



The specifiers' guide to TANALISED[®] preservative treated wood products



TANALISED® WOOD PRODUCTS

The Case for Built in Durability

Wood is a versatile building and construction material that has many important benefits over alternative materials with regard to net environmental impact, cost effectiveness and ease of use. However, wood may require protection from natural agents such as decay and termites in many situations.

Durability has emerged as one of the key considerations in determining the suitability of building materials. The best way of ensuring timber durability against termites and decay is by Tanalised® protection, the leading brand of wood protection in Australia and New Zealand for fifty years.

Tanalised® is the modern form of decay and termite resistant timber and provides the specifier, designer and builder with the following advantages;

- ◆ Guaranteed performance through our structural guarantee programs.
- ◆ A range of Tanalised® treatments to suit different applications and user preferences.
- ◆ A huge range of round, sawn and engineered wood products from a network of leading manufacturers and suppliers throughout Australia and New Zealand.
- ◆ Expert technical advice and guidance on all aspects of using Tanalised® timber products.

For example, the need for durability has been shown in recent years with the upsurge in termite activity in all parts of the country. Pest control industry sources confirm that the reported incidence of termite attack in houses is increasing alarmingly. Tanalised® timber structures with built in durability can play an important role in reducing the consequences of termite attack.

In the commercial environment, designers and builders can ill afford call backs and claims for products or materials that fail to perform. Design skills and detailing can improve timber performance in service but inherent or 'built in' durability should also be employed. Specifying Tanalised® treated timber products is an excellent way of ensuring that all timber building components have an appropriate level of durability given their intended function, the degree of exposure or hazard and the time period that the product is required to last. Testing by the CSIRO and other research organisations has shown that correctly treated timber is capable of lasting for many decades even in the most hostile environments.

In Australia, preservative treatment of timber is specified under ASI604 - Specification for preservative treatment and complementing legislation in Queensland and New South Wales. The most important information that the specifier and user need to be aware of with Tanalised® timber is what is called the treatment brand¹. Each piece of treated timber should bear a brand which should have the following form;

XXX 01 H3

This symbol identifies three very important pieces of information. From the left, XXX represents a three digit number known as the plant number. This code uniquely identifies the facility where the wood product was treated. The plant's full identification details can be obtained by contacting State Forests of New South Wales or Arch Wood Protection.

The second number is called the preservative number and this identifies the preservative that was used to treat the timber. The 01 above for example refers to oxide type CCA. A full list of preservative numbers can be found in appendix C1 of ASI604.

The last part of the brand is the hazard level to which the timber is treated as detailed in ASI604. The hazard level is a practical guide to the severity of exposure and biological degrade agents that timber will be subject to in various situations. A summary is included at the back of this guide. H3 above refers to exterior, above ground situations of which decking, fence pickets and cladding are relevant examples.

Arch Wood Protection hope that you find this guide useful in specifying and using Tanalised® preservative treated wood products.

1 – All treated timber supplied in conformance with ASI604 or relevant state legislation should bear a treatment brand. The brand may be burnt on, ink stamp or a printed label. Timber of less than 15 mm nominal thickness do not require individual piece branding and may be pack branded (see Section 8 of ASI604)

TERMITE HAZARD MAP



TANALISED® FRAME H2

Termite resistant structural timber & engineered wood products

Hazard level 2 (H2) according to AS1604 - Specification for preservative treatment, is defined as protected, interior timber applications where there is potential for termite attack. Examples are frames, trusses, sub-floor supports and similar timber internal building components. Timber products treated to H2 or a higher level are deemed to be termite resistant building materials according to the Building Code of Australia and AS3660.1 Termite management – New building work.

Most of the mainland areas of Australia have a termite hazard and protection of new buildings or extensions is required under the Building Code in these areas. Many populated areas have a high or even very high termite hazard as determined by the CSIRO survey (refer to the hazard map on opposite page).

Clearly, building material durability is an important consideration. The designer and builder should be aware of the need for durability as advised in Clause 1.10 and Appendix C of AS1684 - Residential timber frame construction.

