lath or mesh reinforcement into the void by either attaching to existing reinforcement via No. 18 SWG tie wire, or by attaching to the substrate via powder actuated fastener or studwelder. If hexagonal mesh is used in the original application, attach a new piece of plastic coated hexagonal mesh or mesh of 50mm x 50mm x 1.4mm – 1.6mm galvanized hexagonal mesh to the existing mesh using 18 SWG wire ties (or twist cut ends together) and maintain a 2 inch (50 mm) overlap at all joints.
3. Position the new reinforcement within the middle third of fireproofing thickness.
4. Pre-wet the existing CAFCO® FENDOLITE® M-II/P / ISOLATEK® Type M-II/P fireproofing material.
5. Apply freshly mixed CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P material into the void, taking care to push the material behind the reinforcement and completely filling the void.
6. Wait approximately 7 to 10 days before re-applying the approved topcoat (if necessary).

### 3.4 DAMAGE TO CORNER BEAD (IF USED) AND/OR OTHER REINFORCEMENT

1. Cut away bent or broken corner bead, lath or mesh and strip away adjacent fireproofing a minimum of 6 inches (150 mm) beyond the repair area in all directions down to steel substrate / reinforcement and chamfer all sharp edges leaving only sound material in place.
2. Attach a new piece of corner bead to the existing 3.4 lb/yd<sup>2</sup> (1.84 kg/m<sup>2</sup>) expanded metal lath using No. 18 SWG steel tie wire. If hexagonal mesh was used in the original application, attach a new piece as previously described in 3.3.2 above and ensure that it will lie in the mid third of the freshly applied repair thickness.
3. Pre-wet the existing CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P fireproofing material surrounding the repair area.
4. Apply freshly mixed CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P, flush with surrounding/existing material.
5. Wait approximately 7 to 10 days before re-applying approved topcoat (if necessary).

### 3.5 SIGNS OF RUSTING BEHIND FIREPROOFING (BLEED-THROUGH).

1. Remove all CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P material to a minimum of a 12 inch (300 mm) radius around the problem area, down to the steel substrate/reinforcement.
2. Observe rusting of surface of steel. In the case that the project inspector feels that the rusting goes beyond the exposed area, strip away the CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P until the rusting has ceased.
3. Strip away existing reinforcement.
4. Remove loose rust from the steel surface as per SSPC-SP 2/3 Hand and/or Power tool cleaning.
5. Ensure that the area is free from loose mill scale, oils, dust, or other contaminants.
6. Apply Epoxy Mastic/DTR or other approved surface tolerant epoxy to the surface. The coating must be compatible with the existing coating and the fireproofing material.
7. Apply new reinforcement. Attached with powder actuated fastener or studwelder. Studwelds will require additional surface preparation (i.e. grinding down areas to bare metal, pinning, and final touch-up with Mastic/DTR or approved surface tolerant epoxy).
8. Pre-wet the existing CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P fireproofing material surrounding the repair area.
9. Apply freshly mixed CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P, flush with surrounding/existing material.

The above-mentioned application procedure is applicable to structural steelwork in petrochemical and hydrocarbon processing facilities and shall be read in conjunction with the specific requirements of the client as detailed in any specification prepared for the project.

Unless directed to the contrary in the procedure, CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P must be stored, mixed, applied, controlled and repaired in accordance with Isolatek International's latest CAFCO FENDOLITE M-II / ISOLATEK Type M-II, CAFCO FENDOLITE TG / ISOLATEK Type TG, CAFCO FENDOLITE M-II/P / ISOLATEK Type M-II/P Application and Installation Manual.

Should you have further questions pertaining to this matter, please contact the Isolatek International Technical Service Department at 800.631.9600, extension 269.



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