

ENHANCING THE PERFORMANCE OF ENGINEERED WOOD

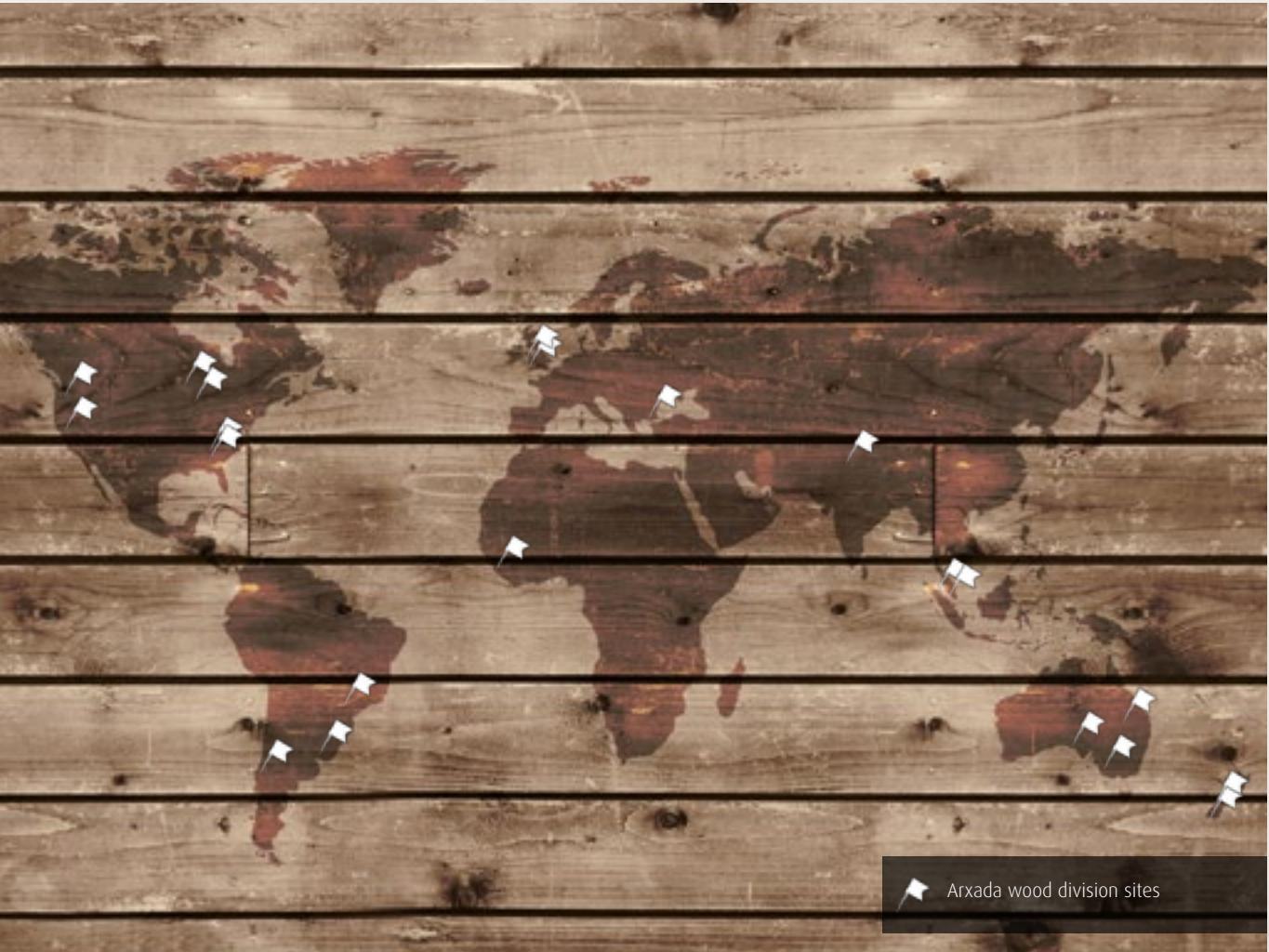


arxada

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On the cover:
New Zealand’s Nelson Airport Terminal was constructed with engineered wood enhanced with Arxada’s glueline preservative technology, giving it decay and borer protection.



We envision a world built with wood® that’s enhanced with industry-leading technologies designed to extend the life of wood - the earth’s most sustainable and versatile construction material.

