

Promat

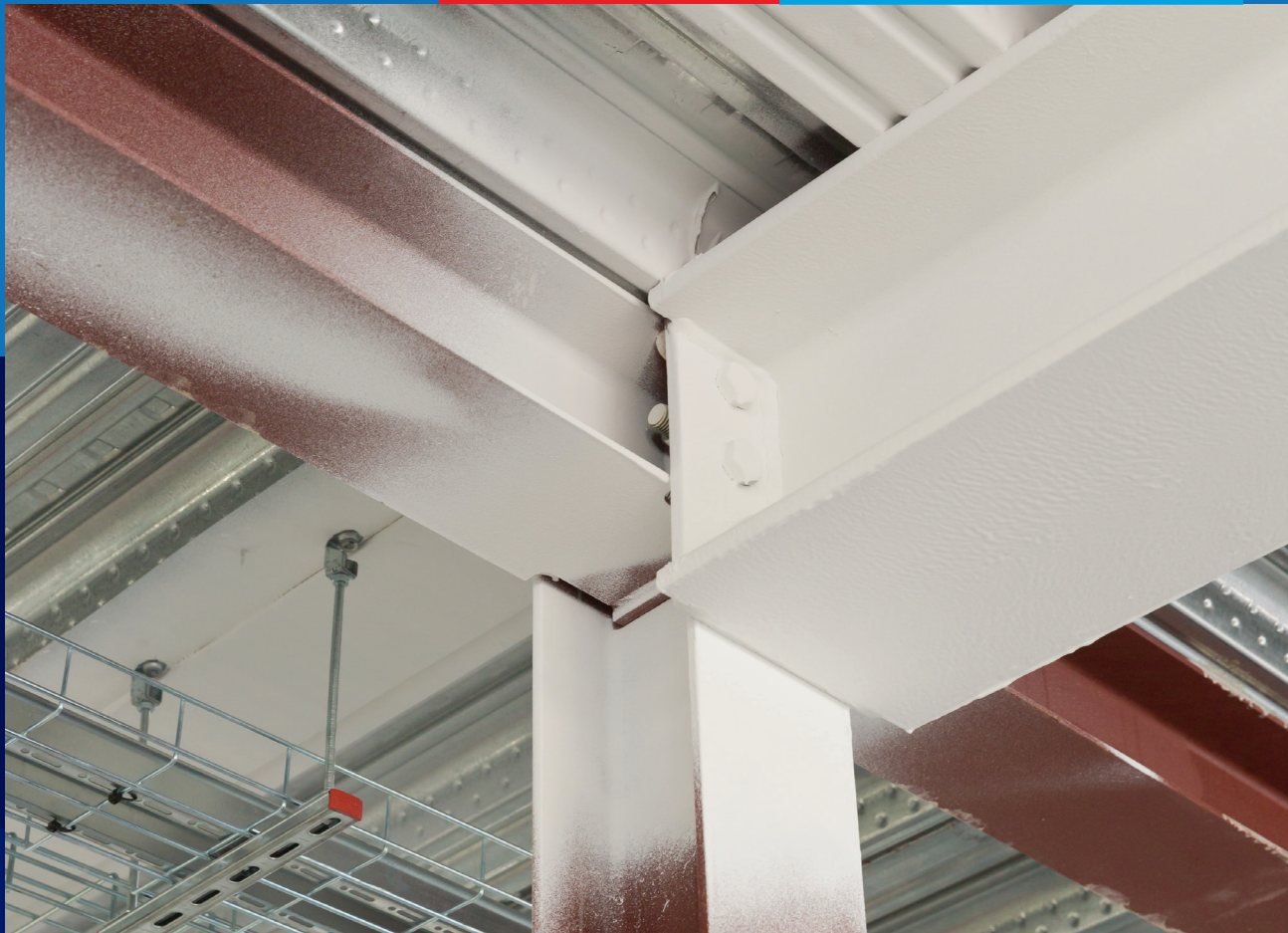


Structural
fire protection

PROMAPAIN[®]-SC3

Reactive fire protective coating

Application guide



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of living

PROMAPAIN[®]-SC3 Application guide

The following guidelines and recommendations are based on our best knowledge and experience. Nothing in these guidelines shall create or be deemed to create any obligation on the part of Promat. It remains the responsibility of the user to check the product and its use meets local legislation and regulatory requirements.

Specific application and/or installation details mentioned in classification documents, assessments and other approvals as well as in Promat technical data sheets must be followed.

General

PROMAPAIN[®]-SC3 is a waterborne intumescent coating consisting of resins and fillers and is designed for the fire protection of structural steelwork. In a fire, a chemical reaction takes place, causing the material to expand and form an insulating layer, which prevents the temperature of the steel from rising to a critical level.

For normal interior application, PROMAPAIN[®]-SC3 can be used without any additional, decorative top coat. For exterior, semi exposed or high ambient humidity applications, the addition of a topcoat is necessary - See the Protective and/or decorative top seal Section.

PROMAPAIN[®]-SC3 can be specifically used in areas where the application of solvent-based products are perceived to be an environmental hazard. Examples of such areas are: hospitals, health care centres, schools, public buildings or in fact any buildings that are occupied or attached to occupied areas. PROMAPAIN[®]-SC3 is preferably spray applied with airless paint equipment for speed and quality of finish. Brush and roller application is also possible.

