



## PRESSURE TREATED TIMBER & PLYWOOD CODE OF PRACTICE

### DEFINITION

Tanalised® E pressure treated timber is timber which has been impregnated with Tanalith® E wood preservative under controlled conditions in a vacuum pressure timber impregnation plant.

Tanalith® E is a waterbased wood preservative that contains copper and organic biocides (triazoles). When impregnated into the timber the preservative components bond with the wood structure and cannot easily be removed.

Tanalised® E pressure treated timber gives long term protection against fungal and insect attack, including termites, for both in and out of ground contact, interior and exterior applications.

Tanalised® E pressure treated timber is a natural green in colour. Upon external exposure, the green colour slowly weathers to a warm, honey brown and in the longer term becomes a natural silver grey.

Tanalised® E pressure treated timber is also available with built-in water repellent or built-in brown colour:



With the benefit of water repellent properties, Tanalised® Extra pressure treated timber is ideal for outdoor leisure and decorative timbers such as decking, cladding and playground equipment.



Tanatone® treated timber has a brown colouration as opposed to the traditional Tanalith® green. It is ideal for rough sawn timber fencing and landscaping applications.

Recommendations provided for Tanalised® E pressure treated timber apply equally to Tanalised® Extra and Tanatone® pressure treated timber, unless otherwise stated.

This document provides guidance on using Tanalised® E pressure treated timber within the UK. For other geographic markets, additional relevant regulations and requirements may need to be considered.

### TANALITH® E WOOD PRESERVATIVE

Tanalith® E wood preservative is approved for use as directed under the Control of Pesticides Regulations (COPR) by the UK Health and Safety Executive. The biocides contained in Tanalith® E wood preservative are being supported under the Biocidal Products Directive.

### SPECIFICATION

Consult the Arch Timber Protection Specifier's Guide to Tanalised® E pressure treated timber.

It should be noted that the treatment process parameters are varied, taking into account timber species, desired service life and to match the end use (Use Class) of the timber. It is therefore extremely important that the end use and species of the timber are clearly stated within the specification. Use Classes are defined in BS EN 335-1 but can be summarised as follows:

- Use Class 1 - internal building timbers - no risk of wetting.
- Use Class 2 - internal building timbers - risk of wetting.
- Use Class 3.1 - external timbers used above ground contact and coated.
- Use Class 3.2 - external timbers used above ground contact and uncoated.
- Use Class 4 - external timbers used in ground or fresh water contact.

Helping you make the most of timber



PRESSURE TREATED TIMBER



PRESSURE TREATED TIMBER  
WITH BUILT-IN WATER REPELLENT



PRESSURE TREATED TIMBER  
WITH BUILT-IN COLOUR

## PREPARATION OF TIMBER FOR TREATMENT

Present the timber to the treatment plant in a dry and clean condition as follows:

- Dried to a moisture content of 28% or less.
- All inner or outer bark should be removed.
- Free from dirt, sawdust, surface coatings, surface water, plastic wrapping, ice and snow.
- Free from all signs of attack by bacteria, blue staining fungi, wood destroying fungi or insects.
- As far as possible all cutting, machining, planing, notching and boring is to be carried out prior to treatment (see section on post-treatment machining).
- DO NOT attach metal fittings prior to treatment.
- DO NOT excessively tighten any banding around the timber pack.
- If possible, prepare tilted packs for treatment to promote preservative drainage.
- Use sticker-stacked pack configurations to optimise post-treatment drying.
- Where possible use treated stickers for timber packs.
- DO NOT treat timber wrapped in polythene.
- DO NOT treat frozen timber.

## APPEARANCE

The freshly treated timber will show a colour difference between the sapwood and heartwood for the first 48 hours, after which the timber will take on an even green appearance. Colour variations may occur due to the natural variability of the relative proportions of heartwood and sapwood and darkening of some hardwoods may occur. Upon external exposure, the green colour slowly weathers to a warm, honey brown and in the longer term becomes a natural silver grey. If required, the green colour can be refreshed using Restol or Hickson Decor Wood Oil coatings available in Tanalised® green. Always follow the coating manufacturer's instructions in these situations. For more information on these products contact the Arch Timber Protection Advisory Service.