For more than 80 years, Arxada’s wood protection business unit has led the market in the delivery of trusted and innovative technologies. We are a long-time respected supplier in the field of wood protection, making wood resistant to mold and moisture, insects, fungi, smoke development and flame spread while enhancing its natural beauty.

Our approach to business is characterised by innovative products, valued global brands and exceptional customer service. Our brands instil confidence and provide peace of mind, as do our support services, which enable our customers to make the most of wood’s unique and adaptable properties.

While our heritage runs deep, we continue to drive innovation. With a dedicated global in-house research & development team, we continually assess how our protection technologies can utilise modern actives to enhance the durability of wood as a sustainable resource.

As part of Arxada, we are something bigger. We can draw on a heritage of over 120 years of creating specialty ingredients and solutions that protect people, places and the planet. With unmatched expertise, Arxada is a leader in microbial control solutions covering hygiene, home, personal care, paints and coatings, crop protection, material protection and wood protection.

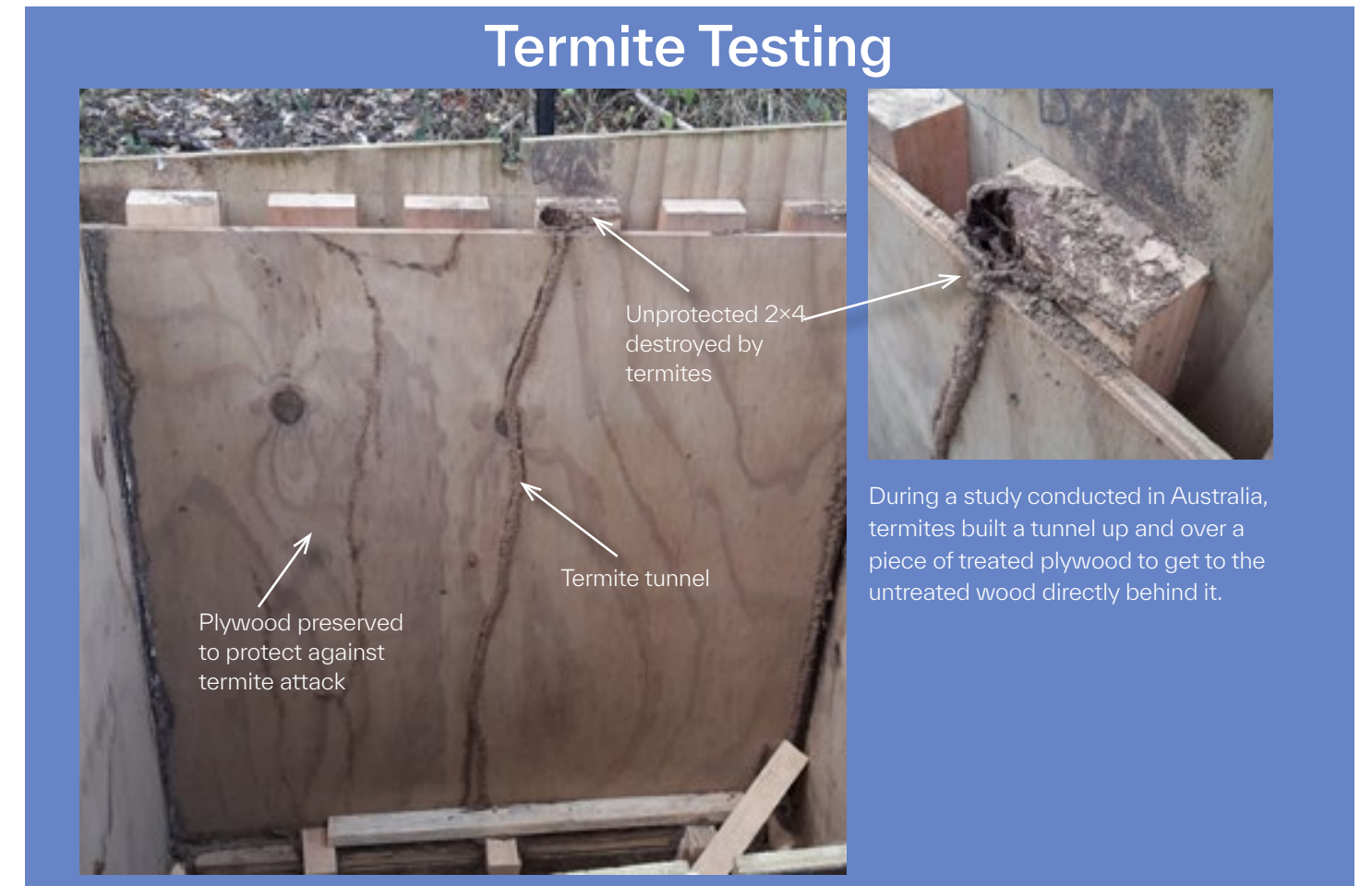
Arxada has a global operating presence and has the widest range of bioactives and registrations worldwide, covering 32 countries, 19 manufacturing sites, 11 R&D centers, over 5,800 customers and 2,900 colleagues.

