

## DESCRIPTION

A single component solvent borne thin film intumescent coating for fire protection of structural steelwork.

## PRODUCT FEATURES AND RECOMMENDED USES

- Provide up to 120 minutes fire resistance to structural steelwork.
- Tested in accordance with BS 476: Part 20 & Part 21: 1987 by UKAS accredited laboratories.
- Competitive loadings for most steel section sizes, giving reduced application costs.
- Easy application properties.
- Topcoats are not required in C1 interior environments under the definitions in ISO 12944-2: 1998.
- Can be used externally with Phoenix Topseals or other compatible topcoats. Consult Phoenix to confirm compatibility before use.
- Recommended for in-shop application by airless spray.
- After appropriate drying, Phoenix 170-120 (Shop) specifications can be exposed to the weather for up to 6 months provided that the specific use does not lead to ponding water due to rainfall, condensation or other site circumstances.

## PHYSICAL DATA

|                      |   |
|----------------------|---|
| Specific Gravity     | : 1.32 kg/lt.   |
| Volume Solids        | : 75 ± 4 %  |
| Mixing Ratio         | : Not applicable (single component product)                                       |
| Color                | : White   |
| Gloss Gradation      | : Matt  |
| VOC                  | : 351 g/lt. calculated from formulation to satisfy EC Solvent Emissions Directive |
| Film Thickness       | : Wet Film 250-6900 µm; Dry Film 190-5200 µm                                      |
| Theoretical Coverage | : 2.00 litres/m <sup>2</sup> @ 1.5 mm DFT   |
| Thinner/ Cleanser    | : PT-010  |

**Note:** The volume solids content of this material has been measured in accordance with the method laid down in ASTM-D2697-03.

## APPLICATION CHECK LIST

- The primer is compatible with Phoenix 170-120 (Shop) and has been applied correctly.
- The over-coating period of the primer has not been exceeded.
- The correct primer is used for galvanized steel.
- All damage to the primer has been repaired and re-primed.
- Site and weather conditions are within specification.
- Phoenix 170-120 (Shop) is stored correctly.
- Surface is clean, dry and free from contamination.
- Correct spray equipment is available.
- Application instructions have been read prior to commencement of work.
- Ensure different basecoats are not applied on the same steel section.
- Equipment should be clean and free from contaminants or dried material.
- Wet film gauges are available for use.

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## SURFACE PREPARATION

Phoenix 170-120 (Shop) is designed for use over a suitably prepared and primed substrate.

Ensure surfaces to be coated are clean, dry and free from all surface contamination.

Phoenix has carried out compatibility testing on a wide range of primers and can be contacted on (+852) 2810 6101 for confirmation of compatibility with Phoenix 170-120 (Shop).

Phoenix should be consulted for technical advice when zinc rich primers or the over-coating of existing paints are specified for use.

## SITE CONDITIONS DURING APPLICATION

Phoenix 170-120 (Shop) should only be applied when the air and steel temperatures are above 5°C. Relative humidity should be below 85% for successful application. Steel surface temperature should be a minimum of 3°C above the dew point and always above 0 °C.

Ensure the steel is dry and free from contact with rain or condensation during the application and drying of Phoenix 170-120 (Shop).

Phoenix 170-120 (Shop) can resist normal weather conditions for up to 6 months without topcoat provided that it has had appropriate drying prior to exposure. Once an approved topcoat has been applied as appropriate to the prevailing conditions then durability will be substantially enhanced.

If the specific use or storage could lead to prolonged contact with water due to rainfall, condensation, or other site/ transportation/ storage circumstances, then a recommended topcoat must be used to prevent damage to the basecoat.

## APPLICATION METHODS

### Airless Spraying:

Airless spray equipment is recommended and should match these guidelines:

|                            |   |
|----------------------------|---|
| <b>Operating Pressure:</b> | 3000 psi (210 kg/cm <sup>2</sup> )                                  |
| <b>Tip Size:</b>           | 21 - 27 thou (0.53 - 0.69 mm) depending on application requirements |
| <b>Fan Angle:</b>          | 30°   |
| <b>Pump:</b>               | 56:1 or 68:1 Graco King or equivalent                               |
| <b>Hose Diameter:</b>      | 10mm ( <sup>3</sup> / <sub>8</sub> " ) (Internal Diameter)          |
| <b>Hose Length:</b>        | Min. 3 metres; Max. 60 metres                                       |
| <b>Remarks:</b>            | Use of inline gun or pump filters not required                      |

## THICKNESS REQUIREMENTS

During application, measure wet film thickness frequently with the WFT gauge provided to ensure the correct thickness is being applied.