Tanatone® pressure treated timber with built-in colour has a brown appearance. Tanatone® will not hide or mask wood grain nor will it totally mask discolouration caused by weathering or dirt, fungal staining or wood defects. In addition, some resinous softwoods, eg redwood, may exhibit resin flecking if treated when the timber is still fresh/unseasoned. This can occur with both Tanatone® and Tanalised® E pressure treated timber, but may be accentuated by Tanatone®. As with all colour applications to timber, the brown colour will fade with time. If required, the colour can be refreshed with a brush-on colour product. Always follow the coating manufacturer's instructions in these situations.

Enhanced protection against the weather can be obtained by using Tanalised® Extra pressure treated timber with built-in water repellent. Brush applied water repellent coatings, such as Hickson Decor Waxcoat can also be used. These are particularly effective when applied as a regular maintenance product to the surface of Tanalised® Extra pressure treated timber. Always follow the coating manufacturer's instructions in these situations.

Note that timber is a variable and natural product. Occasionally timber containing high or mobile resin levels can give a blue colouration at the point of treatment. Upon weathering this fades rapidly into the overall colouration of the treated timber.

## CONFIRMATION OF TREATMENT

Customers are recommended to obtain a Certificate of Treatment covering their orders. These are available from the processor.

Please note that the treatment process parameters are varied according to the timber species and end use of the treated timber commodity, taking into account the potential for biological degradation.

## POST-TREATMENT STORAGE AND COLLECTION OF TREATED TIMBER

Following treatment, Tanalised® E pressure treated timber must be stored at the treatment plant site until dry, before it can be despatched and used. This storage should be in a designated drip dry area, protected from rainfall and direct sunlight. The drying time will depend upon weather conditions, species, specification, timber dimensions, pack size and whether the timber is sawn, planed or sanded. 48 hours is a typical time frame. Treated packs should be tilted to promote preservative drainage and prevent surface ponding. It is advisable to stack packs evenly to prevent dripping onto lower packs.

Liaison between the customer and the supplier is necessary to determine when the timber will be ready for collection.

In countries other than the UK, local regulations may apply.

## POST-TREATMENT DRYING

Where close tolerance work is involved it is advisable to pre-machine the timber at the in-service equilibrium moisture content. It is then the contractor's responsibility to ensure that the need for re-drying is recognised and allowed for.

Timber for air drying should be open stacked under ventilated conditions and protected from rain and snow to promote post-treatment drying. DO NOT wrap wet treated timber in polythene.

## POST-TREATMENT MACHINING

As far as possible all cutting, machining, notching and boring is to be carried out prior to treatment.

Where cutting, machining, notching and boring has to be carried out to treated timber, the area of timber revealed by the cross cuts, holes or notches must be liberally brushed with Ensele® end grain preservative in accordance with the manufacturer's instructions to maintain the integrity of the preservative protection.

Pieces which are rip sawn, thickened, equalised or planed must be returned to the treatment plant for re-treatment.

On no account are fence posts to be pointed after treatment. The shortening of posts and columns should be avoided if possible, but in any event cross cutting must be restricted to the top of the post or column and the cross cut surface must liberally be brushed with Ensele® end grain preservative in accordance with instructions on the product label.

For more information on Ensele® contact the Arch Timber Protection Advisory Service.

## GLUING

Tanalised® E pressure treated timber dried to less than 20% moisture content and in equilibrium or within 5% of its expected in-service moisture content, may be glued with most commonly available adhesives.

Tanalised® E pressure treated timber may be glued after cleaning off any surface deposits or dirt with a wire brush, or after a light sanding.

In consultation with the adhesive manufacturer, select an adhesive appropriate to the in-service exposure condition and appropriate for load bearing or non-load bearing requirements. Consult the glue manufacturer on the suitability and use of their particular product and follow the directions of the appropriate regional standards.

For load bearing constructions, phenol resorcinol formaldehyde, resorcinol formaldehyde, phenol formaldehyde, melamine urea formaldehyde, melamine formaldehyde, urea formaldehyde, emulsion polymer isocyanate glues are generally used.

For non-load bearing constructions, emulsion polymer isocyanate, polyurethane, polyvinyl acetate, urea formaldehyde, melamine urea formaldehyde, melamine formaldehyde and phenol resorcinol formaldehyde glues are generally used.

