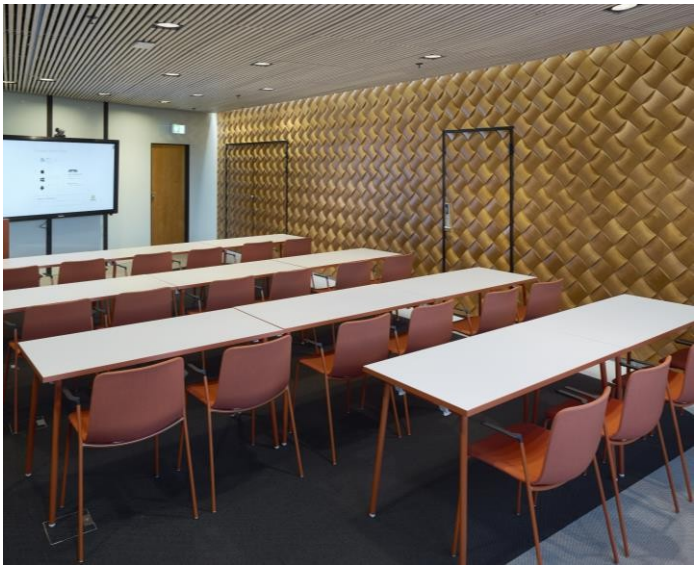
WOODSAFE®
Durable Fire Protection



Associated document

1002 CERTIFIERING KONTROLL RI. SE

Type approval certificate 0263 -08
Other certificate numbers refer to table of contents

WOODSAFE® PRO

Industrially fire-impregnated wood products

Woodsafe Timber Protection AB
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Dear customer

Thank you for choosing to use Woodsafe fire impregnated wood. In this document collection you will find important overall facts and guidance for **WOODSAFE**® PRO™ impregnated wood.

Before delving into this collection of documents, we would like to tell you a bit more about fire impregnated wood and why it is important to understand the whole picture of fire protection impregnation, how it works, how to think, how to evaluate sustainable product properties and sustainable production of the final product.

In principle, there is no difference between fire impregnation or flame retardant impregnation, it is more a concept where flame retardant may sound a little more simplified than fire impregnation, but this is not the case as long as you look at the fact that the impregnation process is industrial and is carried out by vacuum pressure impregnation process with associated manufacturing control. *Thus, there is no room to claim that spraying, dipping, brushing or applying fire retardant via paint box is equivalent to industrial vacuum pressure process impregnation.*

Fire impregnation means that in the refinement process, fire impregnation agents are added under vacuum pressure, which results in a deep fire protection in the cell structure of the wood and always covers all six sides of the product. After impregnation, the fire retardant is dried and fixed in the cell structure and lies there passively waiting to be activated by heat, i.e. fire exposure. In a fire, the active substance (the fire retardant) is affected, contributing to the development of water and carbon dioxide, which actively contribute to the imbalance in the three important elements of the fire triangle - heat, fuel and oxygen. As a result, the wood product with its improved fire resistance properties contributes much less to fire spread and heat generation. Parameters required to meet fire classes such as SP-Fire 105 and Euroclass are thus fully achievable.

But is that enough? The answer is no. You must look at the totality of wood species, installation conditions, air gap, insulation, substrate and surface treatment where all sub-components and conditions affect the result. This means that if you need facade cladding that meets SP-Fire 105, then a fire test is not enough, even if the result is approved, but not the way you intend to use the facade cladding.

As a responsible fire consultant and developer, the whole must be valued, not parts of the whole:

- Is it the right type of wood?
- Is air gap approved?
- Does the product meet the installation condition intended to be used?
- Is the combination of wood species, air gap, insulation, substrate fulfilled?
- Is the fire protection resistant in the outdoor environment and approved by a third party according to EN16755 EXT?
- And more

Woodsafe Timber Protection AB is Europe's largest manufacturer of fire impregnated wood with over 30 years of practical experience. The plant and production is located in Västerås and the production is certified as follows:

- CE certified since 2009 (CPD 89/106) according to the Construction Products Regulation 2013, CPR 305/2012, system 1.
- Type approval certificate in accordance with Boverket's BBR and the Planning and Construction Act (SFS 2010:900).
- ISO 9001:2015 (quality and management system)
- ISO 14001:2015 (environmental management system)

- ISO 45001 (health and safety)

As a client of Woodsafe or as a client of Woodsafe partners, you can be assured of objective advice and support backed by expertise and third-party documentation.

Welcome to Woodsafe. We are here for you and your project.

Thomas Bengtsson, Group CEO, Woodsafe Timber Protection AB

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1. Certificates and Declaration of Performance

1.1 Possession of a CE certificate

Woodsafe Timber Protection's CE Certificate for **WOODSAFE**® PRO™ is issued by the Notified Body, RISE (0402), Certificate No: 0402-CPR-SC0243-09.