PROMAPAIN[®]-SC3 is supplied ready for use and should not be diluted (only in specific case: maximum dilution with 5% water - see Application chapter). It should be stirred thoroughly with a rotar type mixer prior to application by either airless spray, brush or roller. It can be applied directly to the contour of primed I and H-sections of beams/columns and hollow sections to provide the necessary fire resistance levels. With regard to all statutory requirements for appropriate safeguards against exposing employees and the public to health and safety risks, the safety data sheet (SDS) can be requested from Promat. It should ALWAYS be read before working with the PROMAPAIN[®]-SC3 product.

Substrate preparation

Prior to the application of PROMAPAIN[®]-SC3 for internal or external structural steelwork, it is essential to apply an anti-corrosive primer.

Steelwork must be prepared to SA 2.5 Swedish Standard SIS 05 09 00 ; BS 7079: 1989; or Class 2.5: AS 1627: Part 4, before being coated with a compatible primer, listed in the ETA and/or in other documents approved by Promat, and applied in full compliance with the manufacturer's recommendations. An abstract of the ETA can be requested from Promat.

Surface should be blast cleaned no more than four hours prior to the application of PROMAPAIN[®]-SC3 and must be free from grease, oil, rust, dirt or any other contaminant that may inhibit the bonding of the PROMAPAIN[®]-SC3 to the primer.

All steel must be physically clean, dry and free from mud, concrete slurry, grease, zinc salts and other forms of contamination. Complete washing down of steelwork may be necessary. Oil & grease should be cleaned with specific solvent. Paint solvents (thinners) shall not be used for general degreasing or preparation of the surface for painting, due to the risk of spreading dissolved hydrocarbon contamination.

Generic compatible primers

The following types (family) of primers are recommended and generally compatible with PROMAPAIN[®]-SC3, according to the ETA document, based on ETAG 018-2:

- Alkyd primer
- Two component epoxy
- Zinc silicate (inorganic zinc)
- Epoxy zinc rich (organic zinc)
- One pack coating (96% zinc)

For any other primers, please contact your Promat technical office.

The primer thickness should be measured and recorded, prior to the application of PROMAPAIN[®]-SC3, in order to accurately check the thickness of the latter during and after application. A DFT (dry film thickness) reading must be taken as soon as the coating is fully cured, within a minimum 7 days. An electronic electromagnetic dry film thickness gauge may be used.

Galvanised structural steel

Galvanisation is the process of applying a protective zinc coating to steel or iron, to prevent rusting. The most common method is hot-dip galvanisation, in which steel elements are submerged in a bath of molten zinc. Newly galvanised steel is bright and shiny, and is pure zinc on the surface. This surface can be smooth, so during the first 24 to 72 hours after galvanising, only a slight roughening of the surface is needed to prepare the galvanised coating to be painted.

The adhesion of paint onto galvanised steel is always good when the steel elements have weathered for at least a one-year period, because the zinc corrosion products form a very dense, insoluble protective layer that accepts a paint coat readily. On the contrary, a brand new galvanised coating can experience adhesion problems within the first 24 to 72 hours after coating.

New galvanised steel should be clean, dry and free from any contamination including zinc salts and all chromate solution prior to painting. This can be achieved by using a biodegradable detergent wash and or Metal Conditioner and Degreaser (ISO 8504); this should also be removed by fresh clean water before any barrier coating is applied. In any event of a damaged primed surface, all loose flaking primer and mill scale must be thoroughly wire brushed and removed before reinstating the original primed surface with the primer/tie coat.

PROMAPAIN[®]-SC3 can be applied directly on galvanised steel, but in case of new galvanised steel (see above) or in high ambient humidity, it is recommended to apply an adhesion promoter primer such as Promat[®] TY-ROX, or equivalent, at the rate of 100 to 150g/m².

Inorganic zinc primer

Inorganic zinc primers are coatings containing metallic zinc, held in a silicate or others inorganic matrix. Inorganic zinc primers form a continuous layer of metallic zinc that provides cathodic protection to metal. Steel structures painted with inorganic zinc releasing product shall be treated with an intermediate two-component epoxy coat, or other suitable coat, and only after complete drying should PROMAPAIN[®]-SC3 be applied.

Zinc-rich organic primer

Zinc-rich primers are zinc paint highly loaded with metallic zinc dust (65-95% metallic zinc in dry film) encapsulated in a variety of organic resins, such as an epoxy, butyl or urethane. Most common zinc-rich primers are based on epoxy resin and a high percentage of zinc particles.

PROMAPAIN[®]-SC3 can be applied directly on zinc-rich organic paints, but, in case of potential chemical reaction between the primer and humidity, is recommended the application of an adhesion promoter primer such as Promat[®] TY-ROX, or equivalent, at the rate of 100 to 150g/m².

It should be noted that, where a zinc enriched epoxy primer has been exposed to external conditions for a significant period, it's possible for the formation of zinc salts on the surface of the coating, therefore the surface should be thoroughly washed down with fresh water using a stiff bristle brush, rinsed and allowed to dry fully prior to the application PROMAPAIN[®]-SC3 or Promat[®] TY-ROX. This will ensure the removal of any zinc salts, which could interrupt the intercoat adhesion. Where full removal of zinc salts cannot be guaranteed, the only safe option is to remove the zinc coating and re-prime the steelwork.

Compatibility / adhesion tests

Where steelwork has been previously primed with an unknown primer, it is most important that compatibility and adhesion tests are carried out, to ensure that the primer will remain intact in a fire situation. Adhesion is the resistance of paint coatings to separation from substrates, while compatibility in fire situation is the ability of a primer to be adherent to the steel surface and to the intumescent paint (not soften, flow or flake off) in case of fire exposure.

Additionally previously coated steelwork with thickness above 90 microns should be thoroughly tested for compatibility and adhesion in a fire.

Two types of evaluation can be runned:

- Compatibility / adhesion in "cold" conditions
- Adhesion in "fire" conditions

Adhesion in "cold" conditions

This is used to check if there is a good chemical compatibility between the products (primer and reactive coating) and if the adhesion is sufficient to guarantee the performance under normal (non-fire) service conditions. Compatibility / adhesion testing of coatings can be performed using two methods: the cross-cut method and the tensile pull-off method. There are international standards detailing both of these techniques.

Cross cut test

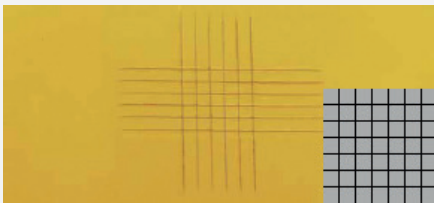
This test method specifies a procedure for assessing the resistance of paints and coatings to separation from substrates when a right angle lattice pattern is cut into the coating, penetrating through to the substrate.

Procedure

- Make a lattice pattern in the film with the appropriate tool, cutting to the substrate
- Brush in diagonal direction 5 times each, using a brush pen or tape over the cut and remove with Permacel tape
- Examine the grid area using an illuminated magnifier

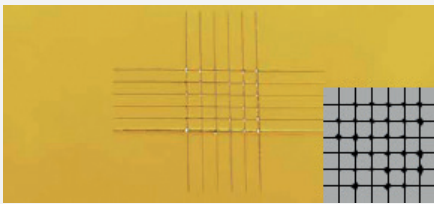
Cross-cut results

Adhesion is rated in accordance with the scale below.



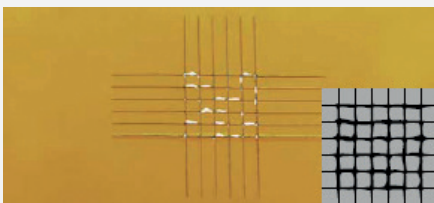
ISO Class.: 0 / ASTM Class.: 5 B

The edges of the cuts are completely smooth; none of the lattice is detached.



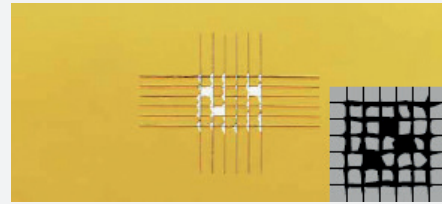
ISO Class.: 1 / ASTM Class.: 4 B

Detachment of small flakes of the coating at the intersections of the cuts. A cross-cut area not significantly greater than 5% is affected.



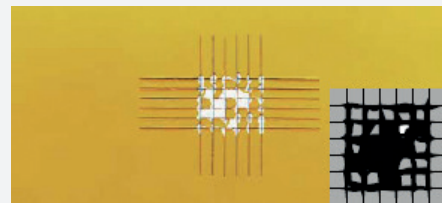
ISO Class.: 2 / ASTM Class.: 3 B

The coating has flaked along the edges and/or at the intersections of the cuts. A cross-cut area is significantly greater than 5%, but not significantly greater than 15%, is affected.



ISO Class.: 3 / ASTM Class.: 2 B

The coating has flaked along the edges of the cuts partly or wholly in large ribbons, and / or it has flaked partly or wholly on different parts of the squares. A cross-cut area significantly greater than 15%, but not significantly greater than 35%, is affected.



ISO Class.: 4 / ASTM Class.: 1 B

The coating has flaked along the edges of the cuts in large ribbons, and / or some squares have detached partly or wholly. A cross-cut area significantly greater than 35%, but not significantly greater than 65%, is affected.

ISO Class.: 5 / ASTM Class.: 0 B

Any degree of flaking that cannot even be classified by classification 4.

The method may be used for a quick pass / fail test. When applied to a multi-coat system, assessment of the resistance to separation of individual layers of the coating from each other may be made.

The following international standard are available:

- ISO 2409
- ASTM D 3359

Note:

The cross-cut test can be seen as a rudimentary and empirical test. Nevertheless this qualitative method is still useful. The classification score is the same whatever the operator, because for each score the scale is so large that it includes all possible source of errors encountered during the test. Coupling the removal of the tape with a dynamometer could be an improvement of the method to control the peeling load and have a quantitative measurement. However, a system to keep the peeling angle constant during the test would be necessary to limit the variability in the results.