For exterior or damp conditions, phenol resorcinol formaldehyde, resorcinol formaldehyde or phenol formaldehyde glues are generally used.

For internal dry conditions, resorcinol formaldehyde, phenol formaldehyde, melamine urea formaldehyde casein, polyvinyl acetate, urea formaldehyde, emulsion polymer isocyanate glues are generally used.

## TREATMENT OF PRE-GLUED ASSEMBLIES

Assemblies which are to be treated with Tanalith® E wood preservative may first be glued using a suitable waterproof adhesive.

Phenol resorcinol formaldehyde or phenol formaldehyde glues are generally used.

Polyvinyl acetate, casein, or urea formaldehyde types are NOT recommended.

Always consult the glue manufacturer on the suitability and use of their particular product and follow the directions of the appropriate regional standards.

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It is important that the glue lines should be fully cured as required by the glue manufacturer, usually several days, before the assembly is sent for treatment.

Where enclosed cavities are involved, access holes must be drilled to permit the entry and exit of preservative solutions.

Under previous systems WBP (weather and boil-proof) grade plywood was classified under BS1204. This standard has now been withdrawn.

Now plywood grades are based on BS EN 636 (Dry, Humid and Exterior classifications), which themselves are based on bonding classes 1, 2 and 3 from BS EN 314 Part 2. Plywood that is either WBP or BS EN 636 Exterior grade (BS EN 314 Part 2 bonding class 3) should now be specified. Humid grade (bonding class 2) might be acceptable, but the board manufacturer or supplier should be asked to confirm that Humid grade board can be put through a high pressure vacuum treatment process.

## SURFACE COATINGS

Tanalised® E pressure treated timber does not have to be painted or stained to maintain its preservative properties.

Many coating products are available on the market and whilst Arch Timber Protection has tested a broad range of these for compatibility with Tanalised® E pressure treated timber it is not possible to test all of them. Always consult the coating manufacturer's recommendations before applying a coating product to Tanalised® E pressure treated timber.

If Tanalised® E pressure treated timber is to be painted, stained or varnished, the timber should be dried throughout the cross section. Always follow the manufacturer's instructions, taking note of the recommended maximum moisture content.

The preservative treatment is not a substitute for knotting, base coating or priming.

If waterbased coatings are applied, some discolouration may occur in exceptional circumstances. If this happens, allow the coating to dry completely. Then apply an additional coat of product, preferably one with a high build, high solids content. It is NOT recommended to apply opaque paint systems to Tanatone® pressure treated timber.

## METAL FIXINGS & FITTINGS

### GENERAL ADVICE

It is important to follow the recommendations of the manufacturer of any metal products used for specific advice regarding suitability, desired service life expectations and particular exposure conditions.

Tanalised® E pressure treated timber has a long life expectancy and it is appropriate to use metal fixings and fastenings that will have a comparable length of life.

- Performance of metal fixings is influenced by the environmental conditions including moisture content, temperature, atmospheric pollution, proximity to coastal locations, timber species, as well as the thickness of any galvanising.
- It is good practice to drill pilot holes for fixings, in particular when screwing near the edge or end of a piece of timber.
- Attach connectors/fasteners/fittings after preservative treatment and only after the timber has re-dried to less than 20% moisture content.
- In addition to the above, for internal building timbers, e.g. trussed rafters, it will be necessary to re-dry the timber to a moisture content of 22% or less before assembly and to maintain the timber in this condition during storage and delivery to site as recommended in BS 5268 Part 3 Section 5.5.
- Galvanising provides a sacrificial zinc barrier. It is important that the specifier is aware that there are many thicknesses of galvanised coating available and the thicker the galvanised coating the longer the expected service life. The level of galvanising should be commensurate with the end use.
- Electroplated metals only provide a thin coating and are unsuitable for exterior applications.
- For exterior use, where the timber is likely to become wet and a long service life is required, greater corrosion resistance will be achieved with use of austenitic grade 316 stainless steel, silicone bronze or copper in preference to other types of fittings.
- To prevent bimetallic corrosion between fastener/connector components it is important not to mix metals in the same connection. DO NOT mix galvanised and stainless steel components.
- Refer to BS 5534:2003 Code of Practice for slating and tiling. Nails for use with slates should be of copper, phosphor or silicon bronze. Nails for use with tiles should be austenitic stainless steel, copper, phosphor or silicon bronze. The use of aluminium and galvanised steel nails is NOT recommended.

