

THE DURABLE FIRE RETARDANT TREATMENT OF WOOD

# Magazine

WOODSAFE TIMBER PROTECTION AB | SWEDEN

## Premiere of WOODSAFE PRO GREEN

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## World of Volvo

Page 10



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#### WOODSAFE - WPA AWARD WINNER

For their innovative products and commitment to research and development of sustainable wood products.  
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### Let's share a story:

Fifteen years ago, our energy consumption for processes was 10% less than today, but now we produce thousands of cubic meters more—specifically, 700% more. To further improve efficiency and compliance with our goals, we've proactively swapped all our lighting for energy-efficient LED options, both in the offices and the factory, as well as outdoors. Moreover, we've largely replaced other electricity-hungry equipment with high-efficiency alternatives, including fan motors, ventilation units, and climate systems.

As part of the Woodsafe Group, production efforts and environmental targets increased, we've installed efficient control systems alongside specialized drying programs we use, and we're recycling our old

drying units, replacing them with biofuel heat sources that yield zero CO2 emissions. Speaking of climate impact, our entire facility now runs on biofuel heating, electricity generated from our solar energy system, our loaders operate on HVO fuel, and all our forklifts are electric and charged by the sun's rays from our rooftops.

But **SAFER LIVING™** means so much more. Let's talk about trustworthy documentation, which our products are tested against. We don't just hire unknown professors, universities, or other entities from the Baltic states or Eastern Europe. Instead, we engage accredited notified bodies, well-known organizations like RISE, for testing, inspection, and certification. In fact, we've conducted all the fire tests that our certificates are based on, unlike some players who

simply "inherit" documentation because they use the same fire retardants as others. This means we know what is effective and what isn't, as we handle all the impregnation processes ourselves.

### SAFE FOR NATURE SAFE FOR YOU

Here, environmental and health aspects come into play, an area that is often susceptible to greenwashing. One might wonder, how green and uniquely eco-friendly can a product truly be? For us at Woodsafe, all chemical substances are REACH compliant, we maintain an active chemical register throughout our operations, we have zero emissions, and our entire production is in a leak-proof zone. Our fire protection also has documented enduring characteristics according to usage classes for exterior environments, meaning the impact on land, groundwater, and microorganisms is minimal. For you, the user, for residents, and for our employees, it's a given that we do not expose anyone to harm, whether in terms of health or the environment.

"This is just a glimpse of what **SAFER LIVING™** means and what we at Team Woodsafe stand for"



- / Get ready for a thrill ride in our shiny new Fire Lab!*
- / We're stacking up those ISO certifications like pros!*
- / The Professor is in the house to ignite your curiosity!*
- / We're pumped and ready for some serious fun ahead!volumes*
- / A whole new area of sustainability is heading your way! Get inspired by innovations that stand the test of time!*

## Hangout with some of Our Awesome Partners

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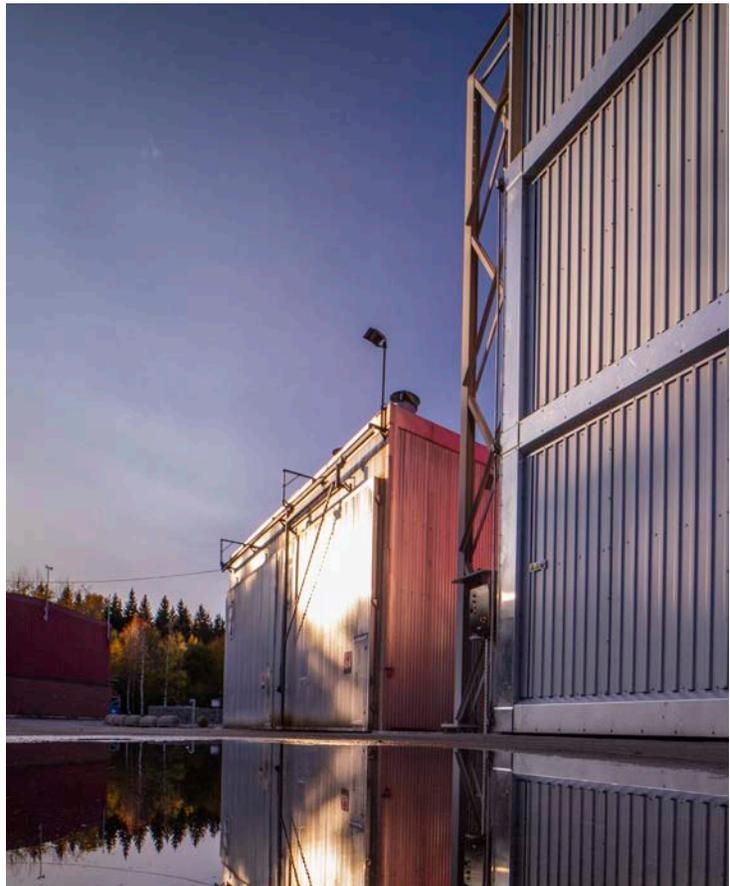
## Top-notch boards

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- / Woodsafe WPG
- / WRD - We have more to tell
- / Woodsafe staff presentation
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- An opportunity to gain invaluable knowledge from leading manufacturers of FRTW
- / At home with partners
- / Release of FRTW for *DUMMIES*





Nearly thirty-five years have passed since I embarked on my journey in passive fire protection. Time indeed flies, and reflecting on the journey reveals how Woodsafe Timber Protection AB has transformed from a modest participant in the wood industry into a robust and reputable company across Europe.

The success of Woodsafe Timber Protection is evident through its role in supplying fireproof wood for remarkable projects such as Mjöstornet (the tallest wooden building in the world), Gardermoen Pir-Nord (the largest wooden roof globally), the Mall of Scandinavia (Northern Europe's largest shopping center), Cederhusen (the world's largest wooden city block), and the Swedish pavilion at the Dubai 2020 World Expo. Since 2015, we have successfully handled over 10,000 projects.

Now, 34 years on, Woodsafe Timber Protection AB has become part of a larger group that includes a focus on Research and Development, allowing us to create new products and enhance processes that contribute to a sustainable future built with wood.

Our core principle, SAFER LIVING™, encapsulates our business philosophy, emphasizing sustainable fire properties, production, and work environments as fundamental to our objectives.

This is our second magazine edition, and I hope you find it an enjoyable read.

Thomas Bengtsson  
Founder of Woodsafe Group

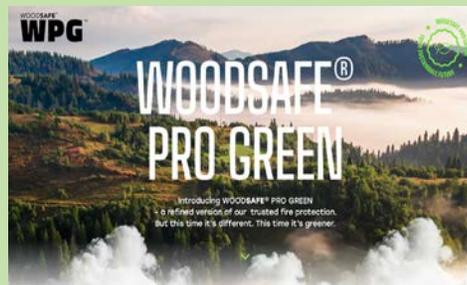
This publication from Woodsafe Timber Protection AB has reservations for typos and printing errors. WOODSAFE® is a registered trade mark of Woodsafe Timber Protection AB. This magazine, text and photos is covered by Copyright® 2023

# Latest news



## WOODSAFE RESEARCH & DEVELOPMENT

The lab is ready. Everything is in place. Let's go for it. Woodsafe Research & Development is operational from Q1-2024 and product development is in full swing under the leadership of renowned professor Dr Lazaros Tsantaridis.



## LAUNCH OF PRO GREEN™

WOODSAFE® WPG™ has been developed over a long period of time to meet society's increased environmental & health requirements for construction products. WPG is a highly effective fire protection for wood without substances on the REACH SVHC list. Green? No, WPG™ is transparent

Woodsafe Timber Protection is now certified according to the global system **WELL Building Standard**, which aims to improve health and well-being for those living and spending time in various built environments.



# World's Leading FRTW manufacturer unveils licensing partnership with Woodsafe in Europe for premium fire-retardant wood solutions

*"Hoover Treated Wood Products Inc. and Woodsafe Timber Protection AB Forge Licensing Agreement for Premium Fire-Retardant Treated Wood"*

*Together, the largest players in the US and Europe within their respective industries are joining forces to deliver top-quality fire-retardant wood solutions.*

– Hoover Treated Wood Products (HTWP) has granted an exclusive license to Swedish wood innovation company, Woodsafe Timber Protection (Woodsafe), to use its signature Exterior FireX™ formula. The partnership enables a streamlined process to ensure this life-saving technology is available in Europe.

Hoover's ExteriorFireX™ – available as **WOODSAFE® WFX™** – is pressure-impregnated fire-retardant-treated lumber and plywood that provides third party tested and certified fire protection for applications directly exposed to the weather. Woodsafe will offer Exterior WFX™ treated lumber and plywood for commercial and residential buildings throughout Europe.

"At Hoover we are dedicated to keeping people safe where they live and work," said Dave Gillrie, CEO, HTWP. "Woodsafe's ability to use our life-saving formula means we are protecting people not just in the United States, but Europe as well. We are excited to offer ExteriorFireX™ throughout Europe."

With more than 20 years of treatment experience, Woodsafe is Europe's largest fire-retardant treated wood (FRTW) manufacturer. Woodsafe is steadfast in creating sustainable, durable products in addition to its strong commitment to fire protection and life safety.



"We believe in growing communities where the wood industry works together to build safe and sustainable homes for everyone," said Thomas Bengtsson, founder, Woodsafe Group. "Hoover and Woodsafe are equally committed to innovation that makes the world a safer place, which is what makes this partnership such an exciting step forward for the world of FRTW."



This license is the second European partner to utilize Hoover's life-saving technology. Hoover has a long relationship with UK company, PTG Treatments. The addition of Woodsafe to Hoover's European portfolio opens the door to better sharing of best practices and collaboration.

*"I'm bursting with pride and thankfulness as I accept this awesome award from the biggest manufacturer out there after 30 incredible years in the game—not just for me, but for the whole Team Woodsafe and my family who's been my backbone through it all. When I first stepped into Hoover's Thomson plant, I knew they were a big deal, but I had no clue how huge their influence really was. This experience really shows how massive their operation is,"*  
*says Thomas.*



*"Meet our dynamic powerhouse trio: Stefan Hedqvist, our dedicated Production Manager; Peter Johnson, the visionary leader of Product and Development; and Mathias Dikert, the expert behind our fire-retardant treatments. With their cheerful demeanor and motivation, they truly represent the spirit of our team!"*

#### **ABOUT HOOVER TREATED WOOD PRODUCTS**

Hoover Treated Wood Products, Inc, in business since 1955, supplies a comprehensive portfolio of pressure-impregnated kiln-dried lumber and plywood products for fire retardant and preservative applications. Hoover has multiple company-owned treating facilities, conveniently located to service 100 plus member stocking distributor network which thoroughly covers the United States.

Hoover's mission is to protect people where they live and work with the proprietary Pyro-Guard® and Exterior Fire-X® products. Hoover meets or exceeds the requirements for FRTW as defined in the International Building Code and is mentioned by independent third-party inspections from Underwriters Laboratories.

#### **ABOUT WOODSAFE TIMBER PROTECTION AB**

Woodsafe Timber Protection AB is the only manufacturer exclusively engaged in fire-retardant treatment of wood and plywood products. Since our establishment in 1990, we have developed customized equipment and highly efficient processes according to CO2 SMART. The business is subject to third-party manufacturing control and is since 2008 the only manufacturer with type approval certificates according to the building code. Woodsafe were Europe's first CE certified manufacturer of fire-retardant wood and our quality and management system is certified according to ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, EcoVadis Gold, WQS 2.0.

We are proud to manage more than 1450 unique projects annually. Reference projects include, among others, such as World of Volvo, 79&PARK, world's tallest wooden skyscraper Mjøstårnet i Brumunddal, the world's largest oak roof Gardermoen Pir Nord, Ilulissat Icefjord - UNESCO World Heritage Center Greenland, Ceder husen, Mall of Scandinavia and more.



25M (I)

# Woodsafe announces recruitment of internationally recognised researcher Dr. Lazaros D. Tsantaridis



Woodsafe Research & Development AB (WRD) is pleased to announce the appointment of Dr. Lazaros D. Tsantaridis as Head of Research at the WRD Fire Impregnated Wood Research Centre in Västerås, Sweden.

Dr. Lazaros D. Tsantaridis brings extensive experience in fire research, particularly focusing on fire safety in timber construction. His work includes evaluating fire reactions and industrial applications at RISE Wood Building Technology in Stockholm, Sweden. He has published numerous scientific articles in peer-reviewed journals, conference proceedings, and research reports.