Tanalised® Frame H2 treated timber structure provides insurance that the structural integrity of the building will not be compromised even if termites breach the primary barriers, which they often do. The additional cost of Tanalised® Frame protection for an average house is only a fraction of the typical repair costs where termites cause structural damage.

Arch Wood Protection recommends the following three tiered approach for best practice in managing the risk of termite attack.

- ◆ Design and build in a termite barrier system conforming to AS3660.1.
- ◆ Design and build in durability for all concealed structural timber components with Tanalised® Frame H2 treated termite resistant timber products.
- ◆ Design and build in ease of inspection for on-going maintenance.

The specifier is advised to be aware of the following considerations when specifying Tanalised® Frame H2 treated termite resistant timber products.

There are two types of H2 treatment approved under AS1604.1. H2 applies to all areas of mainland Australia. There is also H2-F sub-category for softwood framing timber which is suitable for most situations but should only be used south of the Tropic of Capricorn (see map). See AS1604.1 or contact Arch Wood Protection for further information.

Tanalised® Frame H2 is suitable for hazard level 2 only and must not be used in a wet or weather exposed applications. If protection against fungal decay as well as termites is required for an exterior exposure (eg: window frames) then H3 level treatment should be specified for those components.

Timber species – Not all timber species are suitable for H2 treatment. Most pine species and some hardwoods are suitable but advice should be sought from the supplier or ArchWoodProtection regarding other species. A wide range of solid timber and engineered wood products such as plywood, "I" beams and laminated veneer lumber (LVL) can be supplied with Tanalised® Frame protection. Contact your supplier for details.

Painting: The Tanalised® Frame treatment may contain a red or blue marker dye. Steps may need to be taken to avoid dye bleed if the timber is to be painted. Refer to Arch Wood Protection Guidelines for Painting Tanalised® LOSP Treated Timber and AS2311 – The painting of buildings for further details.

End cuts in timber used south of the Tropic of Capricorn need not be resealed in H2 applications. Refer to the application notes on the back page.

Tanalised® Frame is non-corrosive to metal fasteners and does not significantly affect nail plate holding or plaster board adhesion.

The Tanalised® Frame treatment does not affect the structural grading of the timber products.

ArchWoodProtection and our partner suppliers provide a specifically developed 25 year structural guarantee on Tanalised® Frame products. Contact Arch Wood Protection or your supplier for details.



Built in durability against termites



TANALISED® CLEAR & PRE-PRIMED H3

Solvent borne treatments for structural & architectural timber

Hazard level 3 (H3) according to AS1604 is defined as exterior and above ground timber applications where exposure to weather and moisture may promote decay and/or termite attack. Examples are decking, and deck supports, pergolas, cladding, exterior window and door frames, reveals, fascia, verandah posts, handrails, pickets and similar timber building components.

The Tanalised® Clear treatment process uses unique solvent and oil based carrier systems. This technology is ideal for the protection of structural and architectural timber products from decay and termites in common exterior building and structural applications.

Because Tanalised® Clear treatment is an inherently "dry" process it does not affect the moisture content or dimensions of the timber. In addition, water repellents and natural drying oils present in the treatment enhance dimensional stability and resistance to moisture. Thus a wide range of Tanalised® Clear and Pre-Primed timber products are available including traditional sawn solid timber, finger jointed and glue laminated timber products as well as engineered timber products such as laminated veneer lumber (LVL) and plywood.

Tanalised® Clear is also ideal for joinery such as window and door frames where precision machined timber components are required to have durability against decay and termites. (Refer to Section 3.2 of AS2047 Windows in

buildings – Selection and installation)

Any building application with timber should consider the durability requirements as detailed in Clause 1.10 and Appendix C of AS1684 Residential timber frame construction, and in other relevant standards and codes. Low natural durability timber should

not be used in weather exposed or ground contact applications without preservative treatment conforming to AS1604.

The specifier is advised to be aware of the following considerations when specifying Tanalised® Clear & Pre-Primed LOSP treated timber products.

Tanalised® Clear and Pre-Primed is suitable for hazard level 3 application as defined in AS1604. Tanalised® Clear & Pre-Primed verandah posts for example must be installed using appropriate above ground anchor brackets or stirrups. If protection in ground contact is required such as with posts set in ground, then H4 or H5 level treatment must be specified such as Tanalised® Ecowood or Tanalised® CCA.