1.2 Possession of a type-approval certificate

Woodsafe Timber Protection's type approval certificate is issued by notified body, RISE (0402), certificate no: 0263-08.

1.3 Construction Products Regulation CPR 305/2011

Woodsafe Timber Protection and Woodsafe dealers are CE certificate holders according to harmonized product standard. Woodsafe dealers' CE certificates are formally linked to Woodsafe's CE certificate and/or production and third party control:

- EN14915 (solid wood), system 1.
- EN13986 (wood-based panels), system 1.

1.4 Declaration of Performance (DoP) according to the Construction Products Regulation CPR 305/2011

Woodsafe Timber Protection's or Woodsafe's dealer's CE certificate is the basis for the Declaration of Performance (DoP). For the project and material delivery in question, the dealer of wood products shall normally provide the Declaration of Performance (DoP), Woodsafe's or its own, exceptions are made under the CPR rules.

1.5 Type approval certificate according to the Planning and Construction Act (PBL 2010:900).

Woodsafe Timber Protection holds a type approval certificate for our lego fire impregnation services, which means that the business is subject to continuous third-party control by a notified body (RISE).
Type approval is a very complex control scheme including quality management system, self-check, competence, control of equipment, sampling from production. The crucial difference between type approval certificates in relation to CE certification is that facade requirements and resistance cannot be CE certified, but facade requirements (SP-Fire 105) and resistance (EN16755 EXT) can be certified according to type approval certificates. The technical properties that type approval certificates confirm Woodsafe fire technical properties are:

- Facade cladding (SP-Fire 105)
- Fire resistance ($_{K210/B-s1}$,d0) ($_{K110/B-s1}$,d0)
- Application class INT1, INT2, EXT (EN16755)

It is important to know that the prerequisite for the type approval certificate according to BBR and the Planning and Construction Act (PBL) regarding the facade fire requirement SP-Fire 105 is that the fire impregnation agent has approved properties according to the utility class standard EN16755 for all properties INT1, INT2 and EXT.

1.6 Quality and management system according to international standard ISO 9001:2015

Woodsafe Timber Protection internal quality system (WQS) is ISO 9001:2015 certified by RISE (No. 0402).

Reference 5859

1.7 Environmental management system according to international standard ISO 14001:2015

Woodsafe Timber Protection's systematic environmental management system is 14001:2015 certified by RISE (No. 0402). Reference 5859M

1.8 Latest edition of Woodsafe certificates

Woodsafe Timber Protection product range is under constant development and certificates with associated performance declarations and type approvals are continuously updated. For current documents, we refer to our website and document library, or dealer, for the relevant product (**WOODSAFE**® PRO™ or **WOODSAFE**® Exterior WFX). ™Certification documents can be found here.

2. Reception and control of goods

2.1 Initial check on arrival

Woodsafe fire impregnated wood products should be handled with care when unloading, storing and loading. Depending on the wood species and modification, the density and sensitivity to movement varies with an increased risk of permanent damage or marks from, for example, forklift forks and unbalanced weight distribution.

Upon receipt, check the following:

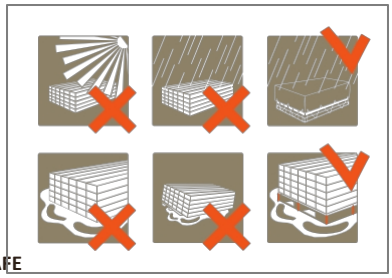
- Check that the packaging of the material is complete and intact.
- Check that the wood product is clean from dirt, soil and or other contamination.
- Is the number of packages correct? Make a rough estimate of the quantity.
- Check that the product dimensions are consistent with the order and delivery note.
- Check the delivery and document any visible damage. Reconcile the wood species and markings with the order and delivery note.

In case of deviation or damage, the transport company must be notified and the supplier contacted for a decision on action.

3. Warehousing and storage

3.1 Warehousing and storage

Woodsafe fire-impregnated wood should generally be stored with protective plastic with UV protection, on a dry surface. If the packaging is damaged, the damage should be repaired to avoid water damage.



Checklist for storage and preservation:

- Raised from dry ground indoors >100 mm

- Raised from external damp ground >300 mm
- Ensure that packages are not stored at an angle

- Keep packaging until use
- Cover the remaining unassembled material
- Avoid contaminated water when handling
- Avoid storage in direct sunlight
- Use 1 coaster per meter, evenly distributed.

4. Personal protection and health

4.1 Personal protection

It is recommended to use industry-specific protective equipment such as safety glasses (in case of risk of splinters, splashing dust), protective gloves (in case of prolonged direct contact, sensitive skin, dehydration), and respiratory protection (in case of risk of dust e.g. when grinding, cutting). When grinding and polishing, use an extractor and ensure good ventilation and air exchange. Use safety glasses, gloves, and a breathing mask.

