



Performance Chemicals

# FIRE RETARDANTS

Koppers FirePRO, Exterior Fire-X and PROTIM Frameguard



Photograph courtesy of Wilkinson Eyre Architects & PTG Treatments

[www.kopperspc.eu](http://www.kopperspc.eu)

## Koppers FirePRO

### Fire Retardant for Internal Timber



#### Fire Retardant Treated Wood Products

Koppers FirePRO is an interior high temperature fire retardant chemical formulation based on proprietary Koppers technology.

Independent testing performed in accordance with industry standards has shown Koppers FirePRO products exhibit fire retardant performance properties without significantly compromising other critical engineering properties such as strength, durability, corrosivity, and hygroscopicity. Koppers FirePRO is a WPA Approved Product under their Flame Retardant Quality Scheme.

## Exterior Fire-X®

### Fire Retardant for Exterior Timber/Cladding



#### Fire Retardant Treated Wood Products

Exterior Fire-X® is an exterior grade, leach resistant (LR), fire retardant applied to timber by a pressure impregnation process. Exterior Fire-X is a listed product in the 2012 UK Wood Protection Association Fire Retardants Manual.

Independent testing performed in accordance with industry standards has shown that Exterior Fire-X fire retardant treated wood products (FRTW) exhibit enduring fire retardant performance properties without significantly compromising other critical engineering properties such as strength, durability, corrosivity and hygroscopicity. Exterior Fire-X is a WPA Approved Product under their Flame Retardant Quality Scheme.

## PROTIM Frameguard®

### Flame Retardant and Preservative for Timber Frames



#### What is Protim Frameguard®?

Protim Frameguard® is a flame retardant and preservative low pressure treatment system developed to reduce flame spread in framing timbers and plywoods during construction and to impart preservative protection against fungal decay and insect attack to Use Class 2, 60 years desired service life, in accordance with BS 8417:2011 Preservation of Wood - Code of Practice. Protim Frameguard® has been tested by Building Research Establishment (BRE) in accordance with BS 476 Part 7, the UKTFA 'FR Build' Scheme and complies with the NHBC preservation requirements for framing timbers embodied in Chapters 2.3 and 6.2 of the 2006 edition of NHBC Standards.

## Application

Koppers FirePRO products are permitted for use in above ground interior applications where the adopted building regulations permit the use of wood products or fire retardant treated wood products (FRTW) such as roof systems, sheathing, joists and such like. It can also be used in other interior applications such as exhibition stands. The specifier and/or end user is responsible for reviewing the test data on Koppers FirePRO FRTW products to determine if they are acceptable for the intended end use.

Koppers FirePRO FRTW may be used in above ground external situations where it is effectively protected from direct rainfall and weathering. External grade wood coatings may give adequate long term protection, in combination with a programme of planned maintenance. Check with a coating manufacturer before use.

## Standards and Specification Information

Koppers FirePRO fire retardant treated wood products (FRTW) have been tested to BS EN 13501-1 Fire classification of construction products and building elements. These tests are commonly referred to as 'reaction to fire tests'. Reaction to fire tests are commonly

called up in regulations in both the building and transport sectors. The classifications of flammability are A1, A2, B, C, D, E and F.

Koppers currently holds approvals for many of the most commonly specified species. Below is a list of just some of the approvals held.

- Softwood Plywoods (Spruce, Pine...)
- Hardwood Plywoods (Far Eastern, Birch...)
- Softwoods (Spruce, Western Red Cedar...)
- Hardwoods (Oak, Poplar...)
- Thermally Modified Wood (Thermowood...)

Further materials are undergoing testing on a continuous basis, please contact us for a comprehensive list. Please check with Koppers for specific sizes tested and approval classification achieved. Koppers FirePRO treated wood products can also be CE marked.

Koppers FirePRO is able to meet the requirements of HR (humidity resistant) treatment and DI (dry internal) specifications. Koppers FirePRO is approved by London Underground as a suitable fire retardant treatment for timbers to be used in their construction and maintenance projects, approval reference ID 1327.



## Application

Exterior Fire-X FRTW products are permitted for use in above ground interior or exterior applications where the adopted building regulations permit the use of wood products or fire retardant wood products, such as cladding, shingles, playground equipment, sheathing, joists and such like. The specifier and/ or end user is responsible for reviewing the test data on Exterior Fire-X FRTW products to determine whether they are acceptable for the intended end use. Exterior Fire-X FRTW has been shown to perform well in the standard fire retardant tests ASTM E84 and BS EN 13501-1. Treated timber has also maintained its fire retardant performance in the ASTM D2898 accelerated weathering test, used to approve leach resistant (LR), exterior grade fire retardant treatments.