Creative Solutions to Ensure Your Success

At Arxada, we continually innovate new products to stay ahead of market trends and add value to the wide range of solid and engineered wood products available. We perform extensive small-scale testing at our global research facilities to replicate the processes in commercial manufacturing. We work with our business partners during trials at our facilities and commercial trials at manufacturing facilities. This ensures quality products that can be introduced with confidence into specialized processes to add protection against mold, termites, and decay. We facilitate the use of our treatments by providing retention standards and quality control measures throughout the process.

Research Capabilities. At Arxada's research facilities for engineered wood, our studies focus on analytical, formulation and microbiology. We have a small-scale engineered wood manufacturing lab where we can replicate a customer's process, enabling us to produce trial samples of various engineered wood products such as LVL, OSB, Plywood, MDF & CLT. Our equipment and facilities include:

- PLC controlled hot press
- Strand tumbler
- MDF blender
- Cold press
- MOE/MOR strength testing machine
- Analytical wood preparation mill
- Conditioning unit
- Spray application system
- Decay trial 'warm room'
- Fire lab
- Pressure/vacuum cylinders
- Field decay and termite sites
 - Australia
 - United States



Did you know ...

Arxada has products that can be applied to surfaces or gluelines or be pressure-impregnated. Our treatments are specially formulated to ensure no negative impacts on bond strength. To determine this, we conduct tests with our treatments and each resin formulation used in glueline products. Our water-based treatments have been used successfully with a wide range of resin formulations typically used in engineered wood manufacturing. We work with resin suppliers to ensure their bond strength properties are not affected by the addition of our treatment formulation.



Research team making plywood samples treated with termiticide.



Termite field trial.



CNC machining of LVL.



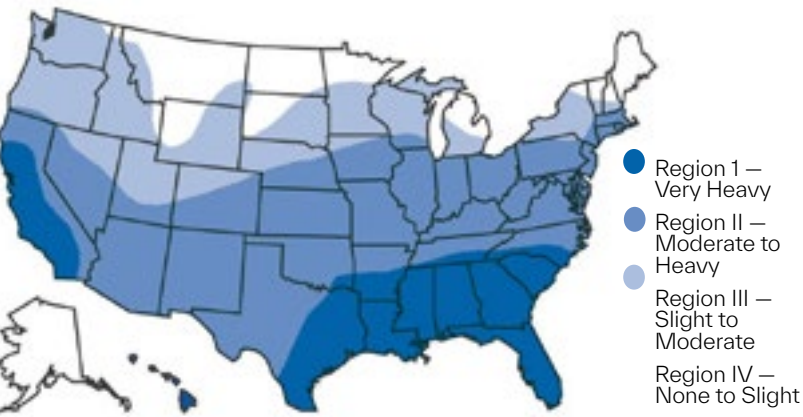
CLT termite trial.



Flat panel decay trial.