Timber species – Not all timber species are suitable for LOSP treatment. Most pine species and some hardwoods are suitable but advice should be sought from the supplier or Arch Wood Protection regarding other species if in doubt.

Painting - It is important that Tanalised® Clear timber is painted or stained for exterior, weather exposed applications to prevent surface deterioration and mould. Tanalised® Clear & Pre-Primed is suitable for coating with normal paints and timber stains. Tanalised® Clear Pre-Primed is supplied with a factory applied primer which may be light blue, pink or grey. However, this primer coat is not intended for long term protection in the end-use situation and is not a substitute for full painting. Refer to the Arch Wood Protection Guidelines for Painting Tanalised® LOSP Treated Timber, the Australian Paint Manufacturers Federation and AS2311 – The painting of buildings for further information.

Fasteners - Tanalised® Clear & Pre Primed treatment is non-corrosive to metal fasteners. However galvanised steel or other corrosion resistant fasteners are recommended for use in weather exposed situations.



Built in durability against decay and termites



TANALISED® ECOWOOD

Good for generations to come

Increasingly throughout the world, more stringent compliance standards and community expectations have driven the need for new timber preservatives with improved 'whole-of-life' profile. Tanalised® Ecowood is a significant step in addressing these needs and is particularly recommended where durable treated timber products must meet high user expectations for safety and environmental protection. It achieves this by using modern, clean chemical technology that reduces environmental risks during manufacture and use and presents a superior range of viable options for product disposal or recycling at the end of service life.

Tanalised® Ecowood is an environmentally advanced treated timber product that incorporates Tanalith® E, a unique Copper Azole based wood preservative system. The first European registrations and commercial uses of Tanalith® E Copper Azole preservatives commenced in 1992. This early progress has led on to further developments and product improvements in response to evolving regulatory and market conditions. Tanalised® Ecowood conforms to the latest United States EPA and European Union directives on treated wood products for domestic and residential use. The Australian Pesticides & Veterinary Medicines Authority (APVMA) has conducted a review in Australia and has determined that wood products intended for certain applications such as playground equipment, handrails, outdoor furniture and residential decking, should be treated with a non-arsenic based preservative such as in Tanalised® Ecowood. This regulation will come into effect in March 2006. Today Copper Azole preservatives are in wide use around the world including many countries in Europe, the United States and more specifically Japan, Australia and New Zealand in the Asia Pacific region.

Tanalised® Ecowood is approved for hazard level 3 and 4 applications as per AS1604 for hardwoods and softwoods and for hazard level 5 with softwood only. These hazard levels cover the majority of outdoor timber building and landscaping applications where long term protection against decay and termites is required.

Tanalised® Ecowood is ideal for many common applications that require robust

levels of protection such as outdoor and garden furniture, pool side decking, playground equipment, walkways and landscaping in fragile wetlands, wilderness or national park areas.

The specifier is advised to be aware of the following considerations when specifying Tanalised® Ecowood.

Timber species – Tanalised® Ecowood is available in common hardwood and softwood timber products. Sawn softwood timber such as radiata or slash pine for use in structural applications should be dry (10 – 15% moisture) at the time of supply. Ensure that if structural Ecowood pine is required that an appropriate structural grading (ie: F7) and "dry after treatment" is specified.

Ensure that the Tanalised® Ecowood product is treated to the correct hazard level, H3 for above ground and H4 for non-structural ground contact applications and H5 for engineered or critical use in ground contact.

Painting: Tanalised® Ecowood can be painted like normal timber once dry and clean. Painting or staining of dimensioned timber in exterior, weather exposed situations is strongly recommended to minimise surface moulds, checking, sun bleaching and dimensional movement.

Fasteners: Tanalised® Ecowood has similar corrosion properties to traditional CCA treatment. Galvanised steel or other corrosion resistant fasteners are recommended for use in all weather exposed or ground contact situations. Stainless steel fasteners and connectors (or metals of high corrosion resistance) should be used for critical applications where very long service life is required and where additional sources of corrosion are present such as salt. Tanalised® Ecowood should not be installed in direct contact with zinc-alume sheet roofing as corrosion may result. Use pre-painted roofing or install a durable water resistant membrane between the materials.