"It is with great pleasure that we announce Dr. Lazaros D. Tsantaridis has

assumed leadership in the development of Woodsafe Research & Development. As a senior researcher, Dr. Tsantaridis has established a unique research trajectory in fire-retardant wood, which has gained national and international recognition," says Thomas Bengtsson, founder of the Woodsafe Group.

In February 2023, WRD began construction on a state-of-the-art fire research facility. Now, with Dr. Tsantaridis at the helm as senior researcher and technology specialist, we are set to significantly enhance our capabilities, thereby improving the wood industry's ability to develop sustainable, fire-protected wood products.

"After nearly 36 years with Tråtek, SP, and RISE, I felt it was time to transition from the institute environment. I am grateful for my years in the research group led by Birgit Östman, where we successfully addressed the fire safety issues in multi-storey wooden buildings. The findings are documented in 'Fire-Safe Wooden Buildings, Version 3.' When version 1 was released in the early 2000s, the timber industry claimed that fire research was complete. The opening of Woodsafe Group's research centre proves that our work is ongoing. I am excited to lead the development of the WRD research lab, as asked by Thomas Bengtsson," stated Lazaros Tsantaridis.

"We have a long-term partnership with RISE and look forward to expanding and optimizing our product testing and certification processes at WRD under

Dr. Tsantaridis' guidance," added Peter Johnson, Product and Development Manager at Woodsafe Timber Protection AB.



# World of Volvo





Image used with permission from  
World of Volvo, 2024

# “World of Volvo is a unique blend of Scandinavian landscape, environment, and traditions”

World of Volvo is a unique visitor experience located in Gothenburg, Sweden, that celebrates the history and legacy of Volvo, one of the world’s leading automobile manufacturers. Opened in June 2022, this venue combines exhibitions, experiences, and interactive displays that highlight Volvo’s heritage, innovation, and commitment to sustainability.

**Key features of World of Volvo include:**

**Exhibitions:**

The venue showcases Volvo’s history, featuring iconic cars, design concepts, and technological advancements. Visitors can learn about the brand’s evolution from its founding in 1927 to its current state as a major player in the automotive industry.

**Experiences:**

World of Volvo offers various interactive experiences that allow visitors to engage with Volvo’s philosophies, including its focus on safety, sustainability, and design.

**Restaurant and Café:**

Visitors can enjoy a meal or refreshments at the on-site restaurant, which features seasonal and locally sourced ingredients.

**Event Space:**

The facility also serves as a space for events, seminars, and workshops related to automotive technology, innovation, and sustainability.

**Location:**

Situated near the waterfront in Gothenburg, the location is designed to be an attractive destination for both locals and tourists.

In this extraordinary project, Woodify AB has delivered high-quality wooden slats that have been custom-sized for optimal results. The slats provided are crafted from sustainably sourced Swedish timber and have been fire-treated to comply with national building regulations and European fire standards through Woodsafe Timber Protection.



Image used with permission from World of Volvo, 2024

**Facts about Woodify AB**

Woodify AB emphasizes sustainable forestry practices, ensuring that the wood used in their products is sourced from responsibly managed forests. This commitment to sustainability aligns with global trends toward eco-friendly building materials. The company offers a variety of wooden products, including cladding, wooden slats, and other timber solutions suitable for both commercial and residential projects. Their products are designed to meet various design and functional needs. Woodify AB prioritizes high-quality standards in their manufacturing processes, ensuring that their products are durable, reliable, and compliant with required regulations. The company focuses on innovative solutions that enhance the aesthetic appeal and functionality of wooden products. They may incorporate advanced treatments, such as fire protection, to ensure safety and longevity.

**Custom Solutions:** Woodify AB works closely with architects, designers, and builders to provide customized solutions that fit specific project requirements, enhancing the overall design and performance of building projects.

In summary, Woodify AB stands out as a forward-thinking company dedicated to providing high-quality, sustainable wooden products that meet the needs of modern construction and design while contributing positively to the environment.

# Bäckegårds

## A manufacturer that stands out from the crowd



We are Bäckegårds - a woodworking family business in second generation, founded in 1981 by Anders Sveningsson, now run by siblings Andreas and Frida Sveningsson accompanied by CEO Johan Nordlund.

### Working wonders with wood

With pride in our craft, we provide you with high quality wooden products, produced with a gentle hand and a huge amount of care for your product. We consider our employees as our extended family. Our products are their products and Bäckegårds would not be without their ambition and wholehearted participation in our efforts to become Sweden's most flexible woodworking company. With a fantastic group of employees, a great network of timber suppliers, six moulders, several surface treatment options and our own SBI rig, we offer knowledge and resources that will not be found elsewhere.

We are also very proud to be Woodsafe's All-in-One concept partner in a cooperation where Bäckegårds' vast woodworking experience is blended with Woodsafe's outstanding know-how in fire-retardant treatments. Together we produce products where reaction to fire requirements are met without compromising with the aesthetic expectations our high-end products most often face. Bäckegårds is a CE-certified manufacturer of fire-retardant wooden products with all woodworking and surface treatment facilities in-house. This is what makes us unique

and is the reason why we are Woodsafe's only All-In-One concept partner.

We strive to be best in class in all we do. Therefore we trust Woodsafe with all our fire-retardant treatments. For outdoor products Woodsafe is the only actor providing type-approved solutions and the only actor on the Scandinavian



market providing a water-proof fire-retardant system suited to outdoor conditions. For indoor products alternatives exist but our common know-how on production of high-end interior products and Woodsafe's dedicated support to our ongoing development projects will be difficult, if not impossible, to match!

A natural step to reach our goal, to be best in class, in fire retardant products, was our recent investment in our own SBI-rig.

Now we can learn more about any potential parameter's effect of reaction to fire properties, perform customized product testing and help You sort out any doubts on the performance of the product You wish to use in Your up-coming projects. Our rig fits perfectly into the development of Woodsafe R&D, which is an unprecedented investment that opens enormous possibilities to bring the whole area of fire-retardant wood forward!

We are concerned about our society's sustainability. In total, our building sector contributes by up to 40% of our CO2 emissions. We are absolutely certain that our best possibility to help reducing those numbers is to provide easy-to-use wooden products to challenge the incumbency of steel, concrete and other materials associated with heavy CO2-emissions. With such an approach we may store CO2 instead of increasing its presence in the atmosphere. To succeed, and to be able to use wood in larger scale, the fire hazard must be addressed.





Backegards and Woodsafe share a strive is to lead the development of wooden products that are fire-safe, light, flexible and economically appealing alternatives to traditional CO2-heavy materials. Providing solutions to anyone who desires to build in wood is our outmost important role and means true sustainability to us!

Besides working with our products, we have implemented management systems in our production that conforms to ISO standards 9001, 14001 and 45001. This ensures that Backegards on an everyday basis look to minimize our environmental impact and work responsibly with the invaluable resources our forests produce. Of course, we are also certified according to the Chain-of-custody standards of both FSC® and PEFC.

Welcome to Backegards - for a better & safer world of wood - Made in Sweden





# WOODSAFE RESEARCH & DEVELOPMENT A World-Class Fire Laboratory



At WOODSAFE RESEARCH & DEVELOPMENT AB (WRD), innovation is at the heart of what they do. This forward-thinking company is dedicated to creating cutting-edge solutions that ensure both wood protection and fire safety, making a significant impact in the construction industry. Their expertise lies in developing advanced treatments that not only enhance the durability of wood but also significantly improve its fire performance.

What sets WRD apart is their unwavering emphasis on research and development. They are passionate about finding environmentally friendly and sustainable approaches to fire protection of wood. By partnering with industry experts, researchers, and academic institutions, we ensure that their products not only meet but exceed modern safety standards. This collaboration allows them to stay ahead of the curve in responding to the growing demand for safer building materials.

## Services and Expertise

WRD offers a comprehensive suite of services and expertise focused on enhancing and protecting wood materials. Here are some of the key offerings:

### Fire Testing:

A variety of fire tests and relevant evaluations, such as durability testing, can be conducted using the latest technology and in accordance with European standards. The fire laboratory is led by

the renowned Dr. Lazaros Tsantaridis, who has an impressive professional career spanning over 35 years at RISE. Alongside Birgit Östman, he has contributed to numerous handbooks and dissertations regarding fire-protected wood, particularly in the context of multi-story buildings.



## Research and Innovation

With a commitment to continuous improvement, WRD constantly explores new technologies and formulations that enhance product effectiveness. Their focus on sustainability and environmental responsibility ensures that their solutions are not only effective but also kind to the planet.

## Consultation and Technical Support

Understanding that each project is unique, WRD provides expert consultation to help architects, builders, and contractors choose the right products for their specific needs. This guidance ensures that wood protection measures are seamlessly integrated into building designs.

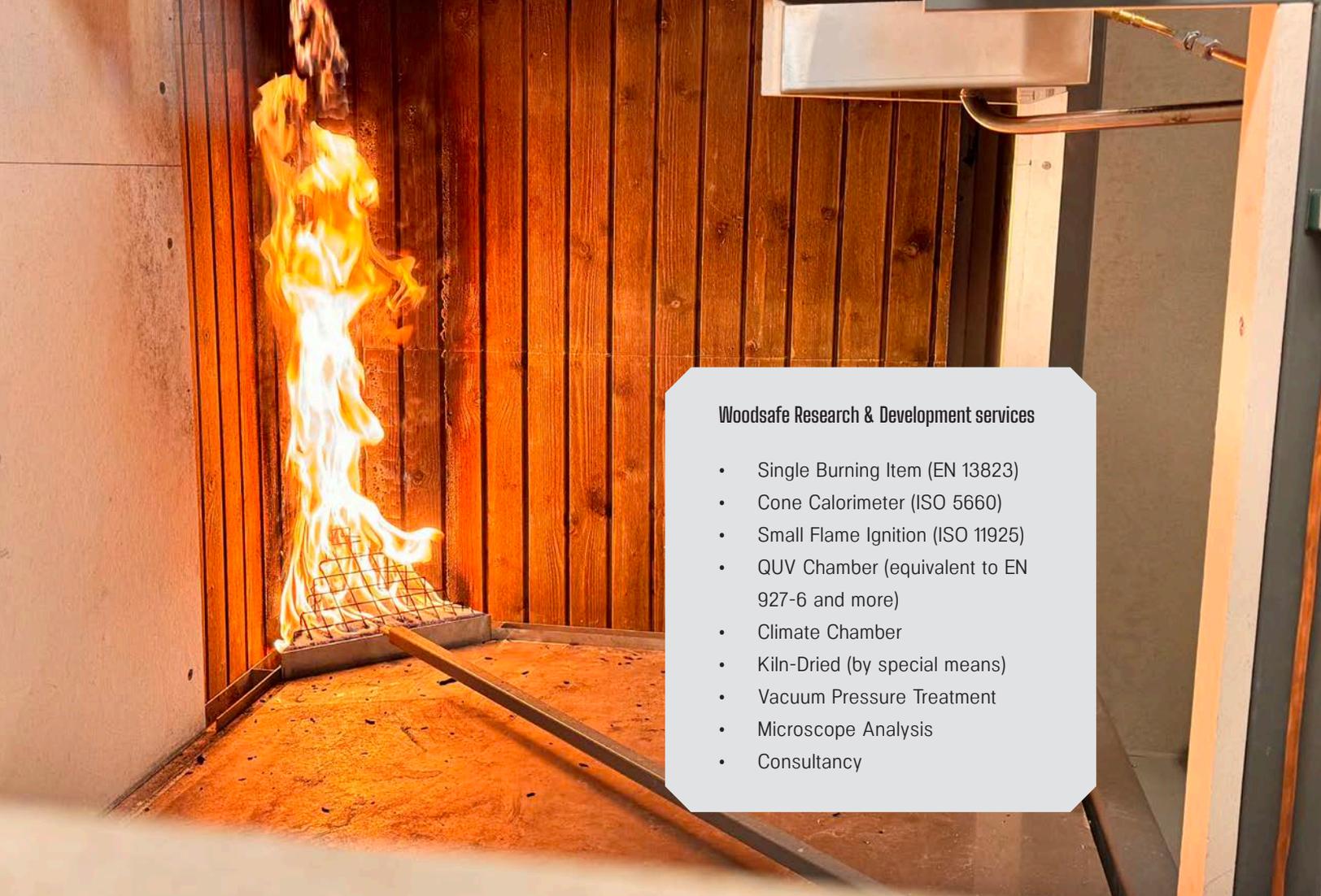
## Customized Solutions

WRD recognizes that no two projects are alike. They collaborate closely with clients to create tailored solutions for residential, commercial, and industrial applications, ensuring that all unique requirements are met.

