TIKKURILA
INDUSTRY

Tikkurila fire-retardant solutions

HIGH-LEVEL WATER-BORNE FIRE PROTECTION
FOR EXTERIOR AND INTERIOR WOOD SURFACES

FONTEFIRE
FIRE PROTECTION

Safer wood construction

BUILDING WITH WOOD IS NOT ONLY AN AESTHETIC CHOICE, BUT AN ECOLOGICAL ONE TOO. TO TAKE ADVANTAGE OF ITS INHERENT BEAUTY, THERE ARE SOME SPECIAL REQUIREMENTS TO CONSIDER IN TERMS OF PLANNING AND CONSTRUCTION, AND ONE OF THESE IS FIRE PROTECTION. TIKKURILA FIRE-RETARDANT SOLUTIONS ARE DESIGNED TO PROVIDE THE HIGHEST POSSIBLE LEVEL OF FIRE PROTECTION FOR EXTERIOR AND INTERIOR WOOD SURFACES.

Which wooden surfaces need fire protection?

Wood can be used as a construction material without fire-protection treatment. However, depending on the site and the customer requirements, treatment can make the building safer. Fire retardants slow the ignition of wood and the spread of fire, while also creating less smoke than untreated wood. This provides valuable extra time for people to escape and for emergency services to reach them, while reducing the harmful effects of smoke inhalation.

The extra protection provided by our fire-retardant solutions allows wood to be used in a wider range of applications, for example in:

- Schools, kindergartens, and assisted-living facilities
- Storage facilities like warehouses
- Detached houses, terraced houses, and apartment buildings
- Offices
- Hotels
- Libraries
- Annexes or extra floors with wooden frames

How do fire retardants work?

When exposed to heat, fire-retardant material expands and creates an insulating foam layer on the wood surface that prevents the wood from heating up rapidly or catching fire. This is known as intumescent technology, i.e. fire protection based on the paint surface expanding when exposed to heat.

Compared to salt-based fire-retardant products, surfaces treated with intumescent technology can better withstand moisture, UV light, and weather.

BENEFITS	INTUMESCENT TECHNOLOGY	SALT-BASED PRODUCTS
Slows down the effects of fire	Yes	Yes
Long-lasting protection	Yes	No
Resistant to moisture	Yes	No
Topcoat may be water-borne	Yes	No
Reduces smoke formation	Yes	No
Topcoat won't increase smoke formation	Yes	No

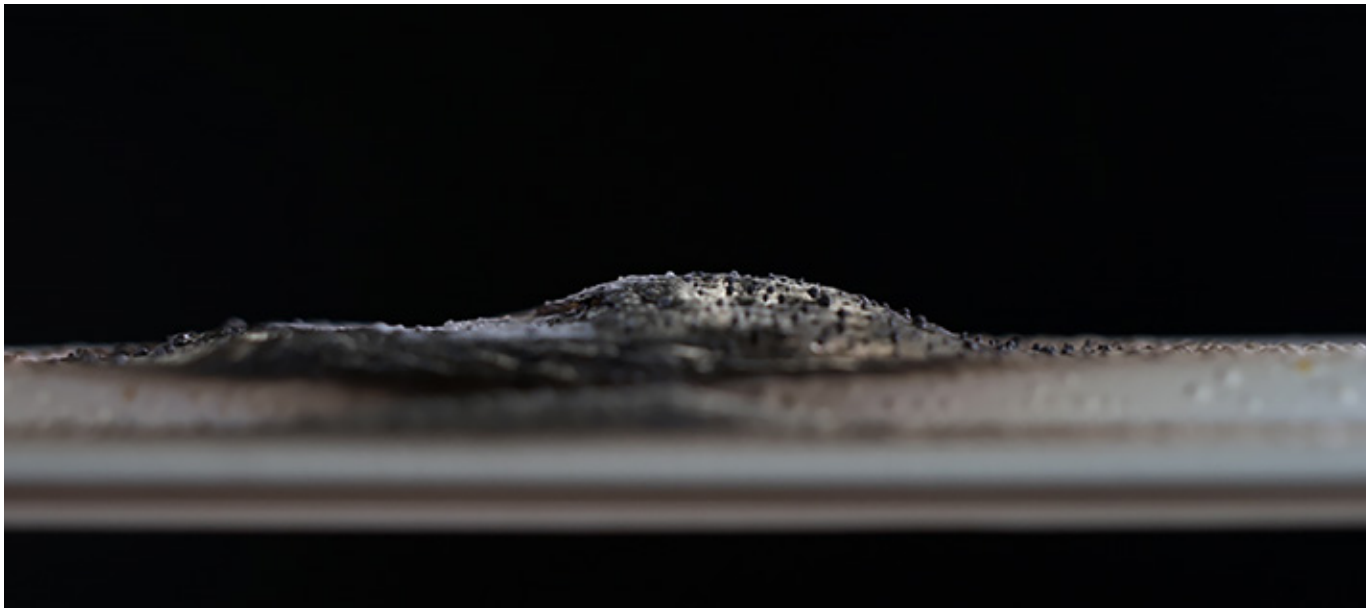
Water-borne and environmentally friendly

Tikkurila fire-retardant products contain no ingredients that are hazardous to humans. And since they are water-borne, they cause less emissions and are environmentally friendly and safe to use. Our fire-retardant products have been developed for industrial painting, meaning the surface treatment takes place at the factory under controlled conditions rather than at the construction site. This ensures emissions are reduced even further and prevents fugitive emissions on site.

Tikkurila fire-retardant solutions

Tikkurila fire-retardant products have the highest possible fire reaction class for wood material: B-s1, d0, according to standard EN 13501-1:2007+A1:2009. The range includes:

- Fontefire WF fire-retardant paint for exterior and interior wood surfaces
- Fontefire WF Clear fire-retardant lacquer for interior softwood surfaces



TIKKURILA FONTEFIRE WF FIRE-RETARDANT PAINT SYSTEM FOR EXTERIOR USE

SUBSTRATE	PRIMER	AMOUNT OF WET FILM, G/M²	TOPCOAT	AMOUNT OF WET FILM (FRONT), G/M²	CLASSIFICATION ACCORDING TO EN 13501-1:2007+A1:2009
Spruce, 23±1 mm	Fontefire WF	Front: 350-360 g/m² Reverse: 170-180 g/m²	Ultra Pro WF-M Ultra Pro WF 10	90-100 g/m² 90-100 g/m²	K03/2019
Spruce, 20 mm	Fontefire WF	Front: 350-360 g/m² Reverse: 175-180 g/m²	Ultra Pro	90-100 g/m²	K22/A/2016
Laminated spruce, 20±1 mm	Fontefire WF	Front: 350-360 g/m² Reverse: 175-180 g/m²	Ultra Pro WF-M Ultra Pro WF 10	90-100 g/m² 90-100 g/m²	K38/2018 K38-1/2018

GENERAL APPROVAL FOR FIRE RETARDANCY

SUBSTRATE	PRIMER	AMOUNT OF WET FILM, G/M²	TOPCOAT	AMOUNT OF WET FILM (FRONT), G/M²	CLASSIFICATION ACCORDING TO EN 13501-1:2007+A1:2009
Chipboard, 12 mm [1)]	Fontefire WF	Front: 380-390 g/m²	Ultra Pro	95-100 g/m²	K10/2016
Plywood, 9 mm [1)]	Fontefire WF	Front: 350-360 g/m²	Ultra Pro	–	K42/2019

TIKKURILA FONTEFIRE WF CLEAR FIRE-RETARDANT LACQUER SYSTEM FOR INTERIOR USE

SUBSTRATE	SEALER	AMOUNT OF WET FILM, G/M²	TOP LACQUER	AMOUNT OF WET FILM (FRONT), G/M²	CLASSIFICATION ACCORDING TO EN 13501-1:2007+A1:2009
Spruce, 14 mm	Fontefire WF Clear	Front: Over 200 g/m²	Akvilac WF 10	60-70 g/m²	K40/2018
Spruce, 14±1 mm	Fontefire WF Clear	Front: Over 200 g/m²	–	–	K40/2017

TIKKURILA FIRE-RETARDANT PAINT SYSTEMS FOR INTERIOR USE

SUBSTRATE	PRIMER OR SEALER	AMOUNT OF WET FILM, G/M²	TOPCOAT	AMOUNT OF WET FILM (FRONT), G/M²	CLASSIFICATION ACCORDING TO EN 13501-1:2007+A1:2009
Plywood, 12 mm [2)]	Fontefire WF	Front: 350-360 g/m²	Akvi Top DS 25	95-100 g/m²	K39/2017
Spruce, 14 mm	Fontefire WF Clear	Front: Over 200 g/m²	Akvi Top DS 25	100 g/m	K40/A/2018

GENERAL APPROVAL FOR FIRE RETARDANCY

SUBSTRATE	SEALER	AMOUNT OF WET FILM, G/M²	TOPCOAT	AMOUNT OF WET FILM (FRONT), G/M²	CLASSIFICATION ACCORDING TO EN 13501-1:2007+A1:2009
Plywood, 9 mm [2)]	Fontefire WF Clear	Front: Over 200 g/m²	–	–	K36/2019

[1)] According to the EN 13238 test standard, 9 mm plywood and 12 mm chipboard can be used as standard materials to approve fire-retardant paint. When fire-retardant paint is approved on standard material, it will also protect other wood materials with a density factor of 0.75 against fire. The plywood used in the tests was made of pine (460 kg/m³ × 0.75 = 345 kg/m³) and the chipboard density was 710 kg/m³ (710 × 0.75 = 525 kg/m³). Note that chipboard and 9 mm plywood are not recommended for exterior use.

[2)] According to EN 13238 test standard 9 mm plywood can be used as standard material for approving the fire-retardant paint. When fire-retardant lacquer is approved on standard material, it will protect against fire also other wood materials with the density factor 0,75. Plywood used in tests were made of pine with nominal density 460 kg/m³. (460 kg/m³ × 0,75 = 345 kg/m³)

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