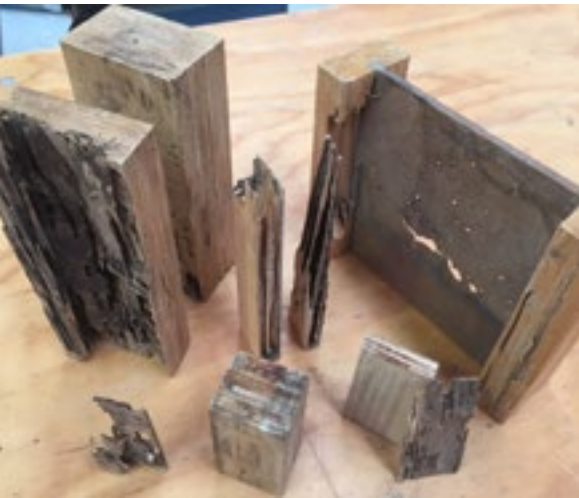
RUTHLESS, DAMAGING TERMITES

Termites cause millions of dollars of damage per year. Arxada’s wood protection division is committed to protecting wood from this enemy with products innovated to prevent termite devastation. Since 1991, Arxada has placed more than 86,000 samples in testing trials around the world. Our test sites in Australia, Hawaii, and the southeastern United States are where we subject test samples to thriving colonies of wood-eating insects.



Relative hazard of subterranean termite infestations in the United States according to the US Department of Agriculture forest Service 206 Home and Garden Bulletin.

Did you know ... Termites colonize most land masses on Earth (except Antarctica). Their colonies range in size from a few hundred individuals to enormous societies with several million individuals. Termite queens have the longest lifespan of any insect in the world. Some have reportedly lived up to 30 to 50 years.



Untreated engineered wood samples destroyed after 16 weeks in a termite trial.

MOISTURE COULD LEAD TO MOLD OR DECAY

Mold is present everywhere and thrives in a moisture rich environment. If not controlled, mold can affect the appearance and performance of wood within a matter of days by destroying the the wood it attacks.

Another natural enemy of wood is fungi, which also thrives in a damp climate. Wood destroying fungi grows by attacking the wood fiber, causing it to become soft and weak.

Mold and fungal decay are not only undesirable but also cause billions of dollars in damage each year. Mold is associated with health risks such as asthma.

Did you know... Dry rot is fungal decay due to poorly ventilated conditions that result in cracking and powdering of the wood. When dry rot occurs in the framing of a house, the damage may not be noticeable until it causes structural problems that require major repairs. Dry rot repair costs rise when the damage is extensive and wood needs to be removed and replaced. The location of the rot may cause repair costs somewhere in the range of a few hundred dollars to as much as \$50,000 or more.



Mold trial: untreated — left, treated — right.

Did you know ... The level of mold infestation in a home will directly affect removal cost and whether or not a specialist is required to do the job. A crawl space, for example, could cost as little as \$500 to repair but a whole house remediation cost could tens of thousands of dollars.



Plywood in a trial in Hawaii: treated top, untreated bottom.

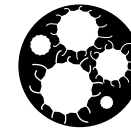
We help you supply a product that protects your clients against these risks!

CROSS LAMINTATED TIMBER



Arxada provides protection solutions.

Short-Term Mold Protection



CLT panels may be exposed to moisture and humidity during transportation, on the job site, or once installed prior to being enclosed. Ensure your CLT panels remain clean and mold-free from manufacture through construction with Arxada's AntiBlu® mold and sapstain protection products.

Termite Protection



Termites are extremely damaging and can wreak havoc on building structures. Arxada's Permatek® treatments offer protection against termites. Our Permatek® surface treatment, applied after manufacture, provides a barrier of protection around each panel. Add protection to each layer with Arxada's Permatek® glueline additive treatment, a patented technology that is mixed directly into the resin at your facility.

Interior Protection Against Decay



Moisture and humidity can reach inside the walls, creating an inviting environment for decay fungi to grow. Arxada's FrameGuard® and Wolman® AG surface treatments can provide long-lasting protection to CLT against decay in interior uses.



Photo courtesy of APA-The Engineered Wood Association

Exterior Protection Against Decay and Termites



Expand your market for CLT to exterior uses by manufacturing your panels with pressure-treated wood. Source lumber that has been pressure treated with one of Arxada's preservatives from an Arxada licensed producer for durability in both exterior out-of-ground and in-ground applications.



Not an experienced treatment applicator? No problem! We don't just supply you products, we can assist with:

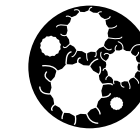
- **Application** — our highly qualified team of engineers assist with the design, installation, and ongoing support of equipment
- **Operations** — we provide field technical assistance and operational guidance
- **Quality** — we help with quality control procedures and analysis, and also offer an innovative software control system to manage treatment and quality while optimizing cost and processes

LAMINATED VENEER LUMBER



Arxada provides protection solutions.