4.2 Dust and odor from untreated wood (not fire impregnated)

Odors and dust occur naturally from all types of wood to a greater or lesser extent. Some types of wood such as cedar, thermowood, thermo ash, heat-treated wood have a strong odor and where, for example, heat treatment contributes to very fine dust that can irritate the respiratory tract, skin and eyes. When working with cedar, heat-treated or modified wood, a respirator should always be worn. People who are sensitive to allergies, odors and the like or who experience symptoms should avoid working with such woods/products whether the product is fire-impregnated or not. Always ensure good ventilation in case of discomfort and risk of dust development. Also take note of the wood supplier's instructions.

4.3 Dust and air from **WOODSAFE**® PRO™

Woodsafe PRO does not generate increased risk related to P 4.2. **WOODSAFE**® PRO™ is managed with the same due diligence as P 4.2.

4.4 Fire retardant **WOODSAFE**® PRO™ on the surface of the wood

Excess fire retardant may normally be present on the surface of the wood panel on delivery. There is nothing unusual in itself, but depending on the area of use, it is recommended that excess fire retardant is brushed off in connection with surface treatment or sanded off regardless of the area of use. Ensure good ventilation and use a breathing mask.

4.5 The natural properties of wood

Wood is an organic material containing substances such as resin, lignin, hemicellulose and other substances such as fat, starch that can dissolve and stain the surface. This is a phenomenon of the intrinsic properties of wood that can occur during impregnation and drying from knots, resin flaps and resin pockets between growth rings.

4.6 In case of incidents

Or an emergency situation arises such as ingestion, eye contamination, wound injury or shortness of breath, it is recommended to immediately contact **SOS 112.** In all cases of incidents beyond normal control, consult a doctor. Bring the safety data sheet for the product. Link to the safety data sheet can be found here: SDS Woodsafe PRO

- Eye - rinse gently with lukewarm water from a drinking glass, or use eyewash.
- Ingestion - drink plenty of water. Do not induce vomiting.
- Skin redness, irritation - wash with soap solution, apply skin ointment.
- If problems persist, consult a doctor.
- Scan the QR code for safety data sheets
- Not sure? Contact Woodsafe Timber Protection +46 10 206 72 30

5. Processing

Regardless of wood type, it is always recommended to minimize exposure and inhalation of wood dust. Formation of very small to normal fine particles may cause irritation. Use industry-specific protective equipment according to section 4.1.

5.1 Specific modifications such as heat treatment

Sawdust from heat-treated material such as Thermowood is more fine-grained than sawdust from non-heat-treated wood. Therefore, it is of great importance to ensure good ventilation, local extraction and use respiratory protection with P3 filters at the risk of large amounts of wood chips, wood dust in the air and the environment.

5.2 Cedar wood fragrance, Heat treated, Acetylation

Wood species such as cedar have a clearer smell than spruce and pine, but even heat-treated treated pine and spruce can have a stronger smell than untreated spruce and pine. Other modifications such as acetylation (Accoya) have an odor of vinegar that can be enhanced by fire impregnation. Odor decreases over time to normal odor within 6 months after installation, but under certain conditions, odor can remain longer than 6 months. In exterior environments this is rarely a problem, while in interior enclosed spaces discomfort may be experienced. The easiest way is to place the material in the current environment and see how the scent is perceived.

5.3 Planing

WOODSAFE® PRO™ impregnated wood material can to a limited extent be planed for dimensional adjustment. This applies mainly to wood species such as birch, maple, ash, radiata pine and wood species with similar capillary properties. Always consult with Woodsafe support before p l a n i n g or similar action.

5.4 Drilling, perforation

Wood-based board (plywood) can be perforated according to details in the relevant certificate. Ensure the fire performance of the backing substrate in relation to the entries in the fire performance document.

5.5 Hole making

Fixing for electrical sockets, switches and the like can be carried out.

5.6 Surface brushing

Can be carried out on a limited scale and in relation to the structure and absorption capacity of the wood. Consult with Woodsafe support before execution.

5.7 Filing

Adhesives with water resistant 2-component properties (e.g. MUF adhesives, phenolic resin adhesives) are recommended. PU adhesives and EPI adhesives should be avoided as well as other types of adhesives if they are not tested and evaluated first. Always consult the Woodsafe support department before procuring adhesive wood products.

5.8 Pressing of veneer and wood layers

It is possible to apply thin layers on plywood. Pressing of veneers and laminates should always be consulted with the Woodsafe support department regarding fire class, temperature conditions during pressing, etc.

5.9 Moisture content

Traditional measuring instruments cannot be used due to the influence of the fire retardant on the conductivity of the wood product. The dry weight method must be applied. Please note that treated material is shipped to the customer from the manufacturing site with the correct moisture content, but depending on transportation and storage conditions on site or in the factory, the moisture content may change depending on the wood species' efforts to achieve the equilibrium moisture content. Reservation of certain proportion of wood panels with higher moisture content is described in the general conditions Woodsafe Fire Impregnated Wood (GRT 2023).

