



CHOOSE THE CORRECT HAZARD (H) CLASS:

- H2 – **Low Hazard:** Inside above ground
- H3 – **Moderate Hazard:** Outside above ground
- H4 – **High Hazard:** Outside in ground
- H5 – **High Hazard:** Outside in contact with heavy wet soil or in fresh water
- H6 – **High Hazard:** Prolonged immersion in sea water



FOR MORE INFORMATION ON ANY ASPECT RELATED TO TREATED TIMBER PRODUCTS AND THE CORRECT USE OF TREATED TIMBER, OR WHERE TO CONTACT SAWPA MEMBERS, PLEASE CONTACT:

Tel: 011 974 1061
sawpa@global.co.za
www.sawpa.org.za





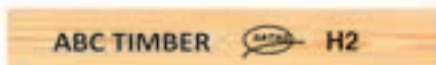
South African Wood Preservers Association

Promoting timber treatment and treated timber products
Tel: 011 974 1061 or E-mail: sawpa@global.co.za
Website: www.sawpa.org.za

WHAT YOU NEED TO KNOW WHEN BUYING AND USING PRESERVATIVE TREATED TIMBER

IN SOUTH AFRICA TREATED TIMBER IS BY LAW REQUIRED TO COMPLY WITH NATIONAL AND COMPULSORY SPECIFICATIONS AND MUST BEAR MARKING CONTAINING THE FOLLOWING INFORMATION

POLES (Metal marker) **SAWN TIMBER (Ink stamp)**



HOW TO PLANT A POLE



Poles intended for planting in the ground must be purchased at required lengths. Never plant a cross-cut end of a treated pole or post into the ground as this will expose the untreated heartwood to fungal and termite attack resulting in premature failure.

CHOOSE THE CORRECT HAZARD (H) CLASS



H6 - High Hazard: Prolonged immersion in sea water (Marine piling, jetty cross-bracing, landing steps, retaining walls etc.)



H5 - High Hazard: Outside in contact with heavy wet soil or in fresh water (piling, substructure for walkways & jetties, vineyards etc.)



H4 - High Hazard: Outside in ground, subject to periodic wetting and leaching (fencing and structural posts, landscaping, stakes, pergolas, etc).



H3 - Moderate Hazard: Outside above ground, subject to periodic wetting and leaching (cladding, decking, stairs, balustrades, log homes, etc).



H2 - Low Hazard: Inside above ground, protected from wetting and leaching (roof trusses, framing, panelling, laminated beams, flooring, etc).

CROSS CUT ENDS



All machining, cutting or drilling of preservative treated timber should be done prior to preservative impregnation. Areas exposed after impregnation due to cross cutting etc., must be treated by liberally applying a suitable paint-on or brush-on remedial or supplemental preservative (excluding ground contact).

Chemical distributors

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Lonza Wood Protection is a Lonza company. Lonza is one of the world's leading suppliers to the pharmaceutical, healthcare, life science and microbial control industries. Lonza Wood Protection supplies a full range of water-borne and solvent-borne wood preservatives, as well as short-term speciality anti-sapstain and supplementary wood preservative products. These wood preservative products are marketed under the well-known Tanalised™, Vacsol™, Weatherwood™, and Antiblu™ treated wood brands. Lonza is the first wood preservative supplier to launch a guarantee programme for wood products treated with its wood preservatives (see: www.tanalised.com/sa), and to achieve third party Green Building rating assessment (see: www.ecospecifier.co.za) for Tanalised™ E and Vacsol™ Azure wood preservative treated wood. The Tanalised™ treated wood brand has become a household name in South Africa, through interaction at all levels of the preservative treated wood supply chain – treated timber producers, merchants, architects and building contractors

FFS Refiners

- The coal tar creosote solution sold by FFS Refiners boasts a high level of residue and wax. This contributes to better retention of the creosote in timber and less movement of the wood due to wetting and drying cycles. The higher water repellence, caused by the higher wax and residue content in FFS creosote, results in less wood checking for in-service timber. This creosote is sold under the brand name WP1 (Wood Preservative 1) and complies with SABS specifications
- Creosote is one of the oldest used timber preservatives and is used in transmission poles (electricity and telephone), playground structures, outdoor decking, fencing poles and vineyard applications. It is an extremely cost-effective preservative and if applied properly will protect wood for 20 to 100 years. Creosote is registered as a fungicide, insecticide, miticide and sporicide
- Research has shown that the effectiveness of creosote as a wood preservative is predominantly directly related to the quantity of preservative retained in the wood over its life. Thus the primary treatment objective for maximum service life is a high retention level of creosote that at least penetrates through the sapwood of hardwoods and to sufficient depth in softwoods. However, creosote retention is required not only in initial treatment but must persist over time. To achieve long-term retention of the creosote in the timber, the creosote formulation has been shown to require sufficient residue to reduce the amount of creosote that evaporates out of the timber over time

