

Firesteel 47/4 Intumescent Coating – Application Instructions

General

Before commencing work, please read Health & Safety notes

Application Conditions

Firesteel intumescent coating is a water based internal product but, despite this, it has a very high tolerance of adverse site conditions. It is fast to dry even in low air movement conditions. Air movement will speed up the drying time. Coated surfaces must be protected from exposure to water.

Ensure that the minimum temperature at the time of application is at least 5°C on a rising thermometer with an RH of 80% or lower.

Check the steel by touch to see if there is any condensation or water on it. If there is – stop – and wait for steel to warm up.

Steel Preparation

All steel should be blast cleaned to SA2½ in accordance with BS7079 part A1 and primed with a suitable primer. A wide range of commonly used single pack and two pack primers have been tested satisfactorily. If you have any doubts regarding suitability of a primer please contact us providing details of the primer. Bituminous and chlorinated rubber primers are unsuitable because of their poor performance in fire conditions. Zinc rich primers will need a tie coat before application. Check overcoating times on epoxy primers by referring to the steel fabricator.

Application

Firesteel intumescent coating is supplied in a thick paste which can be applied by brush, roller or spray. Do not dilute. Mechanically stir/mix well before use as this will slightly loosen the product [a drill with paint mixer attachment is suitable]. When applied by brush, [use a laying on technique] the finish will have pronounced brush marks which would be acceptable if the area were at high level, or unlikely to be seen. Rolling will leave an even texture which may be more acceptable and spraying will leave a smooth even finish which is highly decorative. Firesteel coating has been developed to provide an excellent finish with a minimum of operator input.

Maximum loading by brush would be approximately 0.5mm wet film thickness; by spray up to 1.7mm wet film can be applied in one application. At 20°C with an RH of 70% re-coating times can be within 2-3 hours with 1mm film.

Spray Specification

An airless spray system such as a Graco King 56:1 pressure ratio is recommended, however, other systems may be suitable such as airless electric or petrol powered machines for example Graco Ultra 1595 or Graco GM5000. The following are general recommendations for spray equipment and may vary dependent on site conditions:

| | |
|---------------------|---------------|
| Hose diameter: | 10mm |
| Max hose length: | 30m |
| Fan angle: | 20-40 degrees |
| Tip size: | 19-21 thou |
| Operating pressure: | 3000 psi min. |
| Filter size: | 30mesh |

Monitoring Wet Film Thickness

A wet film gauge is provided/available to monitor coating thickness during application. Press the teeth of the gauge into the wet coating, holding the gauge at right angles to the surface. The last wet tooth denotes the wet film thickness in microns. Keep the gauge clean and do not let coating dry on it.

Measuring Dry Film Thickness

Ensure the surface to be measured is hard dry. Check by trying to make an impression in the coating film. Use a magnetic gauge such as an Elcometer “Banana Gauge” or an electronic instrument; remember to subtract primer film thickness from reading.

Drying Time

In still air conditions the following drying times can be achieved with an RH of 70%.

500 micron wet film

| | |
|-------------------------------|----------------------------------|
| 10°C – touch dry 4 hrs | re-coatable/handleable 16 hrs |
| 20°C – touch dry 1 hr | re-coatable/handleable 2 – 3 hrs |
| 25°C – touch dry 30 – 45 mins | re-coatable/handleable 1 hr |

1000 micron wet film

| | |
|-------------------------|-------------------------------|
| 10°C – touch dry 8 hrs | re-coatable/handleable 24 hrs |
| 20°C – touch dry 2 hr | re-coatable/handleable 12 hrs |
| 25°C – touch dry 1½ hrs | re-coatable/handleable 8 hrs |

Please note – air movement will considerably improve the above performance

Top Seal

A range of water based gloss top seals in BS4800 and RAL colours are available if a particular colour has been specified. Other top seals may also be used please contact us for details.

Health & Safety Notes in Brief

General

Description of Product – non-hazardous water based intumescent coating used to provide fire resistance to structural steel. Colour – off white.

Hazards and Precautions – low toxicity expected under normal conditions of use. If spraying the product the use of suitable gloves, eye protection and dust masks are necessary. Do not eat or drink during application, normal good industrial and personal hygiene practises should be observed.

First Aid

Eye Contact – rinse immediately with clean water. If symptoms persist seek medical attention.

Skin Contact – remove contaminated clothing and wash skin immediately with soap and water.

Ingestion – do not induce vomiting because of the risk of aspiration to the lungs. Seek immediate medical attention.

Inhalation – remove patient to fresh air.

Storage

Store in sealed containers between 5°C and 25°C clear of the ground. Protect from frost.

Fire Fighting

Non flammable. Use any type of extinguishers suitable for surrounding conditions.

Disposal

Contain with absorbent material such as sand, then dispose of as a non-hazardous waste. Dispose of in an approved land fill site or tip, suitable for building products, observing local regulations. No known incompatibility with other substances. Do not allow to enter water courses, soil or waste water.

Transport

Non hazardous for transport. CHIP 3 regulations not applicable.