5.10 Tools

WOODSAFE® PRO™ does not cause immediate increased wear on tools, but planing steel, saw blades, drilling tools may become coated due to the reaction of the fire retardant from the heat generated by rotating tools.

6. Installation - general recommendations

Wood products have an expected long lifespan without the need to add chemicals for longevity, this should not be confused with fire impregnation which aims to improve the fire resistance properties of the wood product. It is important to ensure longevity in the choice of wood species while considering the suitability of the fire retardant (service class EN16755) as well as economic values and global sustainability goals.

6.1 Aeration

Wood can withstand being wetted by water as long as it has an opportunity to dry with good air exchange. A wooden facade should have free vertical ventilation (standing batten) regardless of whether the panel is mounted vertically (standing) or horizontally (lying). To ventilate a vertically mounted panel with horizontal batten is possible by using a standing air vent (double vent.) It is also important to provide ventilation below and above windows. In general, please follow the recommendations in AMA hus and träguiden.se.

6.2 Drainage, splashing and bouncing rainwater

Lack of dewatering is a risk of damage to wood panels that can cause prolonged high moisture content

without the possibility of drying, discoloration and mold growth caused by improper installation and lack of dewatering.

- When terminating against hard ground such as asphalt, stone slabs and the like, a distance of 300 mm between the panel's end wood and the ground is recommended.
- To reduce the risk of bouncing rainwater, a gravel or grass surface is recommended. If grass is used, it is important to keep the grass relatively short in relation to the proximity of the end wood.

Drainage materials such as a gutter, drip tray, etc. in direct connection with **WOODSAFE**® PRO™ can be carried out with the industry's material recommendation.

6.3 Capillary properties of wood

Wood is a natural material with capillary properties, which means that water must be led away from the wood in order not to be absorbed into the wood panel with the risk of water damage. As an example, when drip trays and window sills are used, there should be at least an 8 mm gap from the end wood of the panel down to the plate. It is worth knowing that the end wood absorbs/sucks about 20-25 times more water than the rest of the surface and the gap between the wood panel and the drainage plate reduces the risk of the capillary effect.

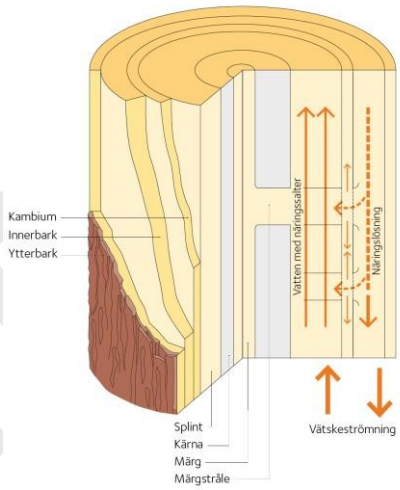


Image source: Wood Guide

7. Fixing in WOODSAFE® PRO™ wood materials

7.1 Fastening - Exterior and Interior

For exterior application in spruce panels that are painted over, the fastening should be galvanized or equivalent for outdoor use. For interior applications, fastener quality can be used equal to untreated wood.

7.2 Clothing materials that are not recommended

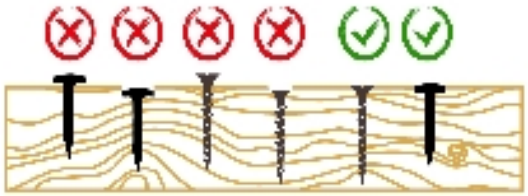
Materials not recommended for direct contact with **WOODSAFE**® PRO™ and drainage are aluminum, copper, untreated black steel and materials with similar properties. Incorrect selection and use of fastening materials can create dark fields around the fastener and dark etchings in the wood panel and eventually corrosion.

7.3 Corrosion

WOODSAFE® PRO™ increases minimal or no corrosion of fasteners. Read the *Evaluation Report* at www.woodsafe.com

7.4 Fixing depth in wooden panels

Fixing with screws, nails etc. should be in line with the surface line of the wood to avoid damage caused by fixing.



8. Installation

WOODSAFE® PRO™ fire-impregnated wood is available in several different wood species mainly for interior use. For exterior use, painted spruce panels are the usual product together with, in construction, built-in spruce products such as joists and battens.

Important - Ensure that the environment in which the product is installed is suitable for both **WOODSAFE®** PRO™ and the wood product.

Some types of wood are more sensitive than others, such as cedar, or if modifications have been made, such as heat treatment that makes the wood extra brittle.