- To incorporate the body of knowledge and research done on coal tar creosote, FFS developed a coal tar creosote blend for conditions suited to hot areas as found in Africa. The performance of the FFS blend will also be superior to most European blends in both wet and dry conditions

North Safety Products Africa Timberlife

- All our main line products are "Proudly and uniquely Timberlife". This means that all the formulations have been developed in-house and, to date, cover a product range of over 45 different timber treatment chemicals that have been successfully commercialised
- At present, Timberlife is the only local company, and one of only a very few companies in the world that manufactures and supplies a comprehensive range of wood preserving, wood protection and wood finishing products. In this particular market segment of the timber industry, Timberlife therefore services the entire pipeline. Broadly speaking, this includes the timber processors (sawmillers, pole treaters, etc), timber product manufacturers, (window and door manufacturers joinery and furniture manufacturers, etc) as well as timber end-users (deck builders, log home builders, thatchers, DIY-ers, etc)

Chemical manufacturers - alkaline copper quaternary (ACQ)

Dolphin Bay Chemicals (Pty) Ltd

- Dolphin Bay is a leading supplier of wood preservative chemicals in Africa, providing these products for the treatment of sawn timber, transmission poles and poles used in construction, telecommunications, and agriculture. We supply products across South Africa and to a growing number of other African countries.
- Established in 1996, we quickly became a leading supplier of wood preservatives in Africa. Our head office and factories are in South Africa, and we own two of the three factories in Africa that produce wood preservatives – which gives us the largest production capacity on the continent. We offer guarantees on our treatments and a wide range of value-added services to our clients. These services include plant optimisation, operator training, health and safety audits, waste removal and; installation and commissioning of timber treatment plants. We are constantly innovating to expand and improve these services.
- Manufacturers of Permacure CCA, Permanol F (P-TBIN) and "new generation" alkaline copper quaternary (ACQ) wood preservatives are being introduced in global markets as Permacure ACQ – 223, Permacure ACQ – 224 and Permacure.
- Permacure CCA, Permanol F and Permacure ACQ is applied by conventional vacuum pressure methods to provide protection to wood both in-and above the ground against decay fungi, wood boring insects and termites.

Chemical manufacturers - anti-sapstain treatment

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Antiblu™ 375 is an internationally accepted copper-based anti-sapstain protection product for both logs and sawn timber offering short-term protection against blue stain and mould. Applied through spraying, dipping or by using a deluge process

Dolphin Bay Chemicals (Pty) Ltd

- Permafinish is an especially formulated water dispersible liquid concentrate, which contains three active ingredients that prevents sapstain and mould growth on freshly sawn (green) pine timber

Timberlife

- Blupro ST is a specially formulated water dispersible liquid concentrate, which contains three active ingredients to prevent sapstain and mould growth on freshly sawn (green) pine timber
- Bipro ST is a concentrated, water dispersible liquid formulation which contains four specifically blended insecticidal and fungicidal active ingredients to provide wide-spectrum protection against wood borer attack and sapstain and mould growth on freshly sawn (green) timber

Chemical manufacturers - borates

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Borolith™ is a highly soluble borate used for the dip diffusion treatment of wet timber or vacuum pressure treatment of dry sawn timber or poles, providing H2 protection as per SANS 10005
- Totim® B is a combination water-based/wax emulsion wood preservative for protection of green (wet) timber against insect and fungal attack in H2 interior above ground and H3 exterior above ground applications. Applied by dip diffusion – ideal for onsite applications

Dolphin Bay Chemicals (Pty) Ltd

- Permabore is a water-soluble wood preservative powder consisting of inorganic borates for permanent protection against wood decay, fungi, wood-boring insects and dry wood termites, when applied in accordance with SANS code of practice 10005. Treated timber is also suitable for exterior non-ground contact (Hazard Class H2 and H3), provided that the timber is continuously protected by a suitable well-maintained coating

