Introduction

This specification covers general requirements for materials and workmanship for the off-site fire protection of structural steelwork. Fire protection shall be provided using the Promat FENDOLITE® MII System as manufactured by Promat.

For off-site applications, generally, beams and columns should be supported on their ends at a convenient working height to enable the fireproofing operation to be carried out without obstruction. Beams may be supported to suit site lifting/transport arrangements and care should be taken to minimise potential damage due to excessive handling.

Promat FENDOLITE® MII is generally resistant to adverse weather conditions once it has achieved its initial set, but Promat recommend that beams and columns should be sprayed and stored under cover in a position such that they are allowed to cure and dry for a minimum of seven days. This is important in order that the Promat FENDOLITE® MII has gained its maximum possible strength during the 7 day curing period prior to further handling and shipment. Promat FENDOLITE® MII should be mixed and applied strictly in accordance with the current Promat FENDOLITE® MII & FENDOLITE® TG Energy Industries Application Manual, unless directed to the contrary in the recommendations listed below.

Workmanship

1. Shotblast the steelwork to SA 2.5 to remove millscale.
2. Apply priming system in accordance with client's specification.
3. Load and transport to allocated workshop area for fireproofing.
4. Off-load on to suitable stillages / layout for Promat CRA Contrator. (Stillages shall be approximately 1000mm high.)
5. Apply PROMAT® Helical CD Weld Pins
   - 5.1. Grind off existing primer to bright metal (minimum area only to allow good electrical contact for 2mm diameter PROMAT® Helical CD Weld Pin).
   - 5.2. Attach stainless steel PROMAT® Helical CD Weld Pins and wire brush to remove slag, etc., from weld area.
     NOTE 1: The pins shall be positioned on 400mm maximum staggered pitch within the termination ends. Elsewhere as detail dictates.
     NOTE 2: Pin test shall be carried out by a 90° rotation test as described in the QA /QC Procedure (Refer to the current Promat FENDOLITE® MII & FENDOLITE® TG Energy Industries Application Manual).
   - 5.3. No pins shall be attached to underside or exposed ends of beams.
   - 5.4. Repair existing primer and undercoat to client's specification in accordance with the primer manufacturer's recommendations.
6. All non-fireproofed areas shall be masked and protected prior to application of PROMAT® PSK101 and / or Promat FENDOLITE® MII.

7. Spray or brush apply one coat of PROMAT® PSK101 to a wet film thickness of 100-150 microns (55-82 microns DFT).
8. Apply the reinforcing mesh
   8.1. Attach PROMAT® Plastic Coated Galvanised Mesh to previously installed PROMAT® Helical CD Weld Pins.
   NOTE: The mesh shall lie substantially within the middle third of the finished Promat FENDOLITE® MII thickness.
   8.2. The mesh shall protrude beyond off-site fabrication termination of minimum of 2.5 mesh apertures clear of the Promat FENDOLITE® MII.
9. Spray apply Promat FENDOLITE® MII in the minimum number of coats to the specified thickness. Thickness tolerance shall be 0mm to +3mm. The final coat shall be at least 8mm thick to avoid cracking.
   For small steel sections (up to section heights of roughly 200-250 mm) the 'solid fill' method can be applied.
10. Float finish (free hand) to close down texture. Slope and float top surfaces to shed water.
11. Cut a 'U' shape groove (10mm x 10mm maximum) at Promat FENDOLITE® MII / steel junctions to receive polysulphide or silicone based mastic sealant.
    NOTE: Mastic sealant shall be applied after applying the PROMAT® TOPCOAT 200.
12. Apply PROMAT® TOPCOAT 200 in two coats to a WFT of 150 - 200 microns per coat (total DFT of 150 - 200 microns). Refer to Promat Technical Data Sheet EIDS 030.
    NOTE: The PROMAT® TOPCOAT 200 shall be kept back 100mm from the Promat FENDOLITE® MII edge and 'shop' terminations to enable matching up on site (i.e. to allow the trowel to ride on the Promat FENDOLITE® MII).
13. Apply a polysulphide or silicone based mastic sealant at Promat FENDOLITE® MII / steel junctions.
14. At the commencement of application, sample beams/columns protected with Promat FENDOLITE® MII shall be prepared by the Promat CRA Contractor to be used as a reference in matters of reinforcement, standard of finish, etc.

Quality control testing

Testing shall be carried out in accordance with the QA/QC Procedures detailed in the current Promat FENDOLITE® MII & FENDOLITE® TG Energy Industries Application Manual. One test per shift shall be carried out at the client's discretion.

Each test shall comprise:

- Wet Bulk Density Test
- Slump Test

NOTE: Log or record the test results and other information with regard to the progress of application of Promat FENDOLITE® MII.

Handling of steel elements after application of Promat FENDOLITE® MII

Beams and columns shall not be handled and transported until at least 7 days after the spray application of Promat FENDOLITE® MII has been completed (i.e. taking Promat FENDOLITE® MII completion as Day 1).

Lifting must be carried out using one of the following methods:

1. Flat 100mm wide reinforced webbing located around the Promat FENDOLITE® MII or unprotected ends.
2. Special brackets or similar attached to non-fireproofed ends of beams/columns.
3. Fork lifts on unprotected flange.

Transportation

After loading beams and columns, they may be transported on a flat bed lorry (or similar). Beams and columns should be supported on their unprotected ends by wooden blocks or bearers. The members may then be strapped down around the unprotected ends. If intermediate strapping is required, provision for packing between Promat FENDOLITE® MII and strapping should be made and packing material should be agreed by client prior to shipment.

Repair procedure

Repairs shall be carried out in accordance with Energy Industries Data Sheet EIDS 029.

On site hook-up

On site hook-up of the fireproofed steel elements shall be carried out in accordance with Energy Industries Data Sheet EIDS 017.

The information given in this Application Procedure is based on practical experience, independent and other tests and represents, in Promat's opinion, the best technical advice available. Since the products are applied under circumstances beyond our control, Promat can accept no direct or consequential liability, whether in contract or in tort, for the interpretation of such recommendations and reserves the right to modify the recommendations as necessary. Should it be unclear as to the meaning of any of the instructions given above, or if further information is required, please consult Promat.