8.1 The natural color of the wood may discolor other materials.

The color scale of different types of wood can vary greatly, such as cedar, which has distinct shades of red, yellow and brown. For best results regardless of wood type, it is recommended that panels and wood shavings are installed in a varied color pattern. The natural color of different types of wood is water-soluble and can affect porous and open surfaces such as concrete, plaster and anodized metal under the wood panel. Discoloration mainly occurs on untreated panels, for example when untreated cedar or oak is exposed to moisture, sunlight and rain - driving rain. If discoloration occurs, it is most obvious the first time and then decreases. If discoloration is perceived negatively, attempts can be made to wash off the color with ordinary or with added mild detergent such as green soap or if the discoloration is of a more difficult nature, use surface treatment products on the market more specifically designed to remove and prevent wood color precipitation, discoloration. Be sure to never use high pressure when cleaning wood panels. Contact your wood supplier or your paint retailer for guidance or products.

8.2 Panel

Normally wood panels are installed with 600mm c/c distance. Depending on the type of wood, width, quality and profile, 1 to 2 fixings per panel are recommended. Depending on the installation conditions, it is recommended, among other things, to use end splices for continuous splicing, more efficient installation and less waste. Splicing with end grain does not normally need to be done against nail battens but avoid multiple splices in the same assembly line to avoid cupping. Depending on the density and modification of the wood species, it is important to take precautions when assembling such as but not limited to:

- Heat-treated ash requires pre-drilling
- Cedar and heat-treated wood such as pine and spruce should not be fastened too far out at the edge and end with the risk of cracking.

9. Surface treatment

WOODSAFE® PRO™ can be surface treated, for exterior or interior use, with several different paint and lacquer systems. The surface treatment serves as protection against, for example, moisture, UV light and increases the life of the wood panel and gives a more uniform appearance over time.

9.1 Exterior spruce cladding to be painted

WOODSAFE® PRO™ is covered by a **type approval certificate that**, among other things, verifies the use class standard EN16755 INT1, INT2 and EXT. EN16755 is a product classification that includes suitability testing, through several product tests, of the properties of the fire protection product in different use environments.

- **WOODSAFE®** PRO™ When delivered to the workplace, the spruce panel must be shallow and medium stretched. The panel must be covered with facade paint as soon as possible when the product is exposed externally in a damp environment or similar. Tested and approved paint system according to EN16755 EXT is based on film-forming paint layers from Teknos and Engvall & Claesson, read more in the current type approval certificate.

For more information in choosing a color system or similar color systems tested, please contact Woodsafe support.
+46 10 206 72 31 or email: support@woodsafe.com

9.1.1 Recommended profile type and panel surface for protective paint layer

We recommend using the Vilma base profiles. These profiles have, for example, chamfered edges to ensure that a paint film adheres well and forms the correct thickness. *Pointed edges on a profile should be avoided* as there is a risk that the paint will not be thick enough over the pointed edge, which may mean that the fire impregnation is not sufficiently protected. *Therefore, only use profiles with so-called deadened edges*. For example, Vilma base profiles have a 2mm radius on corners to avoid them being pointed.

The surface should be finely sawn or equivalent for good adhesion of the paint. Follow the paint supplier's recommendation.

9.1.2 Natural properties of the wood

Each type of wood, including spruce for exterior use of different qualities and raw material origins, has its own unique properties where, among other things, the surface structure of the wood panel provides different conditions for adhesion, such as a sawn or planed surface. Wood species with high density and content of resin and resins etc. can also affect the end result.

9.2 How to paint Exterior Spruce Panel

Priming and intermediate painting should be carried out before delivery to the workplace and in a protected environment. This painting is best done by an industrial painting company that follows *Woodsafe's instructions for Industrial Painting on Fire Impregnated Wood*.

Finishing touches should be applied as soon as possible after installation.

WOODSAFE® PRO™ must be protected with a film-forming and opaque facade paint that protects the wood and fire protection against moisture absorption. It is thus the paint layer that must have protective properties and at least the recommended film thickness to minimize the risk of, among other things, adhesion problems, flaking, leaching, shade defects.

9.2.1 Storage of fire-impregnated wood at the workplace before painting

Fire-impregnated material must be stored dry, which means that storage in humidity above 70% should be avoided. This applies regardless of whether the material is protected by plastic packaging. For control, moisture meters can be placed where storage takes place. Moisture meters are available, for example, from Nordtec or Mätforum.

Ensure good ventilation.

9.2.2 Preparation for painting

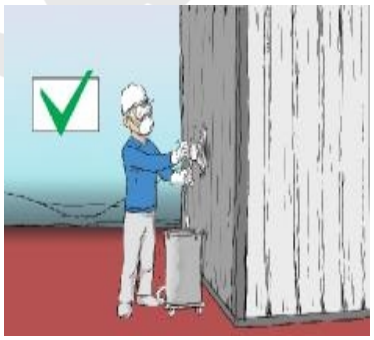
The wood panel must be free of contaminants such as fire retardant residues, loose wood fiber, gray fiber, dirt or other contamination before painting/surface treatment begins. In the case of industrial painting with primer on the wood surface, *brushing must be done* to remove the above described before painting.