Built in durability against decay and termites



TRADITIONAL TANALISED® CCA

A proud record of service



CCA stands for copper, chrome arsenate and this remarkable wood preservative has been in use for over fifty years. It has stood the test of time and even today is still preferred where wood products require protection in high hazard situations. Tanalised®

CCA is the longest serving and most widely used timber treatment in Australia, New Zealand and many other parts of the world. Even where CCA is being withdrawn from residential applications, it is generally retained for utility, structural and rural uses where low maintenance and high durability are essential.

The unique properties of Tanalised® CCA make it the ideal choice where treated wood products must have the highest levels of durability and engineering safety. Examples are engineered retaining walls, bridges, safety barriers, building and utility poles, foundation piles, sea walls, marine piles and industrial applications such as cooling tower fill. Tanalised® CCA is ideal for rural and agricultural applications such as vineyard posts and hail net poles. The APVMA has conducted a review of CCA preservative in Australia and has determined that while there is no specific information indicating that CCA treated wood poses unacceptable risks, on a precautionary principle CCA should not be used for the treatment of timber and wood products to be used for certain applications such as playground equipment, handrails, picnic tables, park benches, garden furniture and residential decking. This regulation will come into effect in March 2006.

Of course, Tanalised® CCA can still be used for all other normal domestic construction and landscaping applications although Arch Wood Protection suggest that alternatives such as Tanalised® Ecowood may also be considered in these cases.

Tanalised® CCA is suitable for application in all the hazard levels listed in AS1604 – Specification for preservative treatment (refer to hazard level guide). However it is important to understand that

timber should not be used in a situation at a higher hazard level than that for which it is branded. In particular, Tanalised® CCA timber branded for H3 application should not be used in ground contact (H4). Tanalised® CCA timber branded H4 should not be used for structural or critical in-ground applications (H5). Structural or critical use in-ground applications include foundation piles, building poles, engineered retaining walls, permanent fresh water contact and certain industrial applications such as cooling towers.

Marine water exposure (H6) is the most severe service condition that timber is subject to. However the exact product requirements vary depending on the site (southern or northern waters). It is strongly recommended that specialist advice is sought prior to specifying for H6 applications.

The specifier is advised to be aware of the following considerations when specifying Tanalised® CCA.

Timber species – Tanalised® CCA is available in common hardwood and softwood timber products.

Sawn softwood timber such as radiata or slash pine for use in structural applications should be dry (10 – 15% moisture) at the time of supply. Ensure that if structural Tanalised® CCA pine is required that an appropriate structural grading (ie: F7) and "dry after treatment" is specified.

Fasteners: Galvanised steel or other corrosion resistant fasteners are recommended for use in all weather exposed or ground contact situations. Stainless steel fasteners and connectors (or metals of high corrosion resistance) should be used for critical applications where very long service life is required and where additional sources of corrosion are present such as salt.

Tanalised® CCA should not be installed in direct contact with or over zinc-alume sheet roofing as corrosion may result. Use pre-painted roofing or install a durable water resistant membrane between the materials.

Tanalised® CCA off cuts and redundant pieces are not a hazardous waste. However it is recommended that care is taken to dispose of this waste properly (as solid waste). It should not be mixed with green waste for composting and MUST NOT be burnt as toxic fumes or residues may be produced.

Built in durability against decay and termites



TREATED TIMBER HAZARD LEVEL GUIDE

The specifier or designer should ensure that the Tanalised® timber is used is specified to the correct hazard level. Using treated timber in a higher hazard level than it is intended for may result in premature failure. Note that the hazard level of treatment is not related to the stress grade or other engineering properties of the timber.

H1

Inside, above ground, dry

Insect borer (other than termites) hazard. Framing, flooring, furniture etc.

(Contact Arch Wood Protection for information regarding Tanalised® B, or boron)



H2

Inside, above ground, dry

Insect borer and termite hazard.

Framing, flooring, trusses.



H3

Outside, above ground

Moderate fungal decay and termite hazard.