## Training and Education

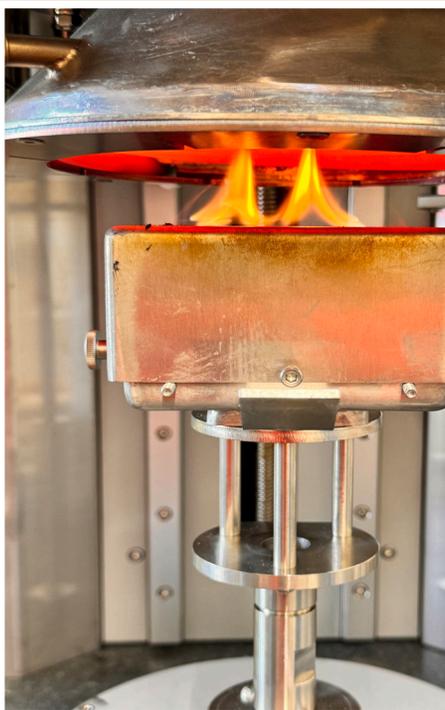
To promote industry best practices, WRD also offers training sessions and educational materials. They empower professionals in the field with the knowledge they need to effectively apply wood treatment and fire safety principles.





### Woodsafe Research & Development services

- Single Burning Item (EN 13823)
- Cone Calorimeter (ISO 5660)
- Small Flame Ignition (ISO 11925)
- QUV Chamber (equivalent to EN 927-6 and more)
- Climate Chamber
- Kiln-Dried (by special means)
- Vacuum Pressure Treatment
- Microscope Analysis
- Consultancy



# WOODSAFE RESEARCH & DEVELOPMENT

We offer – Single Burning Item EN13823

The Single Burning Item (SBI) test, defined by the standard EN 13823, is a fire test method specifically designed to assess the reaction to fire of building materials, including wood products.

## Purpose of the Single Burning Item Test

The purpose of the SBI test is to evaluate the performance of materials when exposed to a single flame source. It simulates a realistic scenario where a small fire might occur, providing insights into how quickly a material can ignite, the speed at which flames spread, and the heat released during combustion.

## Test Setup

### Sample Configuration

A representative sample of the material to be tested (such as wood) is mounted vertically.

### Heat Source

The test utilizes a controlled flame applied to the base of the sample to initiate combustion.



## Measurement Parameters

During the test, various parameters are measured, including:

- **Heat Release Rate:** The amount of heat produced by the burning material over time, which is crucial for understanding the fire's intensity.
- **Smoke Production:** The quantity and density of smoke generated during burning, providing insights into visibility and toxicity.
- **Flame Spread:** How quickly flames spread over the surface of the material.
- **Burning Duration:** The time the material continues to burn after ignition.

## Importance of the Test

### 1. Safety Assessment:

The SBI test is critical for assessing the fire safety of building materials, helping to prevent fire-related hazards in buildings using wood and other flammable materials.

### 2. Regulatory Compliance:

Many regions have building codes and regulations that require materials to undergo standardized fire testing, like the SBI test, to ensure they meet safety standards.

### 3. Material Selection:

Manufacturers and architects can use the results of the SBI test to make informed choices about material selection



for various applications based on their fire performance characteristics.

## Conclusion

The Single Burning Item test provides valuable data on the fire performance of wood and wood-based products, helping to ensure safer building practices and compliance with fire safety regulations. It is an essential part of fire testing protocols for materials used in construction.

*“If you’re keen on doing some fire testing in our fire lab, check out our website at [wrd.woodsafes.com](http://wrd.woodsafes.com)! You can also drop us an email at [hello@wrd.woodsafes.com](mailto:hello@wrd.woodsafes.com), or hit up Dr. Lazaros Tsantaridis directly on his cell at +46 10 206 72 38.”*

*We look forward to hearing from you!”*





Credits for all pictures of Icefjord Centre to: Adam Mørk

# WOODSAFE® PRO™

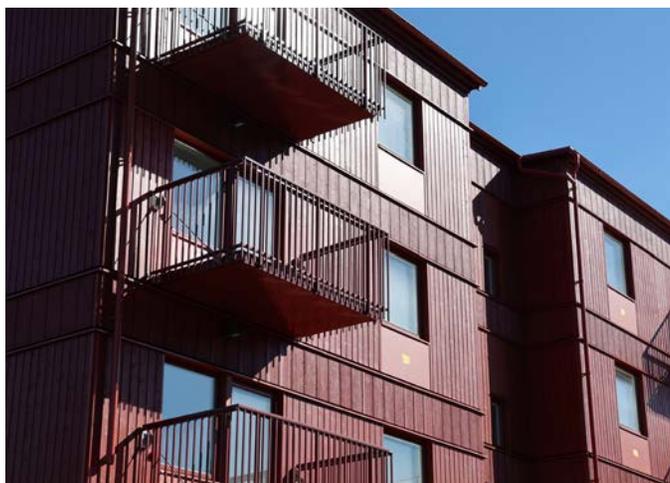
WOODSAFE® PRO™ is a high-performance fire retardant formulation for both interior and exterior use, designed to withstand high temperatures and rooted in the proprietary Woodsafe Timber Protection technology.

WOODSAFE® PRO™ 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 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 WOODSAFE® PRO™ products to determine if they are acceptable for the intended end use.

WOODSAFE® PRO™ 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.

## INDEPENDENT TESTING

Performed in accordance with industry standards has shown WOODSAFE® PRO™ products exhibit fire retardant performance properties without significantly compromising other critical engineering properties such as strength, durability, corrosivity, and hygroscopicity. WOODSAFE® PRO™ is a WPA Approved Product under their Flame Retardant Quality Scheme.



## STANDARDS AND SPECIFICATION INFORMATION

WOODSAFE® PRO™ fire retardant treated wood products have been tested to 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 reaction to fire are:

A1	A2	B	C	D	E	F
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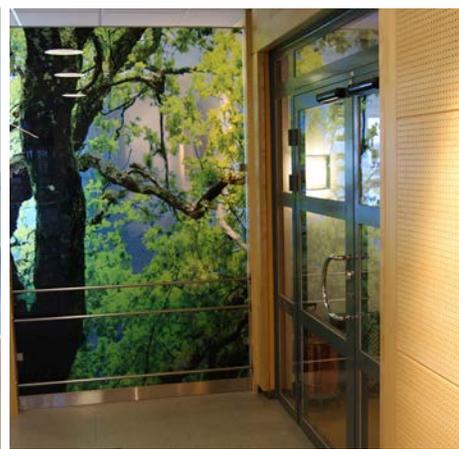
Woodsafe Timber Protection currently holds approvals for many of the most commonly specified species.

Below is a list of just some of the approvals held:

- Spruce
- Pine
- Oak
- Maple
- Siberian Larch
- Poplar
- Birch
- Heat modified pine
- Cedar
- Plywood e.g. birch, spruce

## PRODUCTION AND CERTIFICATION

Woodsafe Timber Protection is subject to third party continuous monitoring by a notified body (RISE 1002) and since 2009 is CE marked according to the European Construction Products Regulation CPR 305/2011 (CPD 89/106). Woodsafe Timber Protection also holds national type-approval certificates according to building codes for, among other things, façade construction SP-Fire 105 and durability of fire performance, EN16755 EXT, for all types of wood. For exterior application, WOODSAFE® PRO™ the timber cladding shall be coated with a film-forming paint system according to the instruction sheet.





Wood Protection Association

**2024**  
AWARD  
WINNER

# Product or Services Innovation

Presented to

**Woodsafe Timber  
Protection AB**

**Testing & Development Facility**



Wood Protection Association

**WOOD:** designed by nature,  
protected by innovation.

**The Wood Protection Association**  
Office 5, The Walled Garden,  
The Nostell Estate, Wakefield WF4 1AB  
[www.thewpa.org.uk](http://www.thewpa.org.uk)

Awarded by:

Neil Ryan  
WPA Director

AND THE WINNER IS...



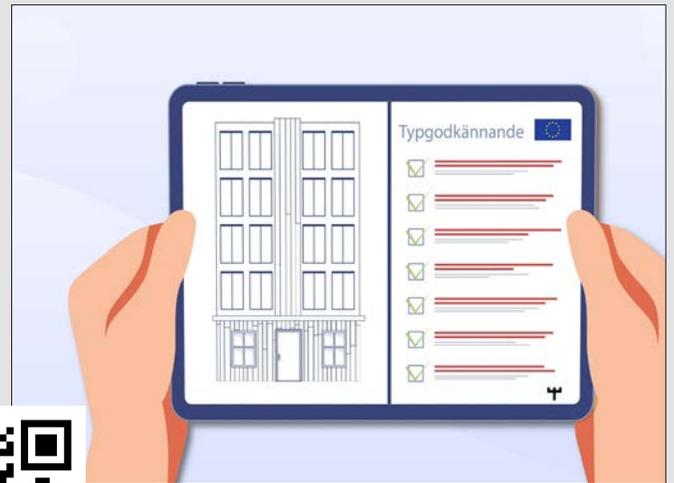
**PRODUCT OR SERVICES INNOVATION**

"For your new Flame retardant testing  
and development laboratory"

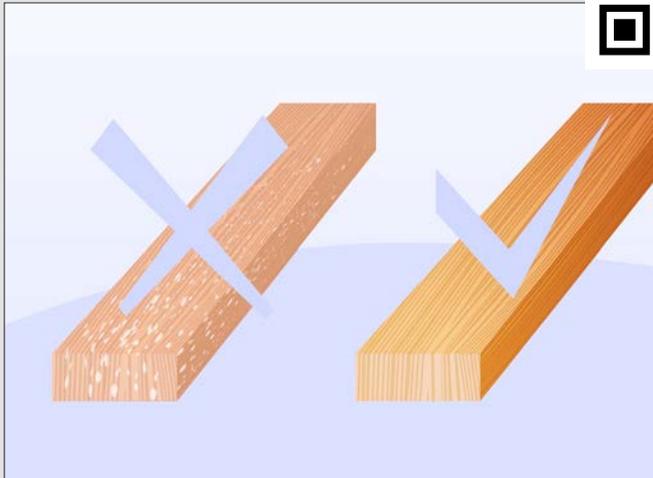
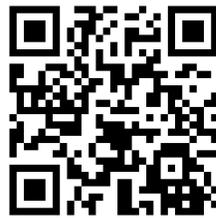




**WOODSAFE® ACADEMY**



**TYPE APPROVAL CERTIFICATE**



**DIFFERENT TYPES OF FIRE RETARDANTS**



**LET'S TALK ABOUT PROCUREMENT**

### **WOODSAFE® ACADEMY**

Watch the **WOODSAFE® ACADEMY** film that presents what the **ACADEMY** is about and what it can help you with.

### **LET'S TALK ABOUT TYPE APPROVAL CERTIFICATE**

Fire retardant treated wood is subject to regulation and quality control. Individual documents are often presented as proof of the product's properties. But how can you be sure that the requirements are met?

**WOODSAFE® ACADEMY** explains.

### **LET'S TALK FIRE RETARDANT POLYMERIC CHARACTERISTICS**

Fire retardant treated wood can fulfill the same fire class but have completely different properties in different environments. It can be disastrous to choose the wrong properties. But don't worry, **WOODSAFE® ACADEMY** explains.

### **ARE YOU IN CONTROL OF YOUR PROCUREMENT?**

Fire rating is one thing, but fire retardant treated wood is about much more than fire rating. Is the product quality assured? Is the product suitable for exterior use? What does the overall picture look like, is the product really equivalent? Does it sound complicated? Don't worry, **WOODSAFE® ACADEMY** helps you make the right decisions!



# Are You Looking for High-Quality Fire Retardant Treated Wood?

“Fire-retardant treated wood may seem similar across the board, but that couldn’t be further from the truth. Even when the fire rating is the same, significant differences exist between various brands.”



If you’re in the market for fire-retardant treated wood (FRTW) that is reliable and thoroughly documented, you’re in luck! There’s a growing trend among builders and architects to use FRTW not just for exteriors but also for interior applications like wall and ceiling cladding. This product aligns well with sustainable building practices.

FRTW is a great option because it meets building code requirements and is cost effective for both new constructions and renovations. The process to produce FRTW is similar to treating wood with preservatives, but instead, fire retardants are used to enhance fire safety. Various types of dry wood and plywood are treated with a chemical solution under pressure using an autoclave.

While builders don’t typically buy FRTW

directly, contractors often choose it based on specifications from architects and engineers. Although FRTW isn’t as common as wood treated with preservatives for DIY projects, it’s frequently used in places like apartment buildings, commercial

spaces, and recreation centers. Many prefer FRTW because it’s easier to work with and less expensive than non-combustible materials like steel or concrete, making it a popular choice for schools, theaters, offices, and restaurants.