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## METAL FIXINGS & FITTINGS (continued)

- Eurocode 5 (BS EN 1995-1-1: 2004) gives minimum specifications for material protection against corrosion for fasteners and fixings used in internal building, low hazard situations (Use Classes 1 and 2) where the moisture content of the treated timber will not exceed 20% throughout its service life.
- Direct contact with aluminium should be avoided where the moisture content will exceed 18% or where condensation is possible.
- Where the use of aluminium is unavoidable in situations where moisture content will exceed 18%, it **must** be separated from the timber using a bituminous, epoxy or other impervious barrier or electrically insulating coating. The use of nylon/plastic washers is recommended.
- Fixings and fastenings used on safety critical and load bearing components should be inspected regularly and replaced if necessary.
- Specialist advice should be obtained in the selection of connectors for use in swimming pool buildings. Detailed advice is contained in the Nickel Development Institute document Stainless Steel in Swimming Pool Buildings 1995.

## TYPICAL APPLICATIONS

It is advisable to consult with Arch Timber Protection using the contact details given in this document if in doubt about any particular area of application or compliance with other relevant standards or specifications.

This list, which is not totally exhaustive, gives an indication of the range of timbers and timber based products which can be treated with Tanalith® E wood preservative. The treatment process parameters are varied to match the end use of the timber and its species. It is therefore extremely important that you make sure that the timber has been treated to the correct specification. The use of Tanalised® Extra water repellent treated timber may be advisable for certain end use applications, such as decking, cladding and playground equipment. Contact the Arch Timber Protection Advisory Service for further information, if required.

When specifying timber for exterior situations, either treated or untreated, consideration should be given to the propensity of the material to stain light coloured adjacent faces, such as render, paving flags or coated timber surfaces, with its natural extractives during the weathering process. This staining effect can be highlighted where Tanatone® treated timber has been selected, although the potential for this to occur does reduce with time. Where used in this external environment, it is highly recommended that contact between the timber and these surfaces is eliminated by design, in order to prevent surface discolouration.

The treated timber used must also be dried in line with the advice listed within this document.

### BUILDING

Structural elements and general timbers in domestic, commercial and public buildings, such as wall frames, sole plates, beams, joists, sub-floors, roof timbers, external joinery, battens, cladding, roof shingles.

### GARDEN & LANDSCAPING

Decking systems, pergolas, gazebos, bridges, summer houses, soil retaining walls, timbers around fish ponds (but not in direct contact with the water), playground equipment, lawn edging, fencing, picnic benches and tables, way signs and litter bins. For certain applications, particularly with thin cladding type timbers, it may be appropriate to use a brush-on water repellent or Tanalised® Extra treated timber which has a built-in water repellent. Contact the Arch Timber Protection Advisory Service for further information, if required.

### AGRICULTURAL & HORTICULTURAL

Earth retaining vegetable beds (use of pressure treated timber does not affect organic status), fruit tree stakes, hop poles, vine stakes. Contact the Arch Timber Protection Advisory Service for further information, if required.

### ENCLOSURES, FENCING ETC

Natural round, machine turned and square sawn fence posts, rails, droppers, gates and gate posts, stiles and highway, farm and security fencing.

### TRANSPORT

Floors and other timbers for railway and road vehicles, container floors and linings, packing cases, cable drums and hatch covers (Australian Quarantine Regulations).

### ENGINEERING

Transmission poles, railway sleepers, decking, shells, gantries, bridges and bridge decks, handrails, cable ducting and sound barriers.

## HEALTH, SAFETY, HANDLING AND DISPOSAL

Reference should be made to the Consumer Information Sheet for Tanalised® E pressure treated timber and plywood. This is available from the Arch Timber Protection Advisory Service. The Consumer Information Sheet is also relevant for COSHH purposes.

## FURTHER INFORMATION

Consumer Information Sheet for Tanalised® E pressure treated timber.

Specification Guide for Tanalised® E pressure treated timber.

For further information please contact Arch Timber Protection using the contact details below.

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Responsible Care

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