Decking, fencing, cladding, fascia, window joinery, exterior structural timber



H4

Outside, in ground

High fungal decay and termite hazard. Fencing, greenhouses, pergolas, non-structural and landscaping timbers. (Contact Arch Wood Protection for information regarding Creosote)



H5

Outside, in ground or fresh water

High fungal decay and termite hazard. Engineered retaining walls, building poles, pilings and cooling tower fill, structural or critical applications.

(Contact Arch Wood Protection for information regarding Creosote)



H6

Marine water exposure

Marine borers hazard. Marine piles, jetty cross-bracing, landing steps, sea walls.

(Contact Arch Wood Protection for information regarding Tanalised® K (creosote) or Tanalised® B (boron))



ADDITIONAL APPLICATION NOTES:

Tanalised® protection can not be applied by the end user or on site. A conforming Tanalised® product can only be provided by pre-treatment in dedicated industrial facilities prior to supply.

Tanalised® timber products should not be re-sawn, or re-sized after treatment (except for cutting to length or notching as required for fitting and joining). These processes may reduce the protection afforded by the treatment and may void the product guarantee. Where timber is cut or rebated in H3, H4 and H5 situations, the exposed areas must be resealed with a suitable 'in-can' protective such as Tanalised® Ecoseal to ensure that an integral envelope is maintained. In H4 situations it is recommended not to place a cut end in ground contact. For H5 applications a cut end must not be placed in ground or water contact and doing so may void the guarantee. No cutting or notching should be done after treatment on H6 level treated timber in the water contact zone.

It is strongly recommended that all dimensioned Tanalised® timber in weather exposed applications is painted, stained or sealed to avoid surface deterioration, checking and dimensional movement. Tanalised® timber can be painted or stained like normal untreated timber providing that it is dry and clean. The paint manufacturers' instructions should always be followed. The Australian Paint Manufacturers Federation can also be contacted for further information.

Corrosion resistant fasteners, fixings and connectors should be used in all weather exposed, damp or ground contact applications.

SOME RELEVANT AUSTRALIAN STANDARDS

- AS1604 - Specification for preservative treatment - Parts 1-5
- AS1684 - Residential timber frame construction
- AS3660 - Termite management - Part 1, New building work
- AS2311 - The painting of buildings
- AS2047 - Windows in buildings - Selection and installation
- AS1720 - Timber structures - Design methods
(including handbook HB 108 -1998)
- AS4678 - Earth Retaining Structures
- AS5604 - Timber - Natural durability ratings



SAFETY AND ENVIRONMENTAL PROTECTION:

Tanalised® wood products are safe to use however as with handling many materials, certain precautions should be observed, particularly where machining or sanding generates wood dust and air borne residues. Detailed handling guides, consumer information sheets and material safety data sheets are available from Arch Wood Protection for further information.

Industrial timber treatment plant facilities are required to conform to strict environmental regulations and are under the jurisdiction of environmental protection authorities in each state. Tanalised® preservatives are regulated nationally by the Australian Pesticides & Veterinary Medicines Authority (APVMA) and other regulatory authorities.

Treated wood wastes and off cuts are not hazardous waste. However care should be taken to dispose of these waste appropriately through normal disposal services. Treated timber wastes should not be mixed with general green waste for composting. Treated timber should not be burnt in uncontrolled situations.

CONSUMER PROTECTION:

In addition to all statutory consumer rights under law, Arch Wood Protection and our partner suppliers provide limited guarantees on Tanalised® treated wood products. Contact your supplier or Arch Wood Protection for further details.

FURTHER INFORMATION:

Arch Wood protection have a wide range of technical, safety and application literature available. For further sources of information contact the Timber Preservation Association of Australia, the CSIRO Division of Forest Products, your state Forestry, Building Information or Timber Advisory Service, the APVMA or Worksafe Australia.

This information is presented in good faith and is believed to be accurate based the best available advice and knowledge at the time of printing. However due to the variability of application situations, the user must satisfy themselves as to the suitability of the information or the products for any particular purpose or circumstance or obtain suitable expert professional advice.

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Tanalised® treated wood products are manufactured by many independent producers throughout Australia and New Zealand. Consult your supplier for individual product availability and specifications.