## Standards and Specification Information

Exterior Fire-X FRTW have been tested to BS EN 13501-1 'Fire classification of construction products and building elements'. These tests are commonly referred to as 'reaction to fire tests'.

Reaction to fire tests are commonly called up in regulations in both the building and transport sectors. The classifications of flammability are A1, A2, B, C, D, E and F.

Koppers currently holds approvals for many of the most commonly specified species. Below is a list of just some of the approvals held.

- Softwoods (Spruce, Douglas Fir, Western Red Cedar, Larch...)
- Hardwoods (European Oak, Sweet Chestnut...)
- Thermally Modified Wood (Frake)

Further materials are undergoing testing on a continuous basis, please contact us for a comprehensive list. Please check with Koppers for specific sizes tested and approval classification achieved. Exterior Fire-X treated wood can also be CE marked.

Exterior Fire-X is able to meet the requirements of HR (humidity resistant) treatment, DI (dry internal) and LR (leach resistant) specifications.



## Why Protim Frameguard®?

There is an ongoing desire to enhance confidence in timber frame as a secure and safe construction system. Fire risk management during the construction phase requires a matrix management approach. Flame retardant treatment protection of timber framing can provide an important, additional element to this management matrix. Flame retardant treatment can help reduce the rate of flame spread on the treated timber. This allows more time for other risk management measures to be effective and so minimize the consequences of a fire. Flame retardant treatment does not stop wood from burning altogether and must not be relied upon as the sole means of managing fire risk on timber frame construction sites.

## Why is Protim Frameguard® different?

Flame retardant treated wood products have been sold in the UK for years and the market is well established. The traditional flame retardant market is based on the use of high pressure impregnation processes, followed by kiln drying prior to use.

Protim Frameguard is a new integrated process that offers an economical approach, providing the benefit of flame retardant protection for wood products during construction and long lasting preservative protection.

## How is Protim Frameguard® applied?

The Protim Frameguard treatment system can be applied in existing low pressure treatment plants with minimal engineering modification. Treatment solution is supplied by bulk tanker in ready to use form. Application is by cycles and processes broadly similar to those already in use. Solution uptakes per m3 timber will be of a similar order of magnitude as before, with no significant lasting impact on timber moisture content.

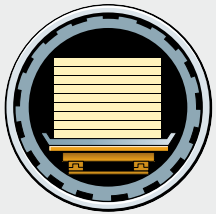
Treatment solution can be supplied with a colour tint included. Such temporary dyes are intended to give short term colour only, so as to assist in identifying material as treated in stock and on a construction site.



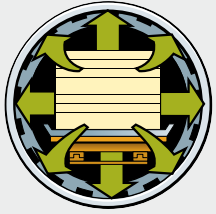
# Treatment Process



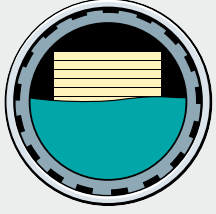
1  
The timber is transferred into the treatment vessel.



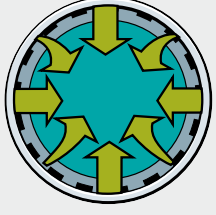
2  
A vacuum pulls the air out of the vessel.



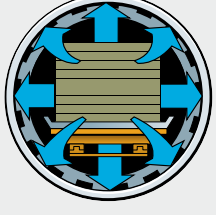
3  
The preservative fills the vessel.



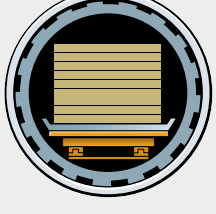
4  
The vessel is pressurised forcing the preservative into the timber.



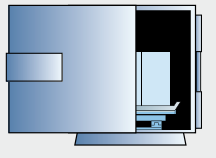
5  
The preservative is removed and final vacuum is applied removing excess.



6  
The timber has now been preserved with the preservative.



7  
Exterior Fire-X ONLY  
The treated timber goes through a kiln process.



# Important Information

## Koppers FirePRO

- Wear a dust mask and goggles when cutting or sanding wood.
- Wear gloves when working with wood.
- All sawdust and construction debris should be cleaned up and disposed of after construction.
- Wash work clothes separately from other household clothing before re-use.
- Fire Retardant Treated Wood (FRTW) products should not be used where they may come into direct contact or indirect contact with drinking water, except for uses involving incidental contact.
- Do not use FRTW products under circumstances where they may become a component of food, animal feed, or beehives.
- Do not use FRTW products for mulch.
- Only FRTW products that are visibly clean and free of surface residue should be used.
- If wood products are wet during construction, they should be replaced.
- Do not burn treated wood. See Disposal Recommendations.
- Disposal Recommendations: FRTW products which are no longer usable (e.g. cut ends, broken boards, timber taken out of service) should not be burned. They may be disposed of in landfills, or burned in commercial or industrial incinerators or boilers, in accordance with National and local regulations.
- It should be noted that the use of some paints may affect the fire properties of the end products and care must be taken to select an appropriate paint. Always follow the coating manufacturer's instructions.
- Use fixings and other hardware which are in compliance with building regulations for the intended use.
- Use fixings, hardware or any metal products as recommended by their manufacturer.
- Mould growth can and does occur on the surface of many products, including untreated and treated wood, during prolonged surface exposure to excessive moisture conditions. To remove mould from the treated wood surface, wood should be allowed to dry. Typically, mild soap and water can be used to remove remaining surface mould.