Short-Term Mold Protection



LVL may be exposed to moisture and humidity during transportation, on the job site, or once installed. Ensure your LVL remain clean and mold-free from manufacture through construction with Arxada's AntiBlu® mold and sapstain protection products.

Termite Protection



Termites are extremely damaging and can wreak havoc on building structures. Arxada's Permatek® treatments offer protection against termites. Get protection through the full cross-section of LVL with Permatek® glueline additive, a patented technology that is mixed directly into the resin at your facility. While termite protection is achieved through the glueline additive, we also offer additional surface protection with our Permatek® surface treatment, applied after manufacture.

Interior Protection Against Decay



Moisture and humidity can create an inviting environment for decay fungi to grow. Arxada's FrameGuard® and Wolman® AG surface treatments can provide long-lasting protection against decay for LVL in interior uses.



Not an experienced treatment applicator? No problem! We don't just supply you products, we can assist with:

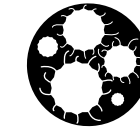
- **Application** — our highly qualified team of engineers assist with the design, installation, and ongoing support of equipment
- **Operations** — we provide field technical assistance and operational guidance
- **Quality** — we help with quality control procedures and analysis, and also offer an innovative software control system to manage treatment and quality while optimizing cost and processes

PLYWOOD



Arxada provides protection solutions.

Short-Term Mold Protection



Plywood may be exposed to moisture and humidity during transportation, on the job site, or once installed. Ensure your plywood remains clean and mold-free from manufacture through construction with Arxada's AntiBlu® mold and sapstain protection products.

Termite Protection

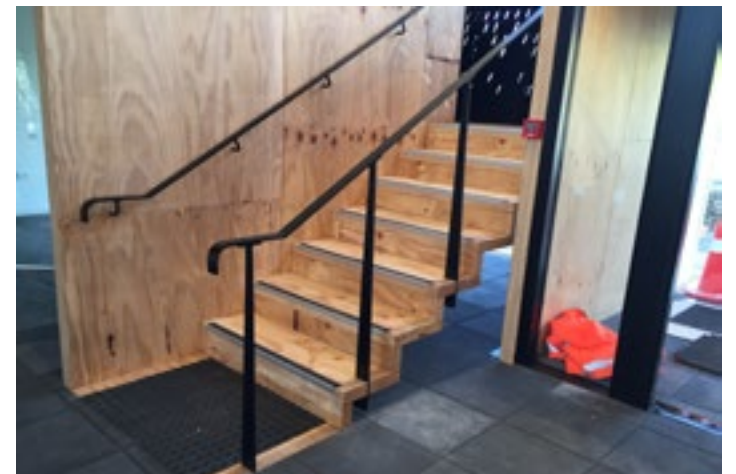


Termites are extremely damaging and can wreak havoc on building structures. Arxada's Permatek® treatments offer protection against termites. Get protection through the full cross-section of plywood panels with Permatek® glue-line additive treatment, a patented technology that is mixed directly into the resin at your facility. Our Permatek® surface treatment, applied after manufacture, provides an envelope of protection around plywood.

Interior Protection Against Decay



Moisture and humidity can create an inviting environment for decay fungi to grow. Arxada's FrameGuard® and Wolman® AG surface treatments can provide long-lasting protection against decay for plywood in interior uses.



Not an experienced treatment applicator? No problem! We don't just supply you products, we can assist with:

- **Application** — our highly qualified team of engineers assist with the design, installation, and ongoing support of equipment
- **Operations** — we provide field technical assistance and operational guidance
- **Quality** — we help with quality control procedures and analysis, and also offer an innovative software control system to manage treatment and quality while optimizing cost and processes

ORIENTED STRAND BOARD



INSECTICIDE



WOOD PROTECTION PRODUCTS



WOOD PRESERVATIVE

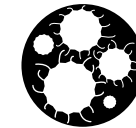


DECAY PROTECTION



Arxada provides protection solutions.

Short-Term Mold Protection



OSB may be exposed to moisture and humidity during transportation, on the job site, or once installed. Ensure your OSB remains clean and mold-free from manufacture through construction with Arxada's AntiBlu® mold and sapstain protection products.