Pull-off test

Adhesion of a single coating or a multi-coat system of paint, varnish or related products can be assessed by measuring the minimum tensile stress necessary to detach or rupture the coating in a direction perpendicular to the substrate according to the following international standard:

EN ISO 16276-1:

Describes procedures for assessing the fracture strength of a coating system using the pull-off method. Test cylinders, often called "dollies", are fixed to the surface of the coating using a suitable adhesive and a force is applied in order to cause a fracture in the coating beneath the dolly.

The equipment measures the force required to fracture the coating and it is reported in terms of force per unit area, e.g. MPa (psi). The standard also defines inspection areas, sampling plans and acceptance/rejection criteria for the pull-off adhesion test.

ASTM D4541:

Describes a procedure for evaluating the pull-off strength of a coating system and recognises that this is commonly referred to as adhesion. The test determines either the greatest perpendicular force that a coated surface can bear before a plug of material is detached or whether or not the coating remains intact when a prescribed force is applied.

Failure will occur at the weakest part of the coating system be that the steel substrate/primer coating interface, the intermediate coating to primer interface, other coating interfaces or even within a coating layer.

Note:

For both the ISO and ASTM methods, inspection of the face of the dolly after it has been pulled off the surface is crucial to the procedure and to the reporting of the outcome.

Adhesion in "fire" conditions

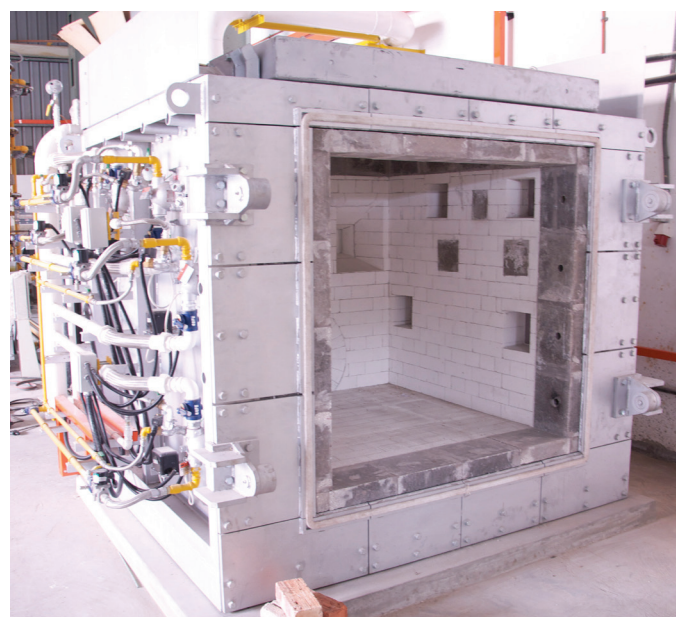
Promat can run fire tests on steel plates exposed to the time/temperature curve EN 1363-1 / ISO 834-1 in its own laboratories. Although these tests are not official, the results can be compared with the quality control fire tests performed daily by Promat in its laboratories. Promat can test different coating cycles and, if the results are comparable with those obtained during the quality control tests, can express a positive opinion about the performance of the cycle when exposed to standard fire curve.

To run an adhesion test in "fire" conditions, contact the local Promat office and provide a sample of the primer (1kg), the technical and safety data sheet.

Promat can release a full report with the necessary indication about compatibility and fire performances.

Note:

The fire tests can be done only after curing of the full cycle (normally from 3 to 5 weeks).



Fire test furnace

Site requirements

Prior to application of PROMAPAIN[®] SC3 the applicator should ensure that adequate services are available for the application process and site conditions are within the given parameters. These requirements may include some or all of the following:

- Power
- Ventilation
- Scaffolding
- Masking
- Lighting
- Waste disposal
- Services spray equipment and adequate spares
- High quality latex brushes and short mohair rollers

Reactive coatings require a greater degree of environmental monitoring than conventional non-reactive coatings. Water based coatings are generally moisture sensitive and must be protected against high humidity, rain and consequent water ponding particularly during onsite application, otherwise blistering and/or delamination could occur. All waterborne products react to high humidity, moisture condensation, rain and/or any water ponding when exposed.

Application conditions should be within the following limits during application and drying of the material with readings recorded a minimum of twice daily, at the beginning and end of the working day:

- Ambient air temperature between 10 and 35°C
- Humidity should not exceed 80%
- The surface must be dry and the surface temperature must always be a minimum of 3°C above the dew point. In line with good painting practice, application should not take place in conditions which are deteriorating, e.g. where the temperature is falling and is likely to go below 10°C or where there is a risk of condensation forming on the steel
- Air movement is the most significant factor affecting the drying of water-borne paints. Good air flow and ventilation are always recommended to ensure there are no areas around the structure without ventilation. With little air movement, it is possible that an increase in the local relative humidity will soon reach unacceptable levels, resulting in extended drying/overcoating times and poor performance. A ventilated air speed of 2 metres/second will improve drying characteristics, especially in high humidity environments
- Do not apply materials if condensation is present on the steel to be coated

Application

The dry film thickness and quantity of material required is dependent upon various factors including the fire resistance level required (R 30, 60, 90 or 120 minutes), type of section (mass factor), orientation, critical temperature of steel structure, application method, shape etc.