You might be surprised to learn how widely FRTW is actually used!

Because FRTW isn’t a DIY product, most retailers don’t stock it regularly. This means that stores that do carry it have fewer competitors and can enjoy healthy profits, especially in areas with active commercial development. By offering FRTW and informing local businesses about its availability, retailers can attract new customers and keep existing ones from looking elsewhere.

Different brands of FRTW have unique properties, so it’s essential for retailers to understand these differences and comply with building code requirements. Before choosing a brand to stock, retailers should ask themselves:

- Is this brand well-established and proven?
- Does the processing company offer dependable service?

The most important step for retailers is to make sure contractors know they carry FRTW. It might seem obvious, but many customers are unaware of all the products a retailer offers. Retailers should also

choose suppliers that provide training and support about FRTW.

Next, it’s important to check the specifications. Most of the time, FRTW is selected based on building codes. Retailers should note which brand is specified and be cautious about using the phrase “or equivalent,” as not all brands can be interchanged without potential issues. Before changing brands, they should ask these questions:

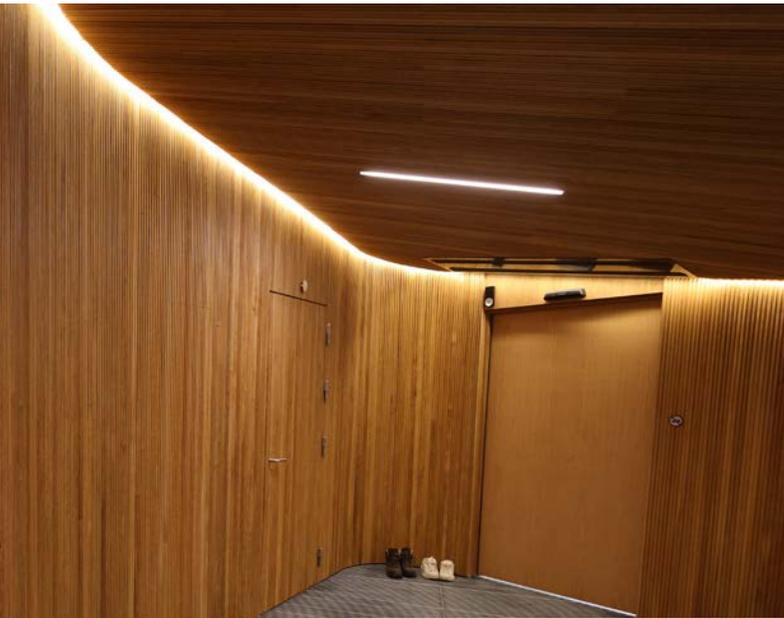
- Does this product have the same warranty?
- Are the corrosion characteristics the same?
- Does it have the same approval code?
- Are the strength properties the same?

Each brand has specific design value adjustments published for use, and these are not the same for all brands. If a contractor or retailer isn’t willing to recalculate the building design, substitutions should be avoided!

In summary, fire-retardant treated wood is a smart choice for contractors looking for fire-safe options in their projects.

# Versatility of Interior Applications





Woodsafe Timber Protection AB fire retardant treatment service gives you the freedom to choose between several different types of wood where each type of wood has its own unique properties that creates an unique feeling and character in the room.

Through WOODSAFE® PRO™ unique properties, the wood retains its appearance and technical properties that can then be used in a variety of contexts for, among other things, acoustic properties, decoration, wear-resistant surface layers in spaces such as corridors, sports halls, schools and more.

#### Examples of excellent installations:

- Sports and sports facilities
- Office environments
- Health care facilities
- Corridors
- Hotel and conference
- Assembly halls
- Auditorium
- Shopping centers

Frontwood<sup>®</sup> is a solid wood board with three layers of spruce and a wide range of interior and exterior applications.

The board looks natural, clean and stylish and can be finished upon request.



# FRONTWOOD®

a brand from Södra

Frontwood is a solid wood board with three layers of spruce and a wide range of interior and exterior applications. The board looks natural, clean and stylish and can be finished upon request.

A finish is not always necessary. Unfinished wood feels natural and fresh, and creates a beautiful impression. Remember that wood is a living natural material with variations in both colour and characteristics. Light-coloured wood indoors, like our Frontwood in spruce, will yellow over time, while unfinished wood outdoors weathers to silvery grey. Exposure to air pollution and UV radiation will weather unfinished surfaces. To protect the wood, we offer a range of finishes with different characteristics.

#### **Weathering protection**

Edges that are exposed to the elements must also be protected in a constructive way and sealed with a suitable varnish to prevent moisture absorption. The coating must be applied before the first exposure to rain. Coating applied to a moist panel will cause condensation under the protective surface.

#### **Oil finish**

An oil finish won't discolour with time and makes cleaning easier. Before finishing, make sure the wood is clean. Then apply an oil with a high oil content containing ingredients to protect against mould and fungus. We recommend using an oil containing pigments. Apply the oil before and after installation, and as needed (visual inspection).

#### **Staining and coating**

Stained or coated wood requires less frequent maintenance than oiled wood. We offer Signati, a unique water-based stain

that combines deep penetration capacity with a weather-resistant mineral-reinforced surface layer. This reinforcement creates a quick drying coating with improved colour, hardness and durability, and is dirt-repellent. Coating can be offered upon request.

#### **Heat treatment**

Heat-treated wood is produced using completely natural methods – heat and steam – to increase resistance to demanding weather conditions. It is a beautiful, durable, dimensionally stable and 100% natural product for today's modern wood architecture. Can be used both indoors and outdoors. Due to the varying properties of the wood, we can never guarantee panels free from cracks and knot holes, but to avoid this wherever possible, we recommend careful handling and pre-drilling in end grains.

#### **Acclimatisation**

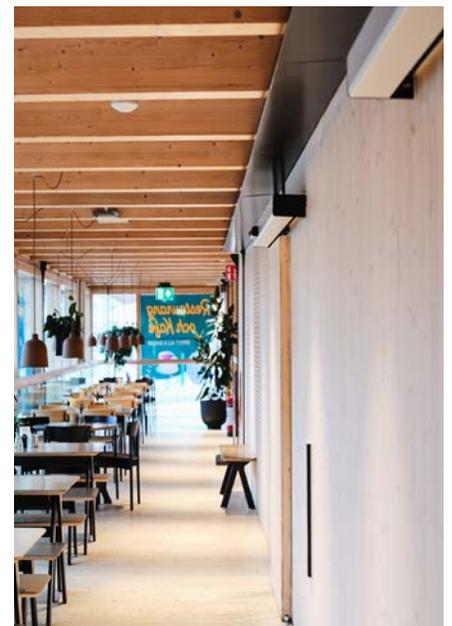
Since wood is a natural material, it can shrink and swell. To minimise any dimensional changes after installation, we recommend storing the wood where it will eventually be installed until it's time for installation. If stored outdoors, cover the wood with a tarpaulin to protect it from the weather. During wet weather, rainwater must run off directly and completely. Consistently high moisture will cause the wood to swell uncontrollably. Think carefully and when calculating, account for any changes in the width and length of the wood due to moisture levels.

#### **Handling**

Wood is generally an appreciated material because it is natural and relatively lightweight. However, we always recommend treating wood with care in order to avoid cracking and knot holes. This applies particularly to wood that has been heat-treated.

#### **Flame-retardant treatment**

Frontwood can be treated with a flame-retardant, which creates opportunities for creativity because it allows us to solve construction challenges where the fire risk posed by unfinished wood would otherwise be a hinder, for both exterior and interior cladding.





### Acclimatisation

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### Handling

Wood is generally an appreciated material because it is natural and relatively lightweight. However, we always recommend treating wood with care in order to avoid cracking and knot holes. This applies particularly to wood that has been heat-treated.

### Screws/nails

Use only stainless steel nails and screws when installing an unfinished or stained façade, minimum A2 grade (or A4 marine grade), to avoid rust stains. For the best results, we recommend using a thin nail and pre-drilling if you are planning to screw the material together or if you are close to the end grain. Expect wood movement due to moisture content and

avoid nailing through several overlapping layers. Fastenings such as screws and nails should be in line with the surface of the wood.

**Clips** To retain a visually clean surface, Frontwood can be installed with clips. Södra offers a standard measurement of 22 x 913 x 2,990mm for this installation. A measurement adapted to a standard stud wall.

### Combined materials

Be aware that porous materials (such as

rendering or concrete) can be stained by the wood's tannins when it rains. Staining is greatest in the beginning and any stains on other material can usually be washed away, since the tannins are water-soluble. If the ventilation behind the wooden panelling is poor, or if the panelling is exposed to a lot of moisture, the risk of staining is higher. An encapsulating finish can reduce staining. Ask your paint supplier about the best type of finish if you cannot divert the rainwater away from sensitive surfaces.





# FRONTWOOD®

## Advantages

- Stable and resistant
- Durable and relatively lightweight
- Workable and durable material
- Natural and environmentally sustainable building material
- Natural surface, biologically sound
- Minimal cracking
- Does not require a finish
- Various wood finishes and edge treatments are available
- Multiple applications

## Fire performance with WOODSAFE® WFX

- SP-Fire 105
- B-s1,d0
- EN16755 EXT

## Technical data

Type of wood: Spruce  
Board size: 5000/2990/2500 x 1025/2050  
Board thickness: 12, 22, 27, 40mm  
Grade: Standard B/C  
Meets all visual and technical standards