9.2.3 Moisture content in wood panels

The recommended moisture content of wood when painting exterior wood panels is max 20% and max 70% humidity. If possible, aim to paint at around 30-60% humidity. Be aware that wood panels do not dry from wet to dry just because the weather is nice for a few days. Be sure to check for moisture before painting. The kiln method needs to be used for correct moisture determination because the fire impregnation causes ordinary moisture ratio meters to show the wrong value. Painting on a damp wood surface can drive fire retardants through paint layers and binders and thus create a visual defect.

9.2.4 Painting at the right temperature

The ideal temperature for outdoor painting is 20-23°C, warm evenings and not too cold and humid nights. Minimum temperature +10° C for water-based systems, oil-based systems +15° C for satisfactory drying. Some paint systems, such as linseed oil paint, must have access to good air circulation in order to dry.



9.2.5 Execution of painting and time of year

You have the best chance of getting the right painting weather in the months of the year that don't have the letter 'r' in them. In other words, May, June, July and August are the painting months of the year. Depending on the season, for example in the case of a rainy late autumn, cold nights and so on, it is particularly important to adapt the painting work to the current weather conditions.
It is therefore important to ensure the correct moisture level in the wood panel. If wood panels are installed in late autumn and in exposed locations, they should be fully painted for the winter season.

- Acclimatize the wood panel before painting
- Do not paint on
    - sunniness or frozen/frozen surface
    - wet or dewy surface

- Do not paint if there is a risk of rain, dew or frost within 24 hours of painting.
- The drying process must not take place in direct sunlight.
- Be sure to smooth the paint layer with a brush before the paint layer has started to dry and watch out for paint bubbles.

If the painting season is less favorable during the year, the panel, mounted or unmounted, shall be weatherproofed. The weather protection shall be adapted to the correct temperature of the air and the panel.

9.2.6 Finishing coat and paint thickness

It is recommended that the finish coat should have a paint thickness of at least 40my dry film and cover wood beards (loose wood fibers standing out from the surface of the panel) on a finely sawn surface. The wet film can be measured with a wet film comb. If necessary, consult the paint supplier.

9.2.7 Extra wide dimensions

Wide dimensions such as 25x300mm, 21x170mm are recommended to be primed also on the back side to minimize the risk of cupping. Primed wood panels should be stored dry and protected from contamination before installation.

9.2.8 Color system

Only use film-forming paint systems from well-known manufacturers such as Engvall & Claesson, Jotun, Sherwin Williams, Teknos, Tikkurila. For use class approval EN16755 EXT, see the current type approval certificate where current colors are described. It is important to use within the paint system and that the primer and intermediate layer is of type oil alkyd where the intermediate coating has film-forming properties against moisture. Waterborne systems as described above often work well if the preparations are properly carried out and controlled. Exposed surfaces such as near the coast, lake or sun bleached and damaged surfaces should be visually assessed from case to case.

on a case-by-case basis and should be maintained at more frequent intervals if necessary or replaced immediately with a new Woodsafe panel.

9.2.9 Avoid the following paint systems and paint types

The following paint systems are *not* recommended - *due to the increased risk of moisture absorption in the wood panel which can lead to visual defects in the paint layer and the risk of leaching of the fire retardant:*

- *Diffusion-open* paint systems such as sludge paint and similar.
- *Glazes* due to insufficient film formation and paint thickness.
- *Bets* because they do not form a film and the color thickness is not sufficient.

9.2.10 Oiling of end-grain wood

In exterior environments, it is recommended that the end grain and other cut surfaces be primed and/or painted as a preventive measure to prevent the capillary properties of the wood from drawing moisture into the end grain.

9.2.11 Listing

Woodsafe does not have knowledge of all color systems available on the market.

9.3 How to paint Interior panel

9.3.1 Preparation for painting

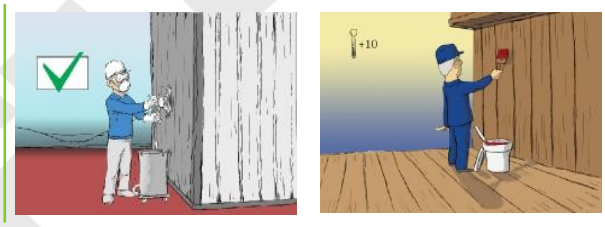
It is recommended that the wood product should be free of contaminants such as fire retardant residues, loose wood fibers, gray fibers, dirt or other contaminants before painting/surface treatment is started. In industrial painting, separate brushing is recommended in connection with painting.

9.3.2 Acclimatization is important

It is recommended that wood panels b e tempered before painting. Taking i n t o account previous storage conditions, e.g. outdoors, in cold storage, damp surroundings and the like, it is imperative to store indoors until acclimatization has been achieved. Painting shall not be carried out on wood panels for indoor use that exceed 12-14% moisture.