A calculation of the required wet and dry film thickness should be obtained prior to application. A test area should be completed by the applicator to establish the acceptance degree of finish for the project and should be agreed by all relevant parties.

The primer thickness should be measured and recorded prior to application of PROMAPAIN[®]-SC3 in order to accurately check the thickness of the intumescent after application.



Application

PROMAPAIN[®]-SC3 is a high viscosity (and thixotropic) product, it is possible that this may be effected when stored. It should be mixed with an air powered mechanical paint-mixing tool that is clean and fit for purpose. Only in case of low temperature of insufficient pressure of the pray equipment, the product can be diluted up to a maximum of 5% with clean fresh water.

Mechanically mix for about 1-2 minutes to ensure that the product is mixed to a uniform consistency and to fully incorporate all of the ingredients into a homogenous mixture. Slow speed mixers or mechanical mixers are highly recommended to ensure no aeration or air bubbles are formed during the mixing process. Manual mixing is not recommended.

Maximum thickness per coat at 20°C and 50% relative humidity:

- Spray: up to 700µm DFT in one coat (~ 1.020µm WTF)
- Brush/ roller: up to 350µm DFT in one coat (~ 510µm WTF)
- Consumption: ~ 1.85kg/m² to obtain 1.000µm DFT

Maximum thickness is also dependent upon steel section shape, degree of cosmetic finish required and skill of the applicator.

Drying times are dependent on temperature, air movement and relative humidity.

At 20°C and 50% R.H. : 8 hours on surface for 1000µm wet film thickness; 7/8 days completely dry.

Brush or roller application increases drying time by approximately 20%.

As a guideline, applicators may allow around 10% and 30% wastage for brush/ roller and spray application respectively. Again, this is dependent upon application conditions, the steel section size and the skill of the applicator.

Where the specified dry film thickness is greater than 700µm for spray or 350µm for brush, the total thickness should be built up in two or more applications. Prior to overcoating ensure the previous coat is dry. Particular attention should be paid to the internal angles of flanges and webs where excessive build up of paint can occur and air flow may be restricted.

Recoating at 20°C and 50% R.H.: 8 hours with the same product, after complete drying with other products.

Drying can be optimised by improving air flow, particularly in areas where natural air flow is restricted and by keeping relative air humidity as low as possible.

Note:

Complete curing time may vary according to the applied film thickness, temperature and particular environmental condition (relative humidity, ventilation etc.).

Application equipment

Spray

Spray equipment is the preferred method for speed and uniformity of finish.

A pneumatic, electric or diesel powered airless spray pump should be used, operating with a minimum of 175 bar fluid output pressure at the tip. A minimum pump ratio of 30:1, although 45:1 or 60:1 ratios maybe used for large projects

Check with pump manufacturer for exact recommendations.

Note:

It's highly recommended that the mesh filters commonly found in many airless spray units, both on the suction inlets and pressure sides of the pump assemblies, be removed prior to the application of the PROMAPAIN[®]-SC3 coating.

- Hose: high pressure, rated to match pump capacity, maximum length 50m, 10mm (3/8") internal diameter hose, providing minimum pressure is maintained at the spray tip.
- Spray gun: a contractor grade spray gun capable of handling a minimum 275 bar fluid pressure.
- Tip size: ranges from 0.025" to 0.031" (self-cleaning nozzle without diffuser). To minimise waste, the spray angle of the nozzle shall be chosen according to the type of the structure to be protected.

Note:

Promat recommend the use of a "bypass" type gun where the material "bypasses" the internal mechanical assemblies and is introduced directly before the spray tip.

Brush or Roller Application

Application by brush or roller is a suitable method, but is generally recommended for small areas and repairs only. Use a high-grade latex paint brush or a short pile roller. The appearance of brush or roller applied products will be different to that of the spray applied coating, which will provide the smoothest finish.

Note:

For speed of application and uniformity of finish, airless spray is the preferred method of application.

Rolling scaffold should be provided for applications that are not accessible from the floor. Scaffold should have large locking wheels that roll easily, and be equipped with safety railings around the perimeter approximately waist high and should be in full compliance with all local safety regulations.

Masking is required on all areas not to receive coating. Typically consisting of lightweight polyethylene plastic and masking tape.

Equipment cleaning

Although this is not mandatory, well-maintained airless spray equipment will perform well. Use only fresh water for cleaning (immediately after use) the machine, hose, gun and nozzle. All equipment containing solvent in the pump, hoses and gun must be cleaned carefully.

Cleaning solvent

Cleaning solvent: fresh water. The product is supplied ready for use in sealed containers and generally does not need to be diluted, but a maximum of 5% fresh clean water may be added depending upon application conditions (if water is added, the final DFT will need to be recalculated).

Thickness checks during application

During the application of PROMAPAIN[®]-SC3 measure the wet film thickness (WFT) frequently with a wet film thickness gauge. To use the wet film thickness gauge insert the teeth into the wet PROMAPAIN[®]-SC3 being careful not to press the gauge into any previously applied coats that may still be soft. The highest reading indicated on the last tooth showing paint on its tip is the wet film thickness of the most recent coat.

To determine dry film thickness based (DFT) on the wet film thickness (WTF), use the following formula:

D.F.T. (µm):	$\frac{\text{WFT } (\mu\text{m}) \times \text{S.V.R. (Solid Volume Ratio)}}{100}$
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For a rapid calculation multiply the wet film thickness by 0.69.