## Exterior Fire-X®

- Do not burn treated wood.
- Wear gloves when working with wood.
- Wear a dust mask and goggles when cutting or sanding wood.
- Some fire retardants may dislodge from the treated wood surface upon contact with skin. Wash exposed
- All sawdust and construction debris should be cleaned up and disposed of after construction.
- Wash work clothes separately from other household clothing before re-use.
- Fire Retardant Treated Wood (FRTW) products should not be used where they may come into direct contact or indirect contact with drinking water.
- Do not use treated wood under circumstances where the fire retardant may become a component of food, animal feed, or beehives.
- Do not use treated wood for mulch.
- Only fire retardant treated wood products that are visibly clean and free of surface residue should be used.
- If wood is to be used in an interior application and becomes wet during construction, it should be allowed to dry before being covered or enclosed.
- Mould growth can and does occur on the surface of many products, including untreated and treated wood, during prolonged surface exposure to excessive moisture conditions. To remove mould from the treated wood surface, wood should be allowed to dry. Typically, mild soap and water can be used to remove remaining surface mould.
- Certain metal products (including fasteners, hardware and flashing) may corrode

when in direct contact with or exposed to water. Use fixings, hardware or any metal products as recommended by their manufacturer. Stainless steel and hot dipped galvanised fixings are recommended.

- If you desire to apply a paint, stain, clear water repellent or other finish to treat your treated wood, we recommend following the manufacturer's instructions and label of the intended result.
- Exterior Fire-X treated timbers, which are no longer usable, such as cut ends, broken boards, sawdust, or treated timber material taken out of service, may be disposed of in accordance with National and local regulations.

## PROTIM Frameguard®

**Protim is the brand name for wood preservative treated with an organic based preservative.**

- Wear a dust mask and goggles when cutting or sanding wood.
- Wear gloves when working with wood.
- Wash work clothes separately from other household clothing before re-use.
- All sawdust and construction debris should be cleaned up and disposed of after construction.
- Do not burn treated wood.
- Do not use treated wood for mulch.
- Only treated wood that is visibly clean and free of surface residue should be used.
- Do not use treated wood under circumstances where the preservative may become a component of food, animal feed, or beehives.
- Treated wood should not be used where it may come into direct contact or indirect contact with drinking water.
- Use fixings, hardware or any metal products as recommended by their manufacturer.
- If wood is to be used in an interior application and becomes wet during construction, it should be allowed to dry before being covered or enclosed.
- Some preservative may migrate from the wood into soil/water or may dislodge from the treated wood surface upon contact with skin. Wash exposed skin areas thoroughly.
- Mould growth can and does occur on the surface of many products, including treated or untreated wood, during prolonged surface exposure to excessive moisture conditions. To remove mould from treated wood surfaces, wood should be allowed to dry. Typically, mild soap and water can be used to remove surface mould.
- Disposal Recommendations: Treated wood may be disposed of in landfills or burned in commercial or industrial incinerators or boilers in accordance with National and local regulations.
- Protim treated wood is compatible with most coatings, glues and sealants and can normally be coated with most wood finishes 48 hrs after treatment. Before you start, we recommend you apply the finishing product to a small test area before finishing the entire project to ensure it provides the intended result before proceeding. Protim treated wood may be glued with resorcinol, phenol/resorcinol or urea formaldehyde glues. Protim treated wood is compatible with most sealants and mastics, always follow manufacturer's recommendations.
- Use biocides safely, always read the label and product information before use.
- For more information visit [www.kopperspc.eu](http://www.kopperspc.eu)

## Timber Care

### Use An End Coat Preservative

Any surface exposed by drilling or cutting must be re-treated with a cut end preservative. Failure to do this will reduce the effectiveness of the preservative.

Rip sawing, thicknessing and planing are not permitted unless the timber is subsequently re-preserved to the original specification.

### For more information

Visit: [www.kopperspc.eu](http://www.kopperspc.eu)  
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FM 01724



FM 36409



Photograph courtesy of Wilkinson-Eyre Architects & PLO Architects