9.3.3 Painting at the right temperature

Can be carried out at a minimum temperature of +10° C for waterborne systems, oilborne systems +15° C so that drying can take place satisfactorily, although it is possible to paint at a lower temperature. Some paint systems such as linseed oil paint must have access to good air exchange to oxidize and dry.



9.3.4 The choice of paint and coating systems must be of high quality.

Proofing is always recommended for initial checking of results. Several different paint systems such as lacquer, stain, opaque paint, oil are tested on different types of wood. Paint, varnish can shorten the time for ignition and initial fire progress, for example Figra value, and then return to more normal progress related t o fire test results. It is worth considering that paint, varnish layers can increase smoke development from e.g. -s1 to -s2 but also cause a peak of e.g. Figra value which can result in C-class instead of B-class caused by the coating. Consult the Woodsafe support department in case of uncertainty.

9.3.5 Providers are responsible for ensuring

that the properties of the paint are suitable for application on **WOODSAFE**® PRO™ such as adhesion, penetration, rash, shade change, etc. Consult customer service in case of doubt. Warranty and complaints regarding the choice of paint system and its effect, influence and suitability for use on Woodsafe impregnated wood are always the responsibility of the c u s t o m e r / e x e c u t o r .

10. Facade cladding Spruce panel (SP-Fire 105)

WOODSAFE® PRO™ can be surface treated with several different systems as protection and increase its lifespan, get a more even appearance over time and reduce the risk of growth such as black mold caused by air pollution. Read more under chapter 9.

10.1 Installation instructions for SP Fire 105 or other fire class

Read the current installation instructions, which can be downloaded from the Document Library at www.woodsafe.com. If the installation instructions do not match the current facade structure, contact your Woodsafe Dealer or Woodsafe support for advice +46 10 2067230.

10.2 Use class (EN16755 EXT)

WOODSAFE® PRO™ is covered by a type approval certificate from RISE according to EN16755 EXT with requirements for surface treatment in exterior applications.

10.3 Maintenance

WOODSAFE® PRO™ fire-resistant properties are maintenance-free with proper maintenance of paint layers.

10.4 Damaged cladding

Shall be replaced with a new WOODSAFE® PRO™ impregnated product. **WOODSAFE**® PRO™ shall be protected with a film-forming facade paint that protects the wood and the fire protection against moisture absorption.

10.5 Surface treatment

Read instructions in chapter 9

10.6 End wood and cut surfaces

See instructions in chapter 9.

10.7 Mould growth and cleaning

Black mold and the like can be caused by air pollution or improper installation. Black mold is a general problem not associated with **WOODSAFE**® PRO™ which in itself does not contribute to mold or algae growth. If cleaning is required, wash gently with water and a mild detergent designed for façade cleaning. Never use high pressure when cleaning as this will damage the wood and force water into the wood panel. If the cladding needs to be r e p a i n t e d , see separate instructions.

10.8 Visual inspection

It is the client's responsibility to make an annual visual assessment of wear and tear, damage and paint layers for optimum service life. Exposed locations such as the sunny side, near the coast, etc. can affect the maintenance interval of both the need to replace the panel and the maintenance of the existing paint layer. **WOODSAFE**® PRO™ shall be protected with film-forming facade paint that protects the wood and fire protection against moisture absorption.

10.9 Resin and natural substances in wood

During the drying process, the wood is heated to a temperature that can cause resin flaps to open and resin to float to the surface. The resin can be sanded away but is not a basis for complaints. Woodsafe recommends the customer to deliver high quality wood material to be impregnated to minimize such risks as the appearance of resin, etc. Read more P. 4.5
Precipitation of natural substances is not a basis for a complaint.

11. Recycling, waste management and environmental aspects

Waste material from processing shall not be used, -processed into bedding regardless of stable bedding, pet bedding or general animal husbandry. Waste material from processing, such as wood shavings and wood chips, shall not be used as raw material for the production of pellets, briquettes or other combustion material.

11.1 Waste code

WOODSAFE® PRO™ sorted with waste code: 17 02 01

11.2 Incineration of residual product

WOODSAFE® PRO™ is not recommended to be burned in private biofuel plants, stoves or wood boilers. This is due to the deterioration of combustion properties, which can lead to coke formation in the fireplace and damage the system. Combustion is recommended to be mixed with ordinary untreated wood in municipal heating plants.

11.3 Environmental aspects

WOODSAFE® PRO™ is not classified as an environmentally or health hazardous product. Woodsafe PRO has suitability approved properties according to EN16755 INT1, INT2 and EXT which proves that fire retardant chemicals are not leached from the treated wood, which means that the risk of environmental impact and impact on human health is minimal. Use class approval (EN16755) is verified in type approval certificate TG0263-08.

11.4 EPD

Woodsafe provides the EPD on the website www.woodsafe.com. EPD reference: S-P-05387

11.5 REACH (Registration, Evaluation, Authorization and restriction of Chemicals)

Formally, Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the registration, evaluation, authorization and restriction of chemicals. Regulation relating to substance and preparation where classification is specifically linked to the substance and preparation, not to the treated product.