To use the gauge, insert the teeth into the wet basecoat. The last tooth to be coated indicates the wet film thickness achieved.

In the event of over or under applications, adjustments to the loading rates of subsequent coats will be required.

## DRYING TIMES

Drying of Phoenix 170-120 (Shop) is dependent upon a number of factors including:

- Temperature
- Air movement
- Humidity
- Method of application
- Thickness of coating

High humidity and low air movement or low steel temperatures can result in condensation on the steelwork causing prolonged drying times and possibly poor basecoat adhesion.

## RECOAT TIMES IN HOURS

Indications of recoating or topsealing times taking into account loading areas and application methods are given below:

Hours per application (0.3 mm wft) - Thin coat

Hours per application (0.6 mm wft) - Medium coat

Hours per application (1.0 mm wft) - Thick coat

| R/H | Spray  | 10°C      |          | 20°C      |          | 30°C      |          |
|-----|--------|-----------|----------|-----------|----------|-----------|----------|
|     |        | Still Air | Air Flow | Still Air | Air Flow | Still Air | Air Flow |
| 30% | Thin   | 8 hrs     | 2.5 hrs  | 4-5 hrs   | 1.5 hrs  | 3-4 hrs   | 1.5 hrs  |
|     | Medium | 6 hrs     | 3.5 hrs  | 6 hrs     | 3 hrs    | 4-5 hrs   | 2.5 hrs  |
|     | Thick  | 12 hrs    | 4.5 hrs  | 8 hrs     | 3.5 hrs  | 6 hrs     | 3 hrs    |
| 50% | Thin   | 10 hrs    | 3 hrs    | 6 hrs     | 2.5 hrs  | 5 hrs     | 1.5 hrs  |
|     | Medium | 12 hrs    | 4-5 hrs  | 8 hrs     | 3.5 hrs  | 6 hrs     | 3 hrs    |
|     | Thick  | 18 hrs    | 6 hrs    | 12 hrs    | 4.5 hrs  | 10 hrs    | 3.5 hrs  |
| 70% | Thin   | 12 hrs    | 6 hrs    | 10 hrs    | 4.5 hrs  | 8 hrs     | 3 hrs    |
|     | Medium | 18 hrs    | 9 hrs    | 12 hrs    | 6.5 hrs  | 10 hrs    | 6 hrs    |
|     | Thick  | 24 hrs    | 12 hrs   | 18 hrs    | 9 hrs    | 12 hrs    | 7 hrs    |

### RECOAT TIMES IN HOURS (Continued)

- Drying times are doubled at 5°C or at over 75% relative humidity
- Final drying time before topcoating should be a minimum of 24 hours
- These figures are based on condensation conditions, fluctuations up or down will give variations to the drying time
- If overnight condensation causes wetting a further full drying period should be allowed
- No more than 2 coats by airless spray should be applied within any 24 hours period

### FINAL THICKNESS CHECK

Take dry film thickness (DFT) readings as soon as the coating is sufficiently hard to allow a reading to be made without indenting the surface.

DFT's may be taken using equipment such as an electronic electromagnetic type recorder such as Elcometer 345 or equivalent.

Ensure that the DFT of the primer is deducted from the reading of the basecoat.

Do not apply topcoat until the readings are in accordance with the specified thicknesses.

### APPLICATION OF TOPSEAL

Once DFT's have been achieved as specified, Phoenix APT Acrylic Polyurethane Topseal or other approved topcoat can be applied.

Ensure the Phoenix 170-120 (Shop) is completely dry before applying any topcoat.

### MAINTENANCE

Damaged areas should be abraded back to a sound surface. The surface should be clean and dry before re-applying. Phoenix 170-120 (Shop) may be used for repairing scratches and chips. Once defects are being repaired, topcoat should be re-applied. Refer to Phoenix Maintenance Instructions.

### STORAGE & SHELF LIFE

Phoenix 170-120 (Shop) should be stored in a well-ventilated internal area at between 5°C and 25°C. Keep away from ignition sources. Further details refer to the Material Safety Data Sheet. At temperatures above 25°C, the shelf life will be reduced. Shelf life is normally 24 months in sealed containers from the date of manufacture.

### TECHNICAL ASSISTANCE

Further assistance can be obtained by calling the Technical Hotline (+852) 2810 6101 or by emailing to [info@phoenixasia.com.hk](mailto:info@phoenixasia.com.hk). Contract Support is available on request.

### HEALTH AND SAFETY

Please refer to the Material Safety Data Sheet of Phoenix 170-120 (Shop).