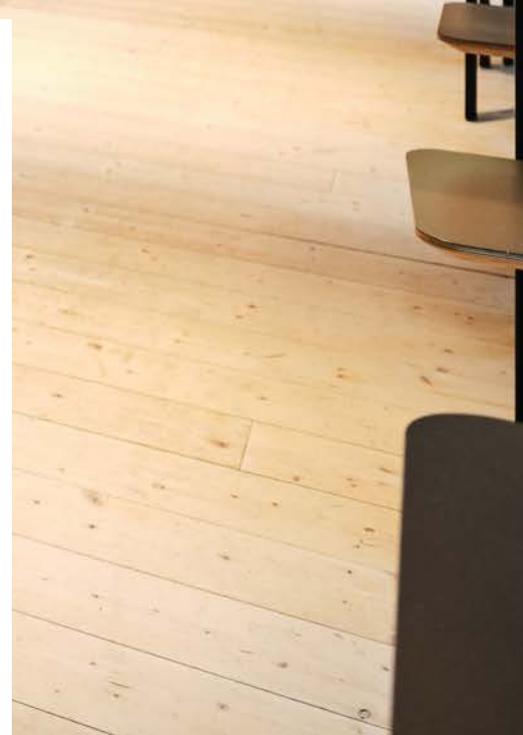
## Wood maintenance

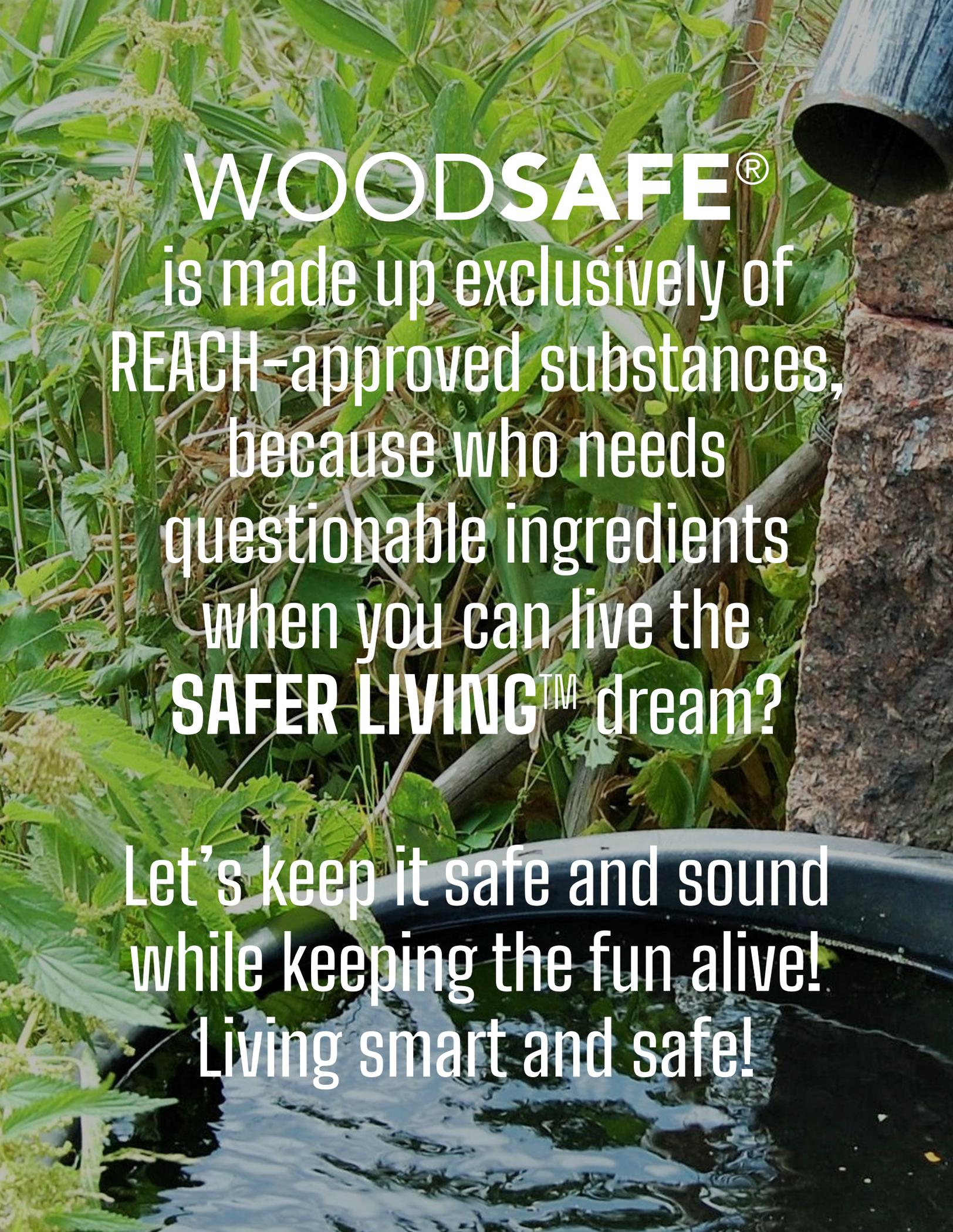
### Cleaning

Dirt is the most common cause of wood discolouration. This can be prevented by cleaning the wood regularly with a phosphate-free detergent. Discolouration may occur due to wood bleed, usually after exposure to moisture. If the stains are small, they will gradually disappear when the source of the moisture is eliminated. If the stains are in an area that is not exposed to the sun, they can deepen over time and will need to be washed with a mild oxalic acid or wood cleaner. Any stains from nails and screws that are not stainless steel can be removed with wood cleaner, or by gentle sanding or brushing.

### Mildew

Mildew is common in moist environments and/or where there is a lot of vegetation nearby. The side of a building that is most in shadow is usually affected. If mildew appears, use a wood cleaner containing fungicides as soon as possible to prevent it from spreading. The resulting wear may change the appearance of the wood slightly. Apply a finish to the wood again after cleaning.





**WOODSAFE<sup>®</sup>**  
is made up exclusively of  
REACH-approved substances,  
because who needs  
questionable ingredients  
when you can live the  
**SAFER LIVING<sup>™</sup>** dream?

Let's keep it safe and sound  
while keeping the fun alive!  
Living smart and safe!

# Let's talk about **WOODSAFE®** products and the use of fire retardant treated wood in relation to the REACH framework. REACH is a regulation based on the principles of safety for both the environment and human health, unlike many environmental assessment systems that are often driven by profit motives.

REACH, which stands for Registration, Evaluation, Authorisation, and Restriction of Chemicals, is a European Union regulation designed to enhance the protection of human health and the environment from chemical risks while simultaneously boosting the competitiveness of the EU chemicals industry. This regulation encourages the use of alternative methods for assessing the hazards of substances, aiming to minimize animal testing.

Applicable to all chemical substances, REACH affects not only industrial chemicals but also those present in everyday products such as cleaning agents, paints, clothing, furniture, and electronics. As a result, the regulation has a broad impact on various companies throughout the EU.

Under REACH, businesses bear the responsibility to prove the safety of the substances they manufacture and market within the EU. They must identify and manage associated risks and demonstrate to the European Chemicals Agency (ECHA) that their substances can be used safely. Additionally, they are required to communicate any necessary risk management measures to consumers.

If a substance's risks cannot be effectively managed, regulatory authorities have the authority to impose restrictions on its use. The ultimate goal is to replace the most hazardous substances with safer alternatives over time.

One critical component of REACH is the identification of Substances of Very High Concern (SVHCs). These are substances that may pose serious and often irreversible health and environmental risks. If designated as an SVHC, the substance may be added to a Candidate List for potential inclusion in the Authorisation List.

It's important to note that the identification of a substance as having undesirable properties does not inherently indicate an immediate large-scale threat. Evaluating factors such as the intended use and potential exposure routes—like skin contact, inhalation, or ingestion—is essential. While it is vital to avoid the risks linked to harmful substances, understanding their specific applications and purposes is equally crucial.

REACH was officially enacted on June 1, 2007, marking a significant step forward in chemical safety and environmental protection within the EU.

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**WOODSAFE® - Does not contain brominated substances. Let us explain more**

Brominated flame retardants, such as Hexabromocyclododecane (HBCD), are a group of chemicals that have been widely used to reduce the flammability of various materials, particularly in construction, textiles, and electronics. HBCD is specifically a type of brominated flame retardant that has been commonly used in insulation materials, particularly polystyrene foam.

However, several concerns have led to HBCD being banned or restricted in many regions, including the European Union. Here are some key points about HBCD and why it's forbidden:

### **Environmental Persistence**

HBCD is resistant to degradation and can persist in the environment for long periods. This quality raises concerns about long-term ecological impacts, as they can accumulate in the food chain.

### **Bioaccumulation**

These substances have the potential to bioaccumulate in the tissues of living organisms, leading to higher concentrations as they move up the food chain. This raises significant concerns regarding wildlife and human health.

### **Toxicity**

Studies have shown that HBCD can be toxic to aquatic life and may pose risks to human health, including endocrine disruption and reproductive toxicity.

### **Regulatory Actions**

Due to these serious environmental and health concerns, HBCD was listed as a substance of very high concern (SVHC) under the REACH regulation in the EU and added to the Stockholm Convention on Persistent Organic Pollutants, leading to a ban on its use in many products.

### **Alternatives**

Many manufacturers are now seeking alternative flame retardants that are safer and have a lower environmental impact. Regulations encourage the development and use of such alternatives that do not pose similar risks.

In summary, brominated flame retardants like HBCD are forbidden due to their persistence in the environment, potential to bioaccumulate, and associated toxicological effects, prompting regulatory actions aimed at protecting both human health and the environment.



# Sustainable Wood Technology Since 1933

*For 90 years, we have been supplying timber products to the construction trade and home builders. Always with the same great commitment and a focus on the customer.*

***Welcome to Perssons Träteknik***



Josef Persson was no coward. When he purchased a farm in Bergstena with an accompanying sawmill in 1933, he dared to believe in a future for wood as a building material and an increasing demand for high-quality timber products. He was right to do so. Now, we are the third generation of Perssons following in his footsteps, driven by the same foundational belief as Josef. We invest!

To deliver innovative solutions that sim-

plify our customers' work, we have chosen to stay at the forefront of development and invest in the latest technology. Now, we want to continue evolving in close collaboration with our customers because we also believe that the future will be built with wood.

**As both safety and environmental requirements become stricter in the construction industry, there's a strong push for our absolute favorite material - Wood!**

By increasingly choosing wood as a building material, project teams can reduce the total carbon emissions of their projects. With our wide range of fire-treated facade cladding, your building project will not only meet the industry's stringent fire safety standards but also maintain quality and aesthetics!

At Perssons, we offer a diverse assortment of fire-treated facade cladding. Through close collaboration with Wood-

safe Timber Protection, we develop premium products that meet the fire safety requirements set by the industry. Our range includes fire-treated panels in various profiles for different applications, and we can deliver both planed and sawn materials in precisely cut lengths, tailored to your needs and preferences!

By integrating fire protection into the wood's cell structure rather than merely coating the surface, the wood retains its natural appearance. Additionally, the surface can be painted, stained, or oiled without compromising the fire protection properties of the product. This solution is also suitable for larger wooden facades where architects seek a pure wood finish or where maintenance options are limited. Practical experience has shown that the surface ages more evenly and beautifully compared to completely untreated panels.





# Persson's wood paneling is crafted with meticulous care and is of the highest quality.

In Sweden, the National Board of Housing, Building and Planning (Boverket) sets the building regulations and safety requirements for the construction industry. Whether it is permissible to use wood for a building's exterior walls or facade cladding depends on several factors: the number of floors in the building, whether the building has undergone a specific fire test, and whether it is equipped with a sprinkler system. Different fire classes are required for different materials, with untreated wood typically achieving fire class D. After our products have undergone the fire treatment process at Woodsafe, they reach fire class B, which is well accepted for the majority of wooden buildings being constructed today.

For smaller villas and buildings with one to two stories, referred to as Br2 and Br3, a lower fire requirement of D-s2,d is generally needed. This is usually achieved by painting the facade with standard facade paint. For buildings with three or more stories (Br1), there is a requirement for approved SP Fire 105 testing for the facade system to minimize the risk of fire

spread. We meet this requirement with verification through type approval for all our fire-treated products.

## Safety at Every Level

At Perssons, we have long maintained a close collaboration with Woodsafe Timber Protection, who fire-treats, tests, and documents our products. The end product becomes type-approved according to SP Fire 105 and is CE-certified through the independent government research institute RISE. With our fire-classified products, you can feel assured that the correct documentation is in place and that the final product meets all requirements.



"It's safety we're talking about. It's extremely important to have control over the entire chain and to keep the documentation in order. Both Perssons and we place a great emphasis on this," says Peter Johnson, Product Manager at Woodsafe Timber Protection.

## Constant Development in the Industry

Development is always progressing, and the requirements for fire classes are continuously increasing. Through ongoing fire tests, we ensure that Perssons' products consistently meet fire protection standards. "Today, it takes a lot more to achieve the applicable fire class compared to 10-20 years ago. This means we constantly need to develop our products to stay ahead of the game. If Perssons starts using a new color or technique in their part of the chain, it also needs to be fire-tested in combination with our fire treatment. We have just inaugurated our newly built fire lab, where we can conduct even more specific fire tests. That way, everything is black and white. Will it perform well or not? Trying to set fire to Perssons' panels is definitely an extra fun part of the job!" laughs Peter Johnson.



# THE IMPORTANCE OF UNDERSTANDING FIRE-RETARDANT TREATED WOOD CLADDING HAS BECOME INCREASINGLY SIGNIFICANT.

The Sundsvall fire on June 25, 1888, is the largest city fire in Sweden ever.  
An entire city was reduced to ashes. Five people died and 9,000 were left homeless.

The Sundsvall fire of 1888 is the largest fire in Swedish history, and the third city fire in the history of Sundsvall. What caused the fire is not entirely certain, but most information suggests that a spark from the Selånger steam engine was the cause. The weather on 25 June 1888 was hot, dry and windy, so there were all the conditions for a rapid progression of the fire.

The ship travelled along Selångersån up towards the former town centre in Åkroken. A spark from the ship blew from the ship onto land and the strong wind combined with dry grass and wooden buildings had devastating consequences. The first building to catch fire was a pier house opposite the current sports hall. The city was in ruins within 9 hours and 9 000 people were left homeless. Five people died. The damage to property from the fire was valued at almost €30 million.



To prevent further devastating city fires, the city council decided on 15 January 1889 to allow only stone houses in the centre of Sundsvall, resulting in the Stone City.

The fire in Sundsvall set the building rules in Sweden for more than 100 years, but in connection with the revision of the Swedish National Board of Housing, Building and Planning's building rules at the end of the 1990s, the doors were opened for wooden facades with approved SP-Fire 105 performance.



**Unfortunately, we only have 34 years in the industry.**

Some might deem it a substantial expertise within the same field. Had we been around some 150 years ago, perhaps the Sundsvall fire of 1888 could have been averted. But reality paints a different picture. Nevertheless, we can now safeguard all future projects constructed with fire retardant wood, and that's a source of pride for us.

Give us a call if you want to talk durable fire protection.