WOODSAFE® PRO™ treated wood product is not subject to authorization to use or dispose of as a wood preservative treatment against rot, nor other restrictions on placing on the market. However, the refinement process of wood means that >0.1 or >0.1% by weight of SVHC classified substance according to the REACH candidate list (EC1907/2006) published by ECHA (European Chemicals Agency) on 24 June 2013 is present in wood impregnated with Woodsafe PRO. Woodsafe PRO contains a substance included in the candidate list in the form of the element boron. The general limit value for category H360F is <0.3% by weight for mandatory labeling. As a manufacturer, Woodsafe Timber Protection AB is required by REACH (Regulation (EC) No 1907/2006 of the European Parliament and of the Council) to provide information from manufacturers to downstream users.
The candidate list will be regularly updated with new chemicals. Woodsafe manages this via ISO 14001:2015 environmental management certification and communicates via website (www.woodsafe.com) and

sustainability report.

12. Quality and performance of fire-impregnated wood products

12.1 Wood material sorted into a product grade has a natural variation

Wood products have a natural variation in composition and material as it consists of natural raw material. This applies even when the wood product is sorted to a specific quality, which means that industry practice is that a small proportion of a delivery can be outside the specified quality.

12.2 General results of the Woodsafe fire impregnation process on a wood product

The result of fire impregnation comes from a combination of all the parameters of the wood material (raw material, treatment method, dimension, etc.), impregnation and drying process. The first part of the fire impregnation process consists of the fire impregnation itself, where the wood product is placed in an impregnation tube that is filled with fire impregnation agent. The impregnation agent consists largely of water in this part of the process. The second part of the fire impregnation process is the drying process where the wood material is dried at around 50+ degrees with the aim of drying the water out of the wood, largely, so that the fire retardant remains and is fixed in the wood. The impregnation process therefore affects the wood through these process steps.

12.2.1 The natural results of the impregnation process for the wood material

- Small swelling, which means that height must be taken into account when designing wooden profiles, especially tongue & groove and the like.
- Twisting and cupping. Normally marginal and does not normally affect subsequent grading and assembly.
- Cracking can occur but is normally minimal and normally has a marginal effect on subsequent grading.
- With WOODSAFE® PRO™ fire impregnation, current marks may be present on the back of materials less than 27mm thick and on both the front and back of materials over 27mm thick.
- WOODSAFE® PRO™ impregnation residues may remain on the surface of the material after completion of the impregnation process. The residues need to be brushed off before surface treatment. Read more under points 4.4 and 9.
- Natural substances in the wood material may during the impregnation process and afterwards, normally to a lesser extent, have moved onto the wood surface. Examples of this are resins and resins. If these are not accepted, they should be removed after the impregnation process.

12.2.2 Moisture content after the impregnation process before delivery from Woodsafe

In the drying process of WOODSAFE® PRO™ , Woodsafe aims for the following target moisture ratios depending on the wood product and species. Individual pieces of wood may be outside the ranges listed below due to natural variation:

- Exterior, not heat-treated: 15-18%.
- Exterior, heat-treated: 5-8%.
- Interior, not heat-treated: 6-10%.

12.3 Quality of a specific fire impregnated wood product

If you need to know what specific quality and grading a certain product should have upon delivery, please contact your wood supplier and Woodsafe dealer. It is the dealer who manages the delivery quality of the wood product.

13. Complaints procedure

13.1 My volume limit for complaints

Volume, which can be considered to deviate from normal in terms of fire impregnation results, below 3% of the order volume is considered, according to industry practice, to fall within the normal range for naturally varying wood materials.

13.2 Responsibility for decision and action

The customer and the subcontractor hired by the customer are responsible for decisions and measures such as surface treatment. The choice of paint system and its effect, impact and suitability for use on **WOODSAFE**® PRO™ impregnated wood is always the responsibility of the customer/contractor to ensure.

In the case of complaints, the builder's and subcontractor's, e.g. painter's, self-inspection must always be reported in relation to Woodsafe's associated documents.

13.3 Basic conditions for complaints

1. Complaints must come from and be handled by the Woodsafe dealer and be relevant to Woodsafe's part in the final product.
2. The damage must be reported to the Woodsafe dealer - signed and dated.
3. The damage, if relevant, must be reported to the transport company - signed and dated.
4. The damage, if relevant, must be reported to the paint shop - signed and dated.
5. The damage must be documented in text - signed and dated.
6. The damage must be documented in a picture - signed with the date
7. Relevant information to be provided - signed with date
    a. Description of the workplace, time of reception of the product, storage, acclimatization, weather conditions, time of possible assembly of the product.
8. If the product is visibly and obviously damaged or defective, notification must be made before installation.
9. Woodsafe order number