Wet film thickness gauge

Measurement of dry film thickness

After sufficient drying time a survey of the dry film thickness should be carried out using a suitable calibrated gauge. An electromagnetic induction instrument with a statistical function to store readings and give an average is most useful. Where dry film readings include a primer and/or topcoat an allowance must be made for these coatings and subtracted from the total reading.

The following is the recommended procedure for measuring dry film thickness and acceptance criteria (based on Section 4.7 Dry Film Thickness, ASFP Technical Guidance Document 11).

Readings should be taken on every steel section as follows:

I sections, Tee sections and Channels (open profile)

- Webs: two readings per metre length on each face of web
- Flanges: two readings per metre length on the outer face of each flange
- One reading per metre length on the inner face of each flange

Square and rectangular hollow sections and angles:

- Two readings per metre length on each face

Circular hollow sections:

- Eight readings per metre length evenly spread around the section

Where members are less than 2 metres in length, three sets of readings shall be taken, one at each end and at the centre of the member. Each set shall comprise the number of readings on each face as appropriate.

Correction of inadequate coating thickness

The importance of dry film thickness checking is emphasised where inadequate thickness is identified prior to application of the final sealer coat / decorative topcoat. In such situations, it is a relatively simple exercise to define the extent of the deficient area(s) and to apply further coat(s) of intumescent product to bring the overall thickness up to acceptable standards.

However, if low thickness is not detected until after the sealer coat /decorative top coat has been applied, in some circumstances it may be possible to remedy the situation by the application of further coats of intumescent paint (a compatibly and fire test are needed), but in the other extreme it may be necessary to remove previous coatings in order to build up the necessary fire protection from scratch.

Please ask local Promat technical office for detailed information.

Where the intumescent coating thickness exceeds the limits stated in the specification, please contact Promat for approval or check directly the maximum thickness tested on the same kind of structure (check classification reports / assessment or other official documents).



Protective and/or decorative top coats

The nature of the environment to which the coatings will be exposed may affect their durability or their performance in a fire situation. If necessary, a topcoat must be applied to the surface of the intumescent coating either as a protection against environment degradation or for decorative purposes. The topcoat should be specified, based upon the intended lifetime of the system and the environmental conditions.

PROMAPAIN[®]-SC3 is a water-based environmental friendly product, but it can be sensitive to high humidity or chemical aggression when exposed to external or extreme conditions.

In general, fire protective products will be influenced with regard to their working lives and durability by different degradation factors. These could be:

- Temperature
- Freeze/thaw
- Humidity (water vapour)
- Liquid water/rain
- UV exposure
- Pollution (e.g. for industrial regions: high SO₂, H₂S, NO_x; for coastal regions: high chloride levels)
- Biological attack

The following use categories are defined by ETAG 018 - 1 for the fire protective products:

- Outdoor use
 - Exposed to rain and UV
 - Not exposed to rain and UV
- Indoor use

More specifically, the use categories related to the type of environmental conditions are based on the general principles specified in "Part 1 General" of this ETAG, clause 2.2.2. The use categories are the following:

- Type X: Reactive coating system intended for all conditions (internal, semi-exposed and exposed).
- Type Y: Reactive coating system intended for internal and semi-exposed conditions. Semi exposed includes temperatures below zero, but no exposure to rain and limited exposure to UV (but UV is not assessed).
- Type Z1: Reactive coating system intended for internal conditions (excluding temperatures below zero) with high humidity.
- Type Z2: Reactive coating system intended for internal conditions (excluding temperatures below zero) with humidity classes other than Z1.

Note:

Products that meet the requirements for type X, meet the requirements for all other types. Products that meet the requirements for type Y, also meet the requirements for types Z1 and Z2. Products that meet the requirements for type Z1, also meet the requirements for type Z2. For interior space (Z2), a topcoat is optional.

PROMAPAIN[®]-SC3 can be applied also in high humidity conditions, semi-exposed or exposed conditions, if protected with specific topcoat (depending on the weather condition).

Prior to the application of the topcoat, the applicator must ensure that the specified dry film thickness of PROMAPAIN[®]-SC3 has been achieved. The surface of the intumescent coating must be clean, dry and free from contamination before over coating with the topcoat.

All chemically compatible topcoats can be applied to PROMAPAIN[®]-SC3, as long as the thickness is not excessive as this can influence the expansion characteristics. For generic topcoats, this value cannot exceed 90 microns. The following chemical families can be used for environmental protection of PROMAPAIN[®]-SC3:

- Alkyd
- Acrylic
- Polyurethane
- Epoxy

We recommend you contact local Promat technical office for any other specific information and in case of any doubt, please refer to section "Compatibility / adhesion test". PROMAPAIN[®]-SC3 has been assessed as having passed the requirement for use in exposure condition (as defined in the ETAG 018-2), with the following topcoats:

- External (X): two component acrylic polyurethane finish*
- Semi-exposed (Y): two component acrylic polyurethane*
- Hi-humidity ambient: alkyd*

(*) Contact your local Promat technical office for specific information.