Tel: +46 10-2067230

**WOODSAFE®**  
Durable Fire Protection

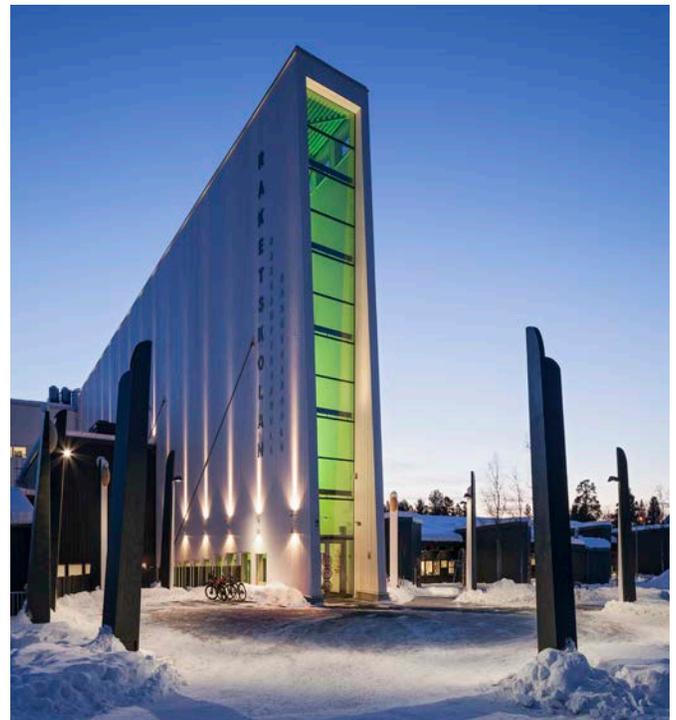
In order to prevent a fire from spreading in an external wall or along the façade and quickly affecting the safety of several floors in a building, external walls are required to fulfil specific fire safety requirements. Factors that affect and need to be protected against include a fully developed fire inside the building that breaks out with large flames through a window. External fires such as a direct fire in the façade, grass fires or fires in objects close to the façade or on balconies and the like should also be considered.

**Current fire requirements in Br 1 buildings.**

The requirements set and whether it is possible to have wood and other combustible materials in the outer wall or as facade cladding depends, among other things, on how many floors a building has, whether the building is equipped with a sprinkler system and whether the current facade structure has undergone special fire testing.

**Buildings in class Br1**

Br1 buildings are buildings with high protection needs. The building class covers the vast majority of buildings with between 3 and 16 storeys. In addition, some lower buildings with special risks may belong to building class Br1. The requirements for fire spread via the façade are therefore significantly higher than in classes Br2 and Br3.



# Large-scale façade fire testing

Wood cannot be classified as non-combustible, so it must be evaluated using SP-Fire 105, a Swedish test method for assessing the fire performance of exterior wall constructions, particularly focusing on the cladding. The test setup measures 4 meters in width and 6 meters in height, and the facade system tested must simulate real-world application. If the facade is tested with non-combustible insulation, it cannot be approved with combustible insulation as a substitute, and so forth. Every species of wood used must undergo testing, as must any significantly different installation conditions from the same species.

**During testing, various parameters are carefully evaluated, and visual assessments are conducted meticulously:**

- Fire spread along the façade surface
- Fire spread within the structure
- Temperature at the eaves
- Heat radiation emitted from the façade
- Falling debris

**Structures affecting fire behavior include:**

- Types of insulation materials
- Presence and size of air gaps
- Vertical versus horizontal mounting
- Varied dimensions of the wood, which can increase combustible surface areas
- Wood dimensions that can create a tunnel effect
- Surface treatments





# Through our **WOODSAFE®** partners, we offer exceptional fire protection solutions that are tailored to meet your specific needs

## **Wood species**

- Spruce
- Pine
- Cedar
- Cedar shingle
- Three-layer cladding board
- Thermowood / Thermal modified spruce
- Thermowood / Thermal modified pine

## **Mounting condition**

- Vertical
- Horizontal
- Decorative facade solution
- Ventilated facade
- Airgap
- Surface treatment

## **Insulation**

- Stone wool insulation
- Glass wool insulation
- phenolic resins insulation
- polyurethane insulation

## **Substrate**

- Non-combustible A1, A2 substrates
- CLT and wood substrate in accordance with euroclass D-s2,d0

## **Certifying documentation**

- Typeapproval TG0263-08
- Partners certificate
- Third-party monitored control by RISE
- Planning and Construction Act (SFS 2010:900)
- Swedish National Board of Housing, Building and Planning (BBR)
- Durability of Fire Performance EN16755 INT1, INT2 and EXT
- Certified quality system ISO 9001:2015
- Certified self-monitoring WQS 2.0

**WOOD  
SAFE®**

# WOODSAFE® WFX

WOODSAFE® WFX is a proven and remarkably versatile solution for exterior applications, boasting unique polymeric resins properties. It truly stands in a class of its own.

WOODSAFE® WFX™ provides a tried, tested and trusted fire protection for timber and has been used in prestigious projects around the world since the early 1960s and is the only external fire retardant treatment to be awarded WPA Approved status, which gives specifiers and merchants real assurance that they have selected a high-performance, durable and maintenance-free fire protection.

**APPROVED STATUS INVOLVES A RIGOROUS ASSESSMENT** of fire performance data by an independent panel of experts appointed by the WPA. The WPA panel considered all aspects of WOODSAFE® WFX™ fire performance before awarding it the coveted WPA Approved Product Certificate including, classification reports, durability, smoke generation, hygroscopicity, leach resistance and other key ancillary properties, such as corrosion, strength and biological resistance properties.

WOODSAFE® WFX™ 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 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 WOODSAFE® WFX™ products to determine if they are acceptable for the intended end use.

## UNIQUE FIRE RETARDANT WITH POLYMER PROPERTIES

- WOODSAFE® WFX™ fire retardant is an advanced polymer based formulation, free from halogenated compounds.
- **Proven stability.** The ingredients used in the WOODSAFE® WFX™ process are non-hygroscopic, so overcoming many of the disadvantages of conventional fire retardants. The processed materials can be used in situations where high and fluctuating relative humidities are a problem.
- **Excellent structural / mechanical properties.** Independent notified body tests have shown that there is no loss of strength in the modulus of rupture or the modulus of elasticity as a result of WOODSAFE® WFX™ treatment of timber.

WOODSAFE® WFX™ can be used exterior or severe damp situations without any surface treatment och protected area.

## STANDARDS AND SPECIFICATION INFORMATION

WOODSAFE® WFX™ fire retardant treated wood products have been tested to 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	F
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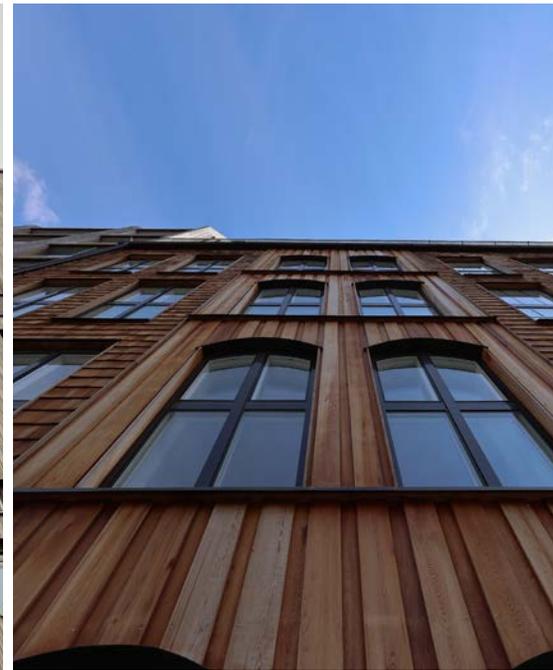
Woodsafe Timber Protection currently holds approvals for many of the most commonly specified species. Below is a list of just some of the approvals held.

- Cedar
- Cedar shingle
- Siberian Larch
- Spruce
- Pine
- Oak
- Accoya (Radiata Pine)
- Nobelwood (by Foreco)
- Thermally modified pine, spruce, ash (Thermowood)
- Thermally modified frake
- Thermally poplar
- Douglas Fir
- 3 layer solid wood panel

WOODSAFE® WFX™ also holds type approval certificates for several different SP-Fire 105 cladding systems, read more on page 28.



Godisfabriken  
Photo: Credits to Moelven.



### PRODUCTION AND CERTIFICATION

Woodsafe Timber Protection is subject to third party continuous monitoring by a notified body (RISE 0402) and since 2009 is CE marked according to the European Construction Products Regulation CPR 305/2011 (CPD 89/106).

Woodsafe Timber Protection also holds national type-approval certificates according to building codes for, among other things, façade construction SP-Fire 105 and durability of fire performance EN16755 EXT for all types of wood.

Manufacturing monitored and continuous quality system in accordance with:

- ISO 9001:2015
- WQS 2.0. Woodsafe Timber Protection AB internal quality system, included in third party quality control.



# Benchmark

APPROVED **TREATER**



Certificate no: FR-201901

# Possibilities for exterior applications

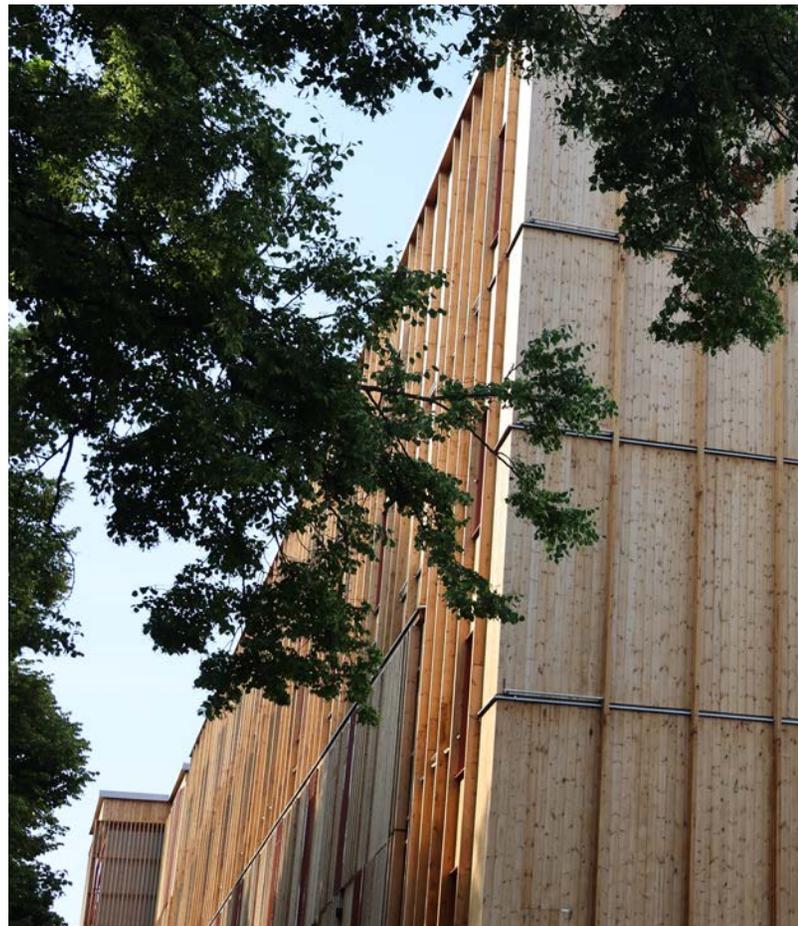


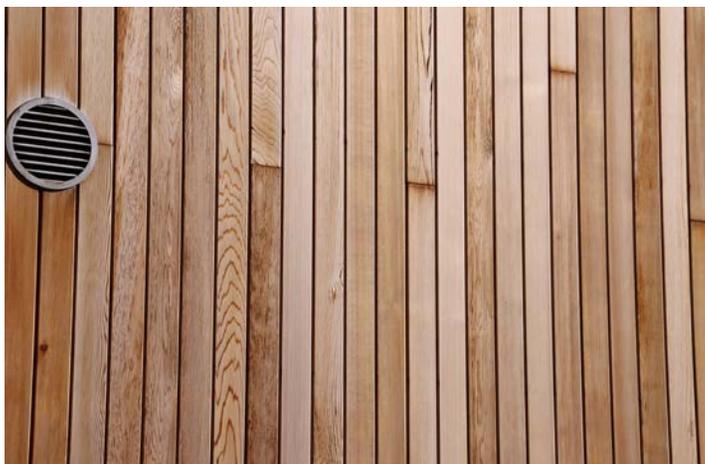
Woodsafe Timber Protection AB offers a fire retardant treatment service that allows you to choose from a variety of wood types, each with its own unique characteristics. This selection enables you to achieve a distinct look and feel for your project.

Through **WOODSAFE® WFX™** unique properties allow it to maintain its appearance throughout natural aging while preserving its technical qualities. This makes it versatile for various applications, including façade cladding, wooden roofs, decorative installations, and more.

#### Examples of excellent installations include:

- Facade cladding
- Wooden roofs
- Balconies
- Maritime interior design
- Lorry and train interiors
- Wooden protective packaging
- Underground installations
- Mining environments
- Humid interior applications
- Natural aging or coloration finishes

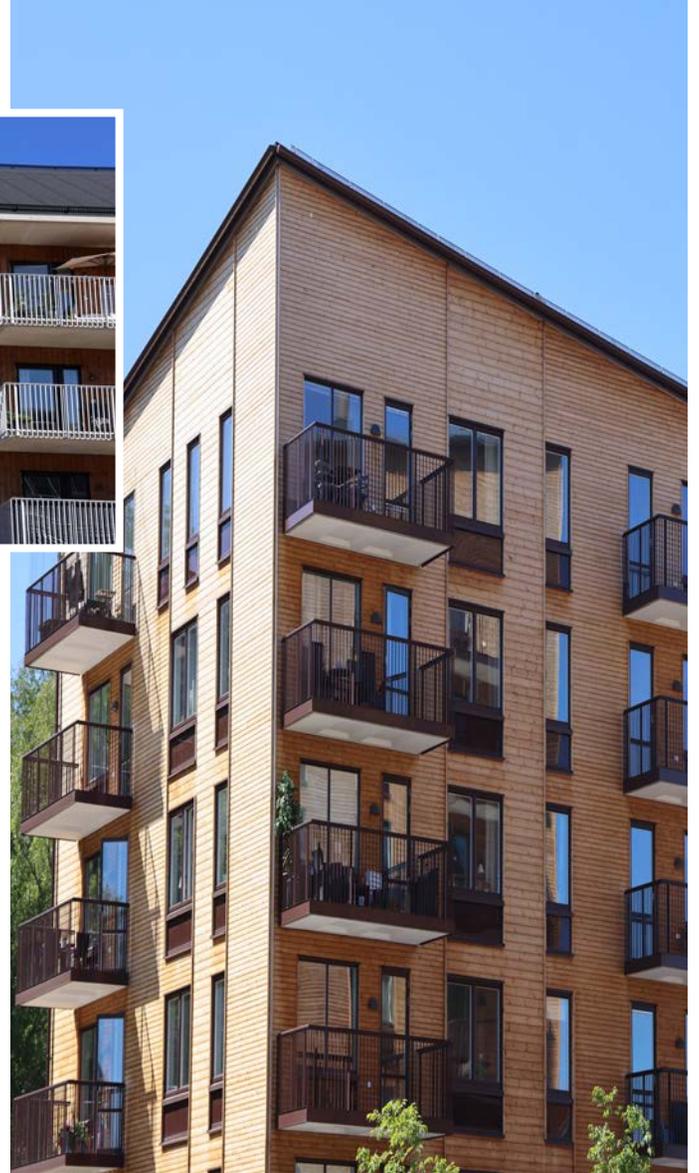




Let's talk about  
**WFX POLYMERIC**  
fire retardant



SCAN TO READ MORE



# WOODSAFE® WFX™

There is an increasing market demand to address the lifespan expectancy of flame-retardant treated wood cladding. Due to the absence of a harmonized standard for verifying lifespan expectancy in years, Woodsafe Timber Protection AB has undertaken a qualitative study to estimate the lifespan of WOODSAFE® WFX™.

It is widely recognized that flame retardants based on heat-cured polymeric systems outperform other solutions in maintaining fire-protective properties over time. However, the industry faces the challenge of lacking deterministic methods to quantitatively assess lifespan expectancy.

To address this, Woodsafe conducted a qualitative study estimating the lifespan of WOODSAFE® WFX™. The study utilized three main methods:

## Long-term Outdoor Weathering Experience

This method combines published international long-term studies, insights from commercial entities, and Woodsafe's own extensive field experience with Exterior WFX-treated wood.

## Accelerated Weathering Tests

Compliance and suitability for outdoor use are assessed through tests aligned with international standards like ASTM D2898 and EN16755.

## Literature Review

A comprehensive review of articles, web content, and commercial product information provides a state-of-the-art understanding of the lifespan of polymeric flame-retardant-treated wood.

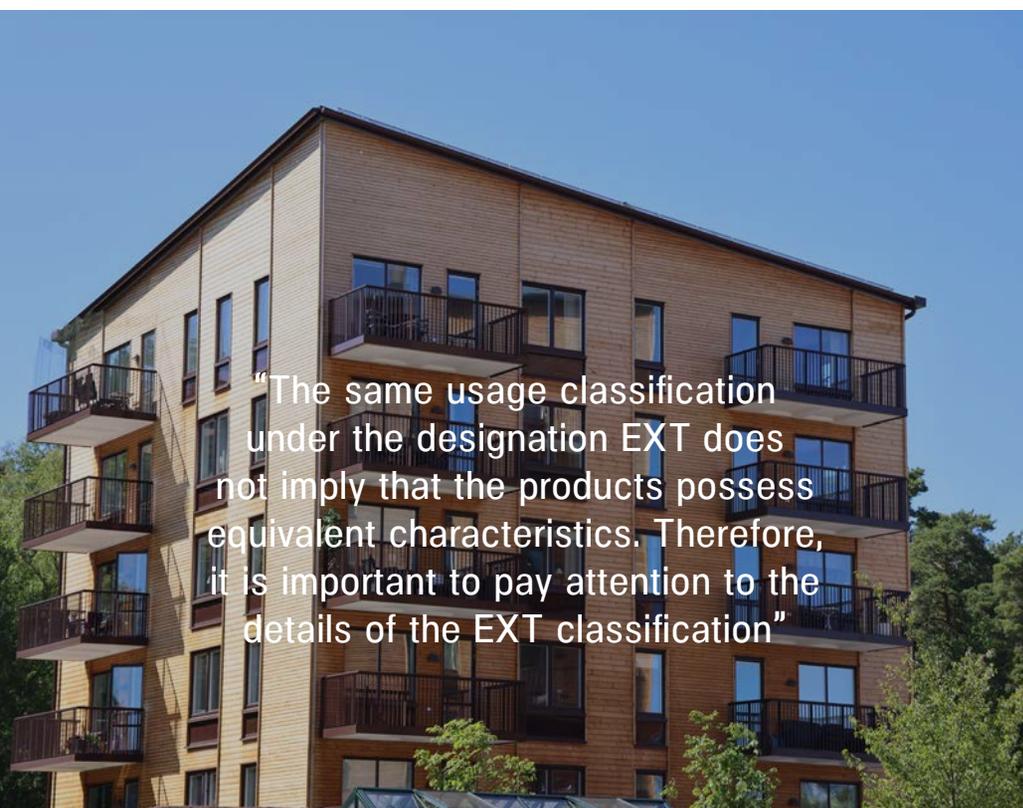
A notable study by the Forest Product Laboratory at the USDA Forest Service in the US included a 10-year outdoor weathering assessment of various fire retardant treatments, including the commercial polymeric treatment. Samples were exposed to the south at a 37.5° roof angle.

The results showed that samples treated with polymeric fire retardant had superior performance. After 10 years, they exhibited a flame spread of just 29 inches and were the only ones to self-extinguish in the Schlyter tunnel test. The study concluded that the polymeric treatment offered high leach resistance and outperformed alternative treatments. These findings have been integrated into global standards, including ASTM D2898 in the US and EN16755 in the EU.

## INFO BOX

Available test results, both in the public domain and from manufacturers, clearly shows the same pattern in the results: It is only wood that have been treated with the polymeric flame retardant as described above that are approved for exterior use in cladding, i.e. that survives the heavy test conditions in ASTM D2898 and EN16755.

# How much do you know about the difference between EXT $v/s$ EXT-LR



“The same usage classification under the designation EXT does not imply that the products possess equivalent characteristics. Therefore, it is important to pay attention to the details of the EXT classification”

There is a common misconception that fire-retardant treated wood with a service class for exterior use is automatically suitable for application. However, this is not the case. There are several factors and performance characteristics that play a crucial role in determining whether different products have equivalent properties.

#### Let us explain:

The service class according to EN16755 EXT is directly linked to the properties

of the fire retardant, which in testing is either surface-treated to protect against leaching or tested without protective surface treatment because the properties of the fire retardant are formulated for direct exposure to UV, moisture, and varying temperatures.

However, there is also a risk of misunderstanding, most likely based on a lack of knowledge regarding fire impregnation. It is possible that a fire retardant that fundamentally requires

a protective coating can pass the test without a film-forming paint if the absorption amount of the fire retardant is initially sufficient to still contain enough after accepted testing to meet the threshold values for Euroclass according to EN13823.

#### Let's take an example:

##### Product A:

High absorption of fire retardant, for example, 80 kg per cubic meter tested according to EN13823 after accelerated aging and within the parameters for Euroclass B.

##### Product B:

Low absorption of fire retardant, for example, 25 kg per cubic meter, tested according to EN13823 after accelerated aging and within the parameters for Euroclass B.

**In summary,** both products meet service class EXT and Euroclass B. The difference, however, is that Product A requires 300% more absorption of the fire retardant to meet the criteria due to the fact that Product A is leaching. It is worth mentioning that Product A continues to leach even after testing has been completed.

“If you want to be sure, this is the symbol you should look for, for the characteristics of the product”



Ammoniumbased FRTW without EN16755 EXT approval



Approved EN16755 EXT



WOODSAFE® EXTERIOR WFX

The same classification, like EN16755 EXT, does not always indicate equivalent properties. A simple formula, such as ammonium phosphate mixed with water, cannot compare to a complex formula that forms a polymer resin providing protection without a surface coating. However, both products can still have the same use class according to the standard. It is crucial to thoroughly understand the details and make an accurate assessment to determine if the product is suitable for the intended application.

**WOODSAFE® WFX™** - A complex polymer resin formula Contains a highly advanced composition of chain-reactive substances that deliver unmatched properties compared to simple ammonium-based fire retardant treatments.

#### **Simpler Fire Retardants**

When WFX is compared to simpler fire retardants, such as ammonium phosphate, they may share the same fire classification. However, they differ significantly in terms of durability and the absence of a need for surface treatment.

#### **WOODSAFE® WFX™ - Durability and Classification**

It meets strict durability standards (EN16755 EXT) without the need for surface treatments. Additionally, it has a unique classification of Leach Resistance (LR) by the Wood Protection Association, highlighting its superior formulation compared to other fire retardants.

#### **Why Durability Matters?**

Durability is vital because if a fire retardant doesn't meet durability standards, it may leach, especially if it contains hygroscopic materials like ammonium, commonly found in fertilizers. These substances can retain excessive moisture, potentially leading to wood decomposition and mold growth.

### *INFO BOX*

#### **WOODSAFE® WFX™**

- Typeapproved by RISE (1002) according to Durability of Fire Performance EN16755 INT1, INT2, EXT
- Classified as Leach Resistance by WPA, Wood Protection Association, UK.
- No requirement for surface treatment, certified for all types of wood.
- Reference TG0263-08

#### **WOODSAFE® PRO™**

- Typeapproved by RISE (1002) according to Durability of Fire Performance EN16755 INT1, INT2, EXT
- Surface treatment requirements
- Classified on spruce wood
- Reference TG0263-08



PHOTO: ADAM MØRK

# PRODUCT LAUNCH



NEWS

## WOODSAFE® PRO GREEN™

Advanced fire protection from the world's largest manufacturer, completely free of substances requiring labeling."

## FIRE-RETARDANT TREATED WOOD

### SAFE FOR YOU

WOODSAFE® WPG fire-protected wood is developed with three important priorities: free from hazardous content, free from harmful emissions, and free from specific restrictions for use and waste management.

WOODSAFE® WPG is a safe choice for you who specify, build, as well as for people and animals who live and spend their lives in sustainable wooden buildings.

### SAFE FOR NATURE

WOODSAFE® WPG fire-protected wood is designed to remain in the wood panel for long-lasting fire protection, whether for interior or exterior use. However, as with all products, there comes a time for renovation and renewal.

WOODSAFE® WPG is future-proofed according to today's guidelines and regulations for circular economy and combustion without the need for sorting as hazardous waste.

