DESCRIPTION

A water borne thin film intumescent coating for the fire protection of structural steelwork.

PRODUCT FEATURES AND RECOMMENDED USES

- Provides up to 120 minutes fire resistance to structural steelwork.
- Tested and assessed in accordance with BS 476: Part 21: 1987.
- Highly competitive loadings for most steel section sizes, giving reduced application costs.
- Easy application properties.
- Minimal VOC's – satisfy EC Solvent Emissions Directive.
- Topseals 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 topseals. Consult Phoenix before use to confirm compatibility.
- Recommended for on-site application. Off-site application is also feasible, but must be topcoated before lifting, handling and exposed to weather.

PHYSICAL DATA

Specific Gravity	:	1.39 kg/lt.
Volume Solids	:	69 ± 3 %
Mixing Ratio	:	Not applicable (Single pack product)
Color	:	White
Gloss Gradation	:	Matt
VOC	:	3.35 grams/liter, 2.41 grams/kilograms (satisfy EC SED)
Theoretical Coverage	:	1.45 litres/m^2 @ 1.0 mm DFT

Note: The volume solids content of this material has been measured in accordance with the method laid down in ASTM-D2697-91.

APPLICATION CHECK LIST

The following instructions are for on-site application only. For off-site application, please consult Phoenix.

- The primer is compatible with Phoenix 370-120 and has been applied correctly.
- The overcoating period for 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 370-120 is stored correctly.
- Surface is clean, dry and free from contamination.
- Correct spray equipment is available, if appropriate.
- Application instructions have been read prior to commencement of work.
- Ensure different basecoats are not applied on the same section of steel.
- Equipment should be clean and free from contaminants or dried material.
- Wet film gauges are available for use.

SURFACE PREPARATION

Phoenix 370-120 should be applied onto a clean, undamaged, dry and primed steel surface.

Certain types of primers can cause adhesion problems and should be avoided. These include chlorinated rubbers, bitumen and thermoplastic primer.

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 370-120.

Galvanised surfaces should be prepared by in compliant with ASFP Technical Guidance Document TGD11. Primer should be applied in accordance with the manufacturer's instructions.

If a zinc rich primer is used, it is advisable to seal this with a suitable tie coat or travel coat prior to shipment to site. If the steel is left exposed to the atmosphere with just a zinc rich primer, surface salts may build up on the steel. These salts, if not adequately removed, may cause adhesion problems for any subsequent coating applied. Removal of the salts can be achieved by high-pressure washing/jetting. If adequate removal of the salts cannot be guaranteed, a suitable tie coat may have to be applied prior to the application of the Phoenix 370-120 Water-based Basecoat.

Phoenix should be consulted for technical advice when zinc rich primers or overcoating of existing paints are specified for use.

SITE CONDITIONS DURING APPLICATION

Phoenix 370-120 must be applied in a dry internal environment. It must not be exposed to condensation, damp or wet conditions during or after application. If the basecoat is allowed to get wet, it is likely to be damaged – blistering and wrinkling may occur.

Phoenix 370-120 should only be applied when the air and steel temperatures are above 5ºC. Relative humidity should be below 80% for successful application. Steel surface temperature should be a minimum of 3ºC above the dew point. At application temperatures below 10ºC, drying times will be significantly extended, and spraying characteristics may be impaired. Extended overcoating times may be required at low temperature and high film thicknesses.

Occasionally impaired film formation such as cracking may occur on edges of flanges and external or internal angles of structural steels, depend on geometry, over-application and ambient conditions. This does not detrimentally affect the fire performance properties of the product.

APPLICATION METHODS

Phoenix 370-120 is supplied ready for use and does not require thinning but should be thoroughly mechanically stirred prior to use.

Airless Spraying:

Phoenix 370-120 may be applied up to a maximum wet film thickness (WFT) of 1.2 mm in a single spray coat comprising of several quick passes. Achieving maximum loadings will depend on site and ambient conditions.

Build up thickness to achieve loading required in several quick passes. It may be possible to apply two coats of Phoenix 370-120 in one day particularly if the atmospheric temperature is above 20ºC and relative humidity below 70%. However, before doing this, ensure that the previously applied coat is dry, particularly in the web/flange junctions.

APPLICATION METHODS (CONTINUED)

Airless spray equipment is recommended and should match these guidelines:

Operating Pressure:	2500 - 3000 psi (175 - 210 kg/cm²)
Tip Size:	17 - 23 thou
Fan Angle:	20° - 40°
Hose Diameter:	10mm ($^3/_8$") (Internal Diameter)
Hose Length:	Max. 60 metres
Remarks:	**Use of in-line gun and pump filers is not recommended.**

Brush/ Roller Application:

For brush application use a "laying on" technique to avoid heavy brush marking.

Maximum wet film per coat when applied using a brush or roller is 0.4mm. A short piled roller will produce a light textured finish.

THICKNESS REQUIREMENTS

During application, measure that 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 370-120 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.

Drying of Phoenix 370-120 can be speeded up by introducing additional ventilation, such as industrial fans and blowers, together with dehumidifiers.

RECOAT TIMES IN HOURS

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

Hours per application (0.6mm wft) – Thin coat

Hours per application (0.8mm wft) – Medium coat

Hours per application (1.2mm wft) – Thick coat

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

- Brushing or rollering adds about 20% to drying time (compared to spraying).
- Drying times are doubled at 5°C or at over 75% relative humidity.
- Final drying time before topsealing is a minimum of 16 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.

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 PosiTector 6000 Gauge.

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

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

APPLICATION OF TOPSEAL

Once DFT's have been achieved as specified, Phoenix's topseals or other topcoats approved by Phoenix can be applied.

Ensure the Phoenix 370-120 is completely dry before applying Topseal.

MAINTENANCE

Damaged areas should be abraded back to a sound surface. The surface should then be clean and dry before re-applying. Phoenix Intumescent Filler may be used for repairing scratches and chips. Once repaired topseal should be re-applied. Refer to Phoenix Maintenance Instructions.

STORAGE

Phoenix 370-120 should be stored internally between 5ºC and 30ºC. Do not store below 5ºC. At temperatures above 30ºC, the shelf life will be reduced. Shelf life is normally 9 months in sealed containers.

TECHNICAL ASSISTANCE

Further assistance can be obtained be calling the Technical Hotline (+852) 2810 6101 or by email – info@phoenixasia.com.hk. Contract Support is available on request.

HEALTH AND SAFTY

Please refer to the Material Safety Data Sheet of Phoenix 370-120.

GUARANTEE / WARRANTY

This information is offered in good faith but without guarantee or liability. In cases of doubt, users should consult with relevant authority.

Information given herein is supplied for your guidance only and is based upon the results of controlled tests and experience obtained in the application of the product referred to by Phoenix.

As the supplier only, Phoenix has no control over the method or conditions of application of the product and consequently no warranties expressed or implied are intended to be given as to the coverage or performance of the products mentioned or referred to herein and no liability will be excepted for any loss, damage or physical injury resulting from the use or application of the information, data or products mentioned or referred to herein.