Exposure PROMAPAIN[®]-SC3 when coated with suitable protective topcoat meets the Type X category of EAD 350402-00-1106 (formerly ETAG 018-2). This is a European based requirement and may consider performance based on European climates

Repair of coating - general recommendation

- Extensive damage (greater than 7cm² - bare steel exposed) shall be blast cleaned to Sa 2½ in accordance with ISO 8501-1
- Small damage (smaller than 7cm² - bare steel exposed) may be mechanically cleaned by abrasive sanding to a minimum standard of St 3 with a rough surface profile.
- Small damage to the surface of the coating of size less than 5cm² may be repaired by abrasive sanding or equal to roughen the surface.

Overlapping zones to intact coating shall be masked off to a minimum 200mm distance to the damaged area and the surrounding area must be covered so that overspray to the sound coating does not occur during repair application. When repairing PROMAPAIN[®]-SC3, the intumescent cannot be applied over top-coated areas.

Note:

This repair procedure applies to following areas:

- Areas of mechanical damage due to other site works
- Burn damage due to welding
- Coating damaged due to fixing additional brackets by welding
- Any other damage down to bare steel
- PROMAPAIN[®]-SC3 surface damage
- Damage caused by high humidity, moisture, entrapped air, etc. resulting in blistering

Damage to topcoat only

If only the topcoat is damaged, then remove loose unsound coatings and feather the rough edges. Ensure the surface is free from contamination, sound and dry before applying the topcoat to the recommended / specified dry film thickness.

Future inspection and maintenance

The fire protection properties of the intumescent systems will remain as long as the integrity of the coating is maintained and there is no degradation of the material. Regular inspections of the fire protection system should be carried out. Any damaged areas, defects etc. must be repaired as recommended above. The inspection intervals for a project should be stated in the specification. Typically, inspections should be carried out every two years, after the durability/ working lifetime (to be noted: durability is related to a specific exposure condition and will be project specific).

Extraordinary maintenance interventions, i.e. in case of damage of the intumescent system due to mechanical action, water adsorption, voluntary removal, etc., must be carried out immediately. Topcoats must be maintained as a continuous film to protect PROMAPAIN[®]-SC3 from the environment, when it's necessary. However, excessive build up of topcoat thickness could be detrimental to the fire protection system and must be avoided. As a guide, the maximum recommended number of topcoats is three applied at 30 microns DFT per coat (total thickness cannot exceed 90 microns, irrespective of the number of layers of topcoat applied).



Troubleshooting

Product not adhering to the substrate

- Non compatible primer, over or under cured
- Temperature, humidity, dew point and condensation outside specification
- Too much material applied in one coat
- Contamination on the substrate
- Product has been diluted too much
- Previous coat not cured

Slow drying time

- Temperature and humidity level outside specification
- Material applied in too greater thickness per coat
- Product has been diluted too much
- Top coat applied too soon, previous coat not cured
- Additional coats of PROMAPAIN[®]-SC3 applied too soon, previous coat not cured sufficiently

Product not spraying or flowing

- Check equipment tips, pressure, blockages, hose diameter/ length
- Equipment may not be clean
- Product too cold
- Shelf life of product expired
- Lid left off container for too long
- Material not adequately stirred prior to use
- Filters left in place

Bubbles and blistering within coating

- Primer contaminated or not compatible
- PROMAPAIN[®]-SC3 applied before primer is cured
- Substrate temperature too high
- Spraying pressure too high or gun held too close to substrate surface
- Roller application too vigorous
- Product has been diluted too much
- Equipment not clean
- Temperature, humidity, dew point and condensation outside specification

Adhesion failure

- Water damage i.e. exposed to inappropriate weather
- Condensation entrapment
- Product applied over incompatible surface or primer
- Contamination of substrate or product
- Temperature, humidity, dew point and condensation outside specification

Storage

PROMAPAIN[®]-SC3 must be stored between 5°C and 35°C. Storage conditions are to keep the containers in a dry, cool, well-ventilated space, and away from direct sunlight, source of heat and ignition. Containers must be kept tightly closed. The product must be protected from freezing at all times during storage and transport. Stock in accordance with national regulations.

Shelf life at 20°C is 18 months from date of manufacture in the original closed packaging, subject to re-inspection thereafter.

A product's shelf life is the time period from the date of manufacture throughout the time that a given product maintains its physical integrity, stays within its specification limits, and remains suitable for its intended use. A general prerequisite is that the material is stored under the specified environmental conditions.

Colour variation

Some slight colour variation can occur from batch to batch. Some coatings used as the final coat may fade and chalk in time when exposed to sunlight and weathering effects. Coatings designed for high temperature service can undergo colour changes without affecting performance.



Health & Safety precautions

Appropriate engineering controls:	During application, provide local exhaust or general room ventilation during application and drying. When using, do not eat, drink or smoke
Hand protection:	Use chemical resistant, impermeable gloves. Wash hands after handling.
Eye protection:	Use splash goggles as splashing is possible.
Skin and body protection:	Wear protective waterproof clothing and boots.
Respiratory protection:	Respirator
First-aid measures after inhalation:	Remove person to fresh air and keep comfortable for breathing. If person appears to have difficulty breathing or respiratory irritation, seek medical attention. If you feel unwell, seek medical advice.
First-aid measures after skin contact:	Remove contaminated clothing. Wash skin with mild soap and water. If skin irritation occurs: get medical advice/attention. Wash contaminated clothing before re-use.
First-aid measures after eye contact:	Do not rub the eye. Rinse the eye out with plenty of clean water for at least 15 minutes. If eye irritation or inflammation persists, seek medical advice.
First-aid measures after ingestion:	Rinse mouth thoroughly, drink plenty of water. If symptoms persist, consult doctor.