### CO2 SMART™

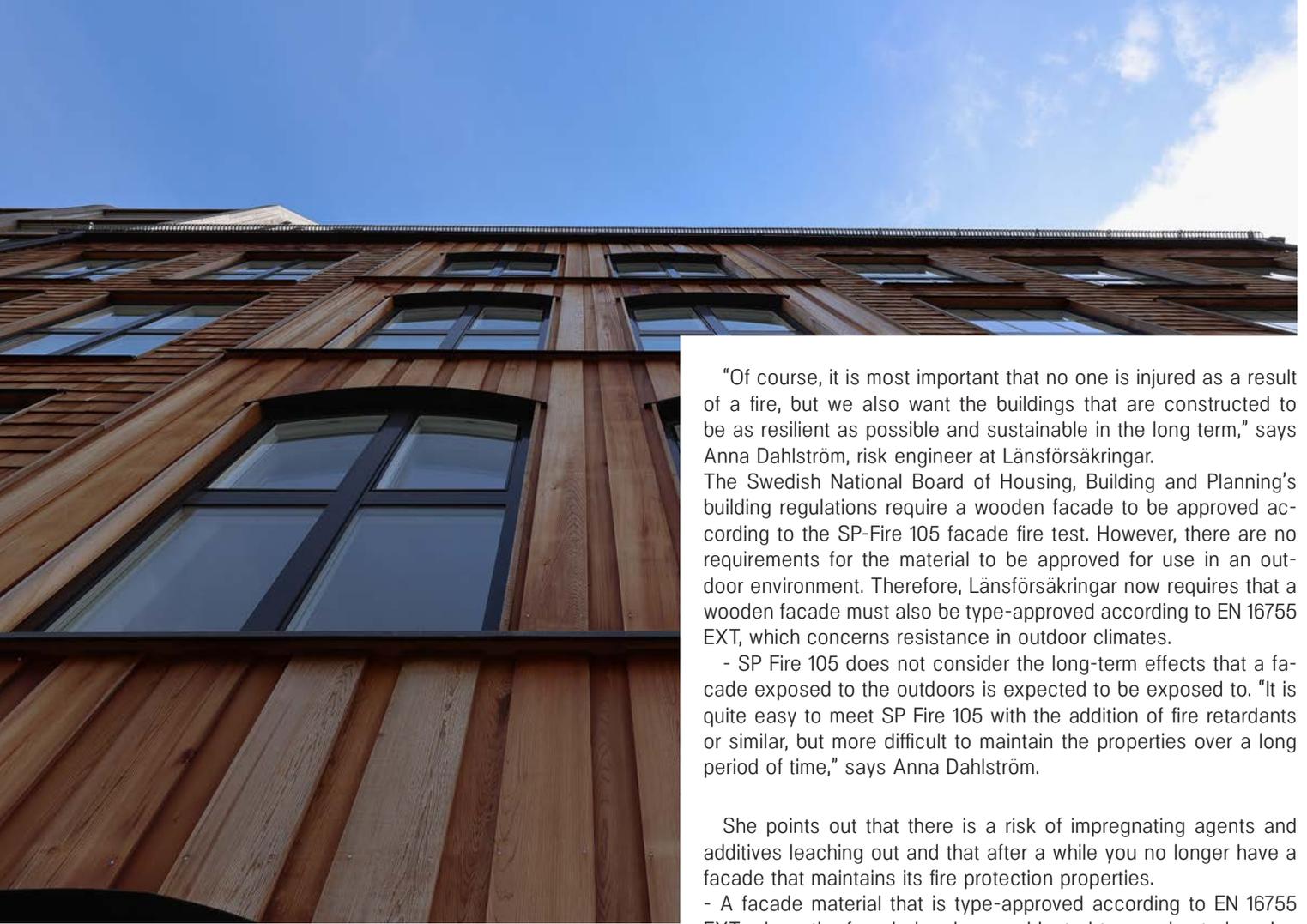
WOODSAFE® WPG fire-protected wood is manufactured with very low kg CO<sub>2</sub>-e./m<sup>3</sup>. Woodsafe Timber Protection's value chain reflects the company's values for a sustainable future for the next generation, where energy resources are 100% renewable, 100% solar energy from their own solar power installation, 100% electric trucks, low energy consumption and energy efficiency, HVO fuel, and recycling and sorting of all waste.

### DOCUMENTATION

Properties for health, environment, mold, strength, corrosion, and fire technical properties are reported in several environmental assessment systems and by the notified body (RISE) with possession of type approval certificate and CE marking.

### OUR EXPERTISE - YOUR PEACE OF MIND

"Our mission is actually simple: to create safe communities built with wooden planks that protect property, people, and animals in the event of a fire! This is where Woodsafe's expertise comes into play. In addition to offering tailored solutions through our partners, we at Woodsafe have another ace up our sleeve. We excel at expert support in fire technical matters. We are simply the best at what we do!"



# Insurance companies increase requirements for wooden buildings.

Source: <https://www.svenskbyggtidning.se/2023/06/07/nya-forsakringskrav-pa-brandskydd-i-trabyggnader/>

Länsförsäkringar has extended its requirements for fire protection of tall wooden buildings. Boverket's building regulations do not take into account how fire protection in a wooden facade is affected in the long term. For this reason, Länsförsäkringar now requires, among other things, that fire protection in wooden façades must have proven durability in an outdoor climate.

- MANY PEOPLE THINK that you get good fire protection for your building if you comply with the Swedish National Board of Housing, Building and Planning's building regulations, without realising that the authorities' requirements focus primarily on protecting people.

"Of course, it is most important that no one is injured as a result of a fire, but we also want the buildings that are constructed to be as resilient as possible and sustainable in the long term," says Anna Dahlström, risk engineer at Länsförsäkringar.

The Swedish National Board of Housing, Building and Planning's building regulations require a wooden facade to be approved according to the SP-Fire 105 facade fire test. However, there are no requirements for the material to be approved for use in an outdoor environment. Therefore, Länsförsäkringar now requires that a wooden facade must also be type-approved according to EN 16755 EXT, which concerns resistance in outdoor climates.

- SP Fire 105 does not consider the long-term effects that a facade exposed to the outdoors is expected to be exposed to. "It is quite easy to meet SP Fire 105 with the addition of fire retardants or similar, but more difficult to maintain the properties over a long period of time," says Anna Dahlström.

She points out that there is a risk of impregnating agents and additives leaching out and that after a while you no longer have a facade that maintains its fire protection properties.

- A facade material that is type-approved according to EN 16755 EXT, where the facade has been subjected to accelerated ageing in tests, provides better fire protection over time, which is extremely important as the building must function throughout its technical lifetime.

Björn Yndemark is a fire consultant at YHR Consulting. He says that although it is not stated in the building regulations, it is already common practice in the construction industry to require resistance-tested panels according to EN 16755 EXT on tall wooden buildings.

- But it is good that Länsförsäkringar clarifies what applies. Historically, when buildings have been designed, very little emphasis has been placed on the insurance companies' requirements. Now it will be clearer for developers that there will be requirements and they can avoid being caught out at a later stage if it turns out that something deviates from the insurance companies' view. At the same time, Björn notes that Länsförsäkringar's new requirements are not entirely consistent with other rules.

"There are differences with Länsförsäkringar in both the Swedish National Board of Housing, Building and Planning's current building regulations and the agency's proposal for revised building regulations - even Trygg Hansa's rules differ in some areas. There should be more synchronisation. If everyone has their own guidelines, it will be almost impossible for developers to know what is correct," says Björn Yndemark. He was part of a consultation group when the Swedish National Board of Housing, Building and Planning drew up proposals for revised building regulations.

## Increased requirements for wooden buildings

Among the differences, he mentions that Länsförsäkringar's rules apply if the building has more than three floors, while the Swedish National Board of Housing, Building and Planning focuses on buildings with more than three floors. There are also differences such as the fact that a combustible frame can be protected by cladding instead of sprinklers. The Swedish National Board of Housing, Building and Planning's new rules are proposed to allow this, while Länsförsäkringar has introduced certain restrictions on which technical replacements are approved - "But it's just over a year until the Swedish National Board of Housing, Building and Planning issues revised building rules, plus a transition period of one year.

When I asked the insurance companies about this, they said that they will look at the new rules when they come, and then they can relatively quickly change their rules to possibly synchronise with the Swedish National Board of Housing," says Björn Yndemark.



Photo: Credits to Moelven

Peter Johnson is product manager at Woodsafe Timber Protection AB, which manufactures fire-impregnated wood. He notes that many fire protection products are hygroscopic, which makes them sensitive to moisture. "If moisture gets into a wooden panel, the fire retardant can start to migrate and reduce its content.

- Our fire-impregnated products are type-approved in accordance with EN16755 EXT and we have long called for requirements for fire protection to be durable over time. Therefore, Länsförsäkringar's initiative is good because it helps developers and fire consultants to choose the right fire protection with the help of type approval," says Peter Johnson.

He points out that it is not enough to claim that a product is approved according to EN16755 EXT by showing a single test, as the standard requires several consecutive tests. It is also not enough to show a classification report for the UK which for a period of time had different lower test criteria compared to the rest of Europe.

- Unfortunately, this is an example that occurs and I believe that it is misleading and risks leading to construction errors with the installation of products that do not have acceptable resistant fire protection. Hopefully, Länsförsäkringar's new requirements for resistance in outdoor environments will also be introduced in the building regulations," says Peter Johnson.

Länsförsäkringar's new requirements were developed after the construction industry, the Swedish National Board of Housing, Building and Planning and the international reinsurance market asked what requirements insurers set for new construction of tall wooden buildings.

The new requirements apply to buildings with combustible frames that have four or more storeys and are designed from 1 January 2023.

Länsförsäkringar encourages developers and construction companies, together with their fire consultants, to contact their regional insurance company as early as possible in the construction process.

"As an insurance company, we always want to be involved from the start and have the opportunity to influence things. It is important to choose the right building materials at the design stage. If something has to be changed afterwards, it often becomes more expensive and sometimes it is not even possible. This can lead to higher insurance premiums or, in the worst case, to us not being able to insure the building," emphasises Anna Dahlström.

- A facade material that is type-approved according to EN 16755 EXT, where the facade has been subjected to accelerated ageing in tests, provides better fire protection over time, which is extremely important as the building must function throughout its technical lifetime."

### INFO BOX

#### WOODSAFE® WFX & WOODSAFE® PRO

- Typeapproved by RISE (0402) according to Durability of Fire Performance EN16755 INT1, INT2, EXT
- Certificate reference: TG0263-08

*"This is the symbol you should ask for if you want to be sure your choice meets the requirements of SP-Fire 105 and EN16755 EXT"*





Photo: Credits to Södra

## CL boards gives freedom to create large wooden surfaces.

*"3-5-7 wooden lamellas is the building's "wooden wallpaper" in large formats up to 5000x1200x50mm. that achieves fire class B-s1,d0 through WOODSAFE® fire retardant treatment"*

CL board in 3-5-7 layers, is considered to be entirely made of solid wood as a finished product. By joining the longitudinal and transverse layers together, any distortion of the wood - swelling or shrinkage - is reduced to a negligible level. As a result, the product can easily fulfil the requirements of a modern building material. Cross-laminated timber is monolithic and is effectively a single piece of wood. The solid finished multi-layered product can carry high loads and allows for efficient construction time. CLT with WOODSAFE® fire retardant treatment fulfils national building code SP-Fire 105 and Euroclass B-s1,d0 as well as durability of fire performance EN16755 EXT.

CL board fire retardant treated with WOODSAFE® Exterior WFX is type approved in accordance with the Swedish National

Board of Housing, Building and Planning (SFS 2010:900). Available formats are standard dimension to project customised dimensions.





**CL BOARD** is a building component consisting of at least 3-5-7 layers of glued boards or planks made of softwood, where every second layer is at 90 degrees to the adjacent layer.

**CL BOARD WITH HEAT TREATED SURFACE**

A beautiful wood that is heat-treated at about 200 degrees and therefore has a dark colour throughout. Probably one of our most exclusive CLT boards. Rot-resistant, but to avoid greying, it needs to be surface treated. Without surface treatment, heat-treated wood greys quickly if exposed to sunlight. The greying can be reduced or stopped with various UV protection and pigments added to oils, varnishes or glazes.

**CL BOARD WITH STAINED SURFACE**

The possibility of choosing a natural surface for natural ageing is just as possible as choosing a coloured surface in shades such as grey, black, brown, silver and others.

**INFO BOX**

**WOODSAFE® - CL BOARD**

- Typeapproved SP-Fire 105
- Typeapproved by RISE (1002) according to Durability of Fire Performance EN16755 INT1, INT2, EXT
- Reference TG0263-08
- CE certified B-s1,d0
- Can be used indoor and outdoor
- Dimensional stability
- Large variety of formats
- Can be coloured

# Portfolio

# WOODSAFE® WFX





# Portfolio

# WOODSAFE® PRO





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