Termite Protection



Termites are extremely damaging and can wreak havoc on building structures. Arxada's Permatek® treatments offer protection against termites. Get protection throughout the OSB panel with Permatek® glueline additive treatment, a patented technology that is mixed directly with the strand and the resin during manufacture.

Interior Protection Against Decay



Moisture and humidity can create an inviting environment for decay fungi to grow. Arxada's FrameGuard® and Wolman® AG surface treatments can provide long-lasting protection against decay for OSB in interior uses.



Photo courtesy of APA-The Engineered Wood Association

Not an experienced treatment applicator? No problem! We don't just supply you products, we can assist with:

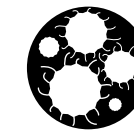
- **Application** — our highly qualified team of engineers assist with the design, installation, and ongoing support of equipment
- **Operations** — we provide field technical assistance and operational guidance
- **Quality** — we help with quality control procedures and analysis, and also offer an innovative software control system to manage treatment and quality while optimizing cost and processes

I-JOISTS



Arxada provides protection solutions.

Short-Term Mold Protection



I-joists may be exposed to moisture and humidity during transportation, on the job site, or once installed. Ensure your I-joists remain clean and mold-free from manufacture through construction with Arxada's AntiBlu® mold and sapstain protection products.

Termite Protection



Termites are extremely damaging and can wreak havoc on building structures. Arxada's Permatek® treatments offer protection against termites. Manufacture your LVL flange I-joists using LVL flanges and OSB webs protected with Arxada's Permatek® glueline additive treatment. This patented technology is mixed directly into the resin at your facility. Our Permatek® surface treatment, applied after manufacture, provides an envelope of protection around I-joists.

Interior Protection Against Decay



Moisture and humidity can create an inviting environment for decay fungi to grow. Arxada's FrameGuard® and Wolman® AG surface treatments can provide long-lasting protection against decay for I-joists in interior uses.



Photo courtesy of APA-The Engineered Wood Association

Not an experienced treatment applicator? No problem! We don't just supply you products, we can assist with:

- **Application** — our highly qualified team of engineers assist with the design, installation, and ongoing support of equipment
- **Operations** — we provide field technical assistance and operational guidance
- **Quality** — we help with quality control procedures and analysis, and also offer an innovative software control system to manage treatment and quality while optimizing cost and processes



Products to Improve the Performance of Engineered Wood

PERMATEK® INSECTICIDES

Permatek® products are specially formulated insecticides for the control of wood damaging insects in engineered wood products. They can be used in a glueline process, adding protection to all layers of engineered wood, or as a surface treatment.



ANTIBLU® WOOD PROTECTION PRODUCTS

AntiBlu® anti-sapstain products provide short-term protection against biological growth that can harm the wood's appearance and desirability.



FRAMEGUARD® TREATMENT

FrameGuard® treatment is a combined solution of anti-mold chemicals and preservative technology, providing protection against mold, decay, and termites.



WOLMAN® AG

Wolman® AG is a metal-free preservative that is ideal for wood products in interior applications.



Pressure-Treatment Products

A variety of pressure-treatment preservatives are applicable for use with engineered wood products. The formulations available through Lonza have been innovated to protect against termites and fungal decay.

*Not all products are available in all markets. Ask your sales representative about products in which you are interested.

Review and follow all product safety instructions. All product information corresponds to Arxada's knowledge on the subject at the date of publication, but Arxada makes no warranty as to its accuracy or completeness and Arxada assumes no obligation to update it. Product information is intended for use by recipients experienced and knowledgeable in the field, who are capable of and responsible for independently determining the suitability of ingredients for intended uses and to ensure their compliance with applicable law. Proper use of this information is the sole responsibility of the recipient. This information relates solely to the product as an ingredient. It may not be applicable, complete or suitable for the recipient's finished product or application; therefore republication of such information or related statements is prohibited. Information provided by Arxada is not intended and should not be construed as a license to operate under or a recommendation to infringe any patent or other intellectual property right. No claims are made herein for any specific intermediate or end-use application. All trademarks belong to Arxada or its affiliates or to their respective third parties and are used here only for informational purposes. © 2022 Arxada

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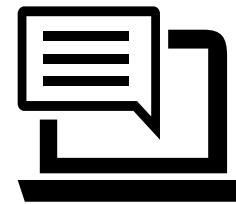
Service that makes the difference.

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Let Arxada be your partner in expanding
the benefits of wood.

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