VOC content: < 4% (Dir 2004/42/CE - max. VOC - Phase II, cat 1, i, WB: 140g/l)

Safety Data Sheet is available on request.

Promat

Australia

Promat Australia Pty Ltd

South Australia office

1 Scotland Road
SA 5031 Mile End South
☎ 1800 Promat (776 628)
☎ +61 8 8352 1014
✉ PAPT.mail@etexgroup.com

New South Wales office

Unit 1, 175 Briens Road
Northmead, NSW 2152
☎ 1800 Promat (776 628)
☎ +61 2 9630 0258
✉ PAPT.mail@etexgroup.com

Victoria office

Suite 205, 198 Harbour Esplanade
Docklands, VIC 3008
☎ 1800 Promat (776 628)
☎ 1800 334 598
✉ PAPT.mail@etexgroup.com

Queensland office

433 Logan Road
Stones Corner, QLD 4120
☎ 1800 011 376
☎ 1800 334 598
✉ PAPT.mail@etexgroup.com

China

Promat Shanghai Ltd

No.2, Tai Hua Street
Yonghe Economic District
Guangzhou City
Guangdong Province 511356
☎ +86 20 8136 1167
✉ promat.cn@etexgroup.com

Hong Kong

Promat International (Asia Pacific) Ltd

Room 1010, C.C. Wu Building
302-308 Hennessy Road
Wanchai
☎ +852 2836 3692
✉ promat.hk@etexgroup.com

Malaysia

Etex Malaysia Sdn Bhd

(Formerly known as Promat (Malaysia) Sdn. Bhd.)
Unit 19-02-01, Level 2, Wisma Tune
19 Lorong Dungun, Damansara Heights
50490 Kuala Lumpur
☎ +60 3 2095 8555
✉ promat.my@etexgroup.com

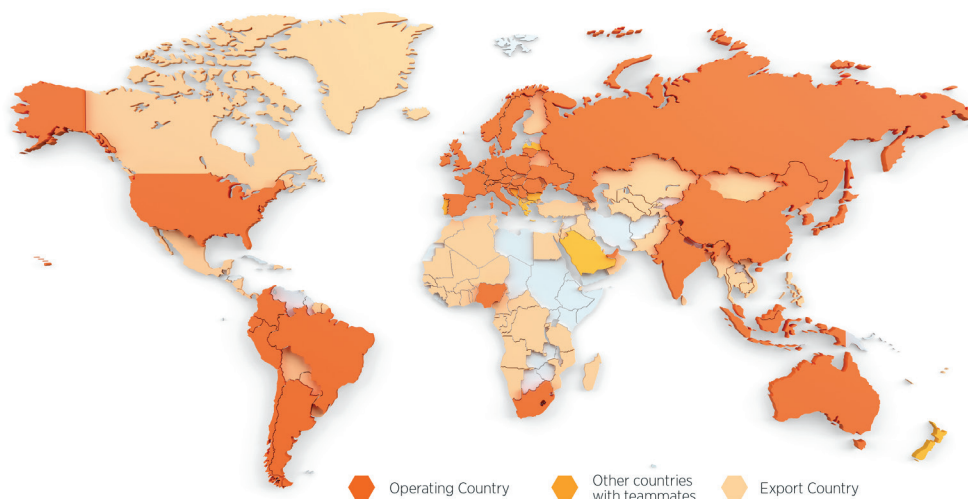
Singapore

Promat Building System Pte Ltd

10 Science Park Road, #03-14 The Alpha
Singapore Science Park II
117684 Singapore
☎ +65 6776 7635
✉ promat.sg@etexgroup.com

www.promat.com

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About Etex

Etex is an international building materials specialist; the company wants to inspire people around the world to build living spaces that are ever more safe, sustainable, smart and beautiful. Founded since 1905 and headquartered in Belgium, Etex currently operates in 110 production sites in 42 countries with over 11,000 employees globally.

Etex fosters a collaborative and caring culture, a pioneering spirit and a passion to always do better for its customers. Building on its experience and global market needs, the company strives to improve its customers quality of living with ever more effective lightweight solutions.

Its three R&D centres support four global sales divisions:

- Building Performance: Leader in plasterboards and fibre cement boards, and the global reference in passive fire protection solutions for the residential and commercial segments.
- Exteriors: Provider of innovative, durable, high performance and beautiful fibre cement exterior materials for architectural, residential and agricultural projects.
- Industry: Front runner of engineering expertise to drive the future of high performance thermal and acoustic insulation as well as passive fire protection in the industrial, aerospace and energy sectors.
- New Ways: As a new division created in January 2020, New Ways offers high-tech offsite modular solutions based on wood and steel framing.

Etex is Inspiring Ways of Living, for more information, please visit our website: www.etexgroup.com