Timberlife

- Topro 94 is a water-soluble wood preservative powder consisting of inorganic borates for permanent protection against wood decay, fungi, wood-boring insects and drywood termites when applied in accordance with SANS 10005. Treated timber is also suitable for exterior non-ground contact (Hazard Class H2 and H3), provided that a suitable well-maintained coating continuously protects the timber

Treatment and preservatives

Chemical manufacturers - colouring agents

Timberlife

- Stain is a superior organic solvent-based wood stain consisting of high-quality transparent iron oxides that do not hide the grain of the timber and impart UV protection to timber under exterior conditions. Stain is particularly suitable for exterior applications, ie wooden decks, doors, fences, frames, facias, etc. After application, any wood coating such as Nuwood, Satinwood or Colour-Cote can be used as a final finish
- Timber-Tones are penetrating wood colouring stains that consist of high-quality dyestuffs dissolved in organic solvents. Timber-Tones are available in a variety of typical wood shades as well as high-intensity colour tones to enhance the natural beauty of the wood grain. After application any wood coating such as "Ultracare Gold", "Color-Cote Am" or "Furni-Floor" can be used as a final protective finish. Ideal for use on all interior timbers such as wooden furniture, wooden floors, doors, skirting board, cupboards, etc to stain such timbers to a darker shade before final finishing. Not recommended for use on exterior timbers exposed to direct sunlight

Chemical manufacturers - copper azoles

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Tanalith™ E is a new generation water-borne preservative, used extensively internationally, and consists of recycled copper and azole biocides offering comprehensive long-term protection against insect attack and wood decay in H2 through to H5 hazard classes. Treated wood is marketed as Tanalised™ E treated wood and carries a 25-year treatment guarantee (sawn timber) and carries a 15-year guarantee on poles underwritten by Lonza Wood Protection. (see: www.tanalised.co.za/guarantee)
- It is ideal for indirect human contact applications such as decking, jungle gyms and outdoor furniture. Tanalith™ E fulfils the requirements of various international bodies such as the USA Environmental Protection Agency (EPA), Australian Pesticide and Veterinary Medicines Authority (APVMA) and European Community directives. Tanalised™ E treated wood is third party verified as likely to contribute to the achievement of Green Building rating tool credits (see www.ecospecifier.co.za)

Chemical manufacturers - copper chrome arsenate (CCA)

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Tanalith™ C is the traditional water-borne inorganic CCA formulation that is vacuum pressure impregnated into the

timber and fixes into the wood structure offering long-term protection against wood borer, termites and wood decay. Tanalised™ C treated timber carries a 50-year treatment guarantee for H2 and a 25-year treatment guarantee for H3 structural sawn timber applications underwritten by Lonza Wood Protection, against insect attack and wood decay. A 25-year treatment guarantee is offered by Lonza Wood Protection for H2 and H3 applications for poles and a 15-year guarantee for poles treated for H4 and certain H5 applications (see: www.tanalised.co.za/guarantee)

Bedrock MS

- Dolphin Bay Chemicals (Pty) Ltd Permacure CCA, is a waterborne wood preservative providing permanent wood protection against fungal decay, wood-boring insects and termites when applied by vacuum-pressure impregnation in accordance with SANS Code of Practice 10005 or similar AWPAs standards. Timber treated with Permacure CCA can be used where there is low to very high exposure to the elements and weathering which according to SANS describes this as exposure levels H2 to H5. Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark for more information please visit our website <http://www.dolphinbay.co.za/our-products/cca/>

Midlands Spraychem Mintroad Sawmills Rudamans Nelspruit

Timberlife

- Chromac is a water-borne liquid concentrate containing copper chromium and arsenic oxides for use as a permanent wood preservative against wood decay fungi, wood-boring insect, drywood termites, subterranean termites and marine borers and is suitable for use under all hazard classes when applied to timber in accordance with SANS 10005

Chemical manufacturers - creosote

Arcelor Mittal Coke and Chemicals

- Creosote blend (HTC) - a mixture of distillates from crude tar, manufactured from a high coking value coking process with a high flash point and high residue content. Conforms to SANS 538 2007

FFS Refiners

- The coal tar creosote solution sold by FFS Refiners boasts a high level of residue and wax. This contributes to better retention of the creosote in timber and less movement of the wood due to wetting and drying cycles. The higher water repellence, caused by the higher wax and residue content in FFS creosote, results in less wood checking for in-service timber. This creosote is sold under the brand name WP1 (Wood Preservative 1) and complies with SABS specifications
- Creosote is one of the oldest used timber preservatives and is used in transmission poles (electricity and telephone), playground structures, outdoor decking, fencing poles and

vineyard applications. It is an extremely cost-effective preservative and if applied properly will protect wood for 20 to 100 years. Creosote is registered as a fungicide, insecticide, miticide and sporicide

- Research has shown that the effectiveness of creosote as a wood preservative is predominantly directly related to the quantity of preservative retained in the wood over its life. Thus the primary treatment objective for maximum service life is a high retention level of creosote that at least penetrates through the sapwood of hardwoods and to sufficient depth in softwoods. However, creosote retention is required not only in initial treatment but must persist over time. To achieve long-term retention of the creosote in the timber, the creosote formulation has been shown to require sufficient residue to reduce the amount of creosote that evaporates out of the timber over time
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Mintroad Sawmills

Chemical manufacturers - deltamethrin

Bayer CropScience

Chemical manufacturers - end-sealing products

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Tanalised™ Enseal™ Green is a penetrating solvent-based sealer offering insecticidal and fungicidal protection ideal for end sealing cut-ends of CCA or copper - azole treated timber. The product is green in colour and available as a brush on product form. Enseal™ Green can also be used for remedial protection of existing timber installations
- Tanalised™ Enseal™ Clear is a penetrating solvent-based sealer offering insecticidal and fungicidal protection ideal for end sealing cut-ends of Vacsol™ Azure or TBTN (solvent) or Boron-treated timber. Enseal™ Clear is honey coloured and is available as a brush on product form. Enseal™ Clear can also be used for remedial protection of existing timber installations

Dolphin Bay Chemicals (Pty) Ltd

- WaterGuard Wax consists of oil-soluble hydrocarbons which protect wood from moisture and can prevent the leaching of water-soluble preservatives after pressure impregnation.
- Dolphin Bay's WaterGuard range can be applied to Permacure CCA, Permacure ACQ and Permalon P-TBTN and Permabore Boron. In all these cases the WaterGuard Wax is added at the

treatment plant, as it needs to be introduced with the timber preservative via vacuum-pressure impregnation. WaterGuard Wax provides treated timber with additional weathering protection.

- Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark

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Rystix Sales

- Rystix Timbaseal 501 – wax-based sealer for prevention of end splitting of timber and poles

Timberlife

- Supro EM is a ready-for-use, emulsion-based sealant for use on green (freshly cut) timber to prevent excessive checking and end splitting during drying. It has a milky white appearance and upon drying, the layer becomes translucent

Chemical manufacturers – flame retardants

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Lonza provides a boron-based fire retardant wood preservative used to treat poles and sawn timber for H2 applications

Fire Fighting Equipment Africa Timberlife

- Flambor is a dual-purpose chemical system that contains both a borate-based wood preservative (Topro 94) and phosphate-based fire retardant (Fyrcon) for timber treatment. Flambor provides permanent and wide-spectrum protection against biological attack and also imparts a high degree of fire retardation to timber treated by pressure impregnation

Chemical manufacturers – insecticides

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- AntiboreTM C100 is a water soluble-based insecticide for short to medium-term protection of felled logs, sawn timber, hardwood timber against wood borer during seasoning or air-drying



WOOD CREOSOTE SUPPLIERS WITH A DIFFERENCE

FFS Refiners' superior grade of creosote solution wood preservative (WP1) with high residue content and wax, provides long-term retention with less migration, less evaporation and a drier finish.



This makes our product ideally suitable to the harsh African conditions, giving exceptional protection against termite and fungal attack

Product specification to SABS 1290:2005

Website: www.ffi-refiners.com
E-mail: ffi@ffi.co.za
Tel: 031 – 459 5300 / Fax: 031 – 459 5326

Chemical manufacturers - insecticides (continued)

Bayer CropScience

FFS Refiners

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Timberlife

- CuGard 20 is an organic solvent-based, ready-for-use formulation for brush-on timber treatment. It contains copper naphthenate as active ingredient, which is well known for its pesticidal and fungicidal efficacy. After absorption into the timber and subsequent drying the timber surface can be painted over by most organic-based coatings. It also affords a certain degree of water repellency; leach resistance and fixation to the wood structure. CuGard 20 stains timber to a greenish colour
- CTX 108 is a ready-to-use formulation containing specifically blended insecticidal and fungicidal active ingredients dissolved in organic solvent. It provides superficial protection to seasoned timber against fungal attack, woodborers and (CTX 108) with added protection against subterranean

termites. On application, the organic solvent provides a degree of penetration of the active ingredients into the wood structure and ensures rapid drying of the treated surfaces. After drying, any coating/finish can be applied on the treated wood surface

Chemical manufacturers - light organic solvent preservatives (LOSP)

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- VacsoTM Azure is a new generation metal-free solvent-based treatment product offering protection against insect attack and fungal decay in H2 (interior above-ground) and H3 (exterior above-ground) appearance grade applications as per SANS 10005. VacsoTM treated timber carries a 25-year treatment guarantee underwritten by Lonza Wood Protection against insect attack and wood decay in H2 structural applications (see: www.tanalised.co.za/guarantee). VacsoTM Azure treated wood is third party verified as likely to contribute to the achievement of Green Building rating tool credit. (see www.ecospecifier.co.za)

Dolphin Bay Chemicals (Pty) Ltd

- Permanol P-TBTN is an industrial LOSP (low organic solvent preservative), protecting wood against wood-destroying fungi, insect larvae and termites. Permanol P-TBTN is a hydrocarbon soluble wood preservative which has the active ingredients tributyltin-naphthenate (TBTN) and Permathrin.
- Permanol P-TBTN can be used for hazard classes H1 to H3 and needs to be applied by vacuum-pressure impregnation.
- PWP is a ready to use wood preservative formulated to protect internal joinery and timber not in contact with the ground against decay and insect borers. It is non-corrosive, does not stain. It is manufactured as a DIY product, which can be sprayed or painted on
- PWP - F is a ready to use wood preservative formulated to protect internal joinery and timber not in contact with the ground against decay and insect borers. It is non-corrosive, does not stain. It is manufactured as a DIY product, which can be sprayed or painted on
- Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark

Chemical manufacturers - mouldicides

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

FFS Refiners

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Timberlife

Chemical manufacturers - sealants

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The Pekay Group

- Hot melt wood adhesives
- Finger-jointing adhesives

Timberlife

- Supro EM is a ready-to-use, emulsion-based sealant for use on green (freshly cut) timber to prevent excessive checking and end splitting during drying. It has a milky white appearance and upon drying, the layer becomes translucent. Supro EM is also available with colour additives for visual identification

Chemical manufacturers - surface coatings

FFS Refiners

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Rystix Sales

- Rystix Timbacare range of water-based and solvent-based sealers and coatings for interior and exterior timber

Timberlife

- Satinwood 28/28 Base is a solvent-based water repellent stain finish that contains high-quality, colour fast transparent iron oxide pigments that will not leach or fade under exterior conditions. The penetrating water repellent oil and wax components in the formulation nourish and protect wood against the elements. Satinwood 28/28 Base contains a fungicidal additive that provides added protection to wood against mould and fungal staining. It also contains an insecticide for borer and termite control. Satinwood 28/28 Base enhances the natural beauty of wood and dries to a satin-like, translucent finish that does not flake or peel. Most suitable for applications such as wooden doors, window frames, decks, cladding, log homes, outdoor furniture, etc
- Colour-Cote AM is a high-performance, emulsion-based water repellent and decorative wood finish for interior and exterior applications, also available in various colours. The translucent finish enhances the natural beauty of the wood. Colouring agents consist of lightfast pigments, which will not leach or fade. It is quick drying and odourless. Colour-Cote AM contains acrylic resins plus UV absorbers and light stabilisers, which reduce the harmful effects of the sun on wood
- Satinwood Gloss is an exterior/interior solvent-based penetrating sealer that provides a water repellent, high sheen/medium gloss finish that enhances the natural colour and beauty of wood. It contains a unique combination of high-quality drying oils, resins and water repellent wax components as well as a fungicidal additive, dissolved in a formulated solvent carrier, that deeply penetrates, nourishes and stabilises the wood to ensure exceptional protection against water uptake and the elements. Satinwood Gloss is ideal for use on wooden garden furniture, window and doorframes, doors, balustrades, etc where a high sheen, medium gloss finish is preferred. Not recommended for use on high traffic areas such as wooden decks and floors
- Furni Floor is a clear, water-borne varnish that provides a durable gloss finish with excellent wear resistance for use on interior wooden floors and timbers. It is quick drying and virtually odourless. After full curing, it provides a tough but flexible finish that resists scratching, staining and seals wood against water penetration. It is solvent free and non-flammable. Furni Floor is therefore particularly suitable for use as a high-quality clear coating on

interior wooden floors, furniture, bar tops, stairs and stair railings, skirting boards, cladding, cupboards, etc

- UltraCare Gold – it is a high-quality, penetrating water repellent sealer that has been specially formulated to protect outdoor timbers against the harsh South African climatic conditions. It contains a unique blend of high-quality drying oils, resins and water repellent wax components as well as high-performance UV absorbers and light stabilisers. These ingredients are dissolved in a formulated solvent carrier to deep penetrate, nourish and stabilise the wood and ensure exceptional protection against water uptake and UV degradation caused by sunlight exposure. It dries to a clear, sheen finish that enhances the natural colour and beauty of wood. UltraCare Gold also contains insecticidal and fungicidal additives that provide added protection against woodborer and termite attack as well as mould growth and fungal discoloration, respectively
- Khuni sealer – it is an oil/wax-based penetrating sealer that protects raw (uncoated) wood against water ingress, surface degradation and contamination. The high-quality blend of drying oils and water repellent wax components deeply penetrates, stabilises and nourishes the wood. It therefore acts as a transit stabiliser and protective sealer that prevents excessive checking and splitting of pre-manufactured timbers during transport and storage and also repels waste splashes during building construction. Khuni sealer can also be used as a final finish on wood provided that a second, preferably a third coat is applied 24 hours after applying the first coat. It, however, does not provide protection against fungal and insect attack

Chemical manufacturers - TAN - E

Mintroad Sawmills

Chemical manufacturers - timber cleaners

Dolphin Bay Chemicals (Pty) Ltd Timberlife

- Timbrite Rfu is a ready-for-use product, specially formulated to disinfect and clean timber from fungal stains caused by mould fungi and to remove discoloration caused by exposure to sunlight and the elements. Also removes dirt and grime. Timbrite Rfu is not a paint or varnish remover. Any coating must be removed with a paint stripper before application of Timbrite Rfu. Timbrite Rfu is ideal for cleaning any timber that has been discoloured by mould or stain fungi, eg bottom parts of doors, neglected outdoor furniture, etc
- Indeg is a ready-for-use product that dissolves and removes old oily and waxy substances from previously finished wood. It also cleans timber from all forms of dirt and grime. Indeg is not a paint or varnish remover. Any coating must be

Chemical manufacturers - timber cleaners (continued)

removed with a paint stripper before application of Indeg. Indeg is ideal for removing old oily and/or wax finishes and dirt from wooden products such as poles, doors, window frames, decks, wendy houses, furniture, etc. Can also be used to remove oil stains from paving and concrete

- Deckwash is a water-based cleaning agent with disinfectant, biocidal and water repellent properties for maintenance of sealed and oiled outdoor timbers such as wooden decks, garden furniture, etc. Apart from cleaning and sterilising wooden surfaces, Deckwash also provides broad-spectrum protection against mould fungi, algae and bacteria whilst replenishing water repellent properties of wood coatings/finishes

Chemical manufacturers - tributyltin naphthenate (TBTN)

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Vacsol™ Azure is a new generation solvent-based treatment product offering protection against insect attack and fungal decay in H2 (interior above-ground) and H3 (exterior above-ground) appearance grade applications as per SANS 10005. Vacsol™ Azure treated timber carries a 25-year treatment guarantee underwritten by Lonza Wood Protection against insect attack and wood decay in H2 structural applications. The treated wood has been third party verified as likely to contribute to the achievement of Green Building rating tool credits and is treated with organic azole fungicides and pyrethroids-based wood preservatives (see: www.ecospecifier.co.za)

Dolphin Bay Chemicals (Pty) Ltd

- Permanol P-TBTN is an industrial LOSP (low organic solvent preservative), protecting wood against wood-destroying fungi, insect larvae and termites. Permanol P-TBTN is a hydrocarbon soluble wood preservative which has the active ingredients tributyltin-naphthenate (TBTN) and Permethrin.
- Permanol P-TBTN can be used for hazard classes H1 to H3 and needs to be applied by vacuum-pressure impregnation.
- PWP - F is a ready to use wood preservative formulated to protect internal joinery and timber not in contact with the ground against decay and insect borers. It is non-corrosive, does not stain. It is manufactured as a DIY product, which can be sprayed or painted on
- Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark

Chemical manufacturers - tributyltin oxide (TBTO)

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection Mintroad Sawmills

Chemical manufacturers - water repellents

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Weatherwood™ is a water-based wax emulsion additive for Tanalith™ C (CCA). It provides water repellency properties and reduces weathering (cracking, splitting and cupping). A 15-year treatment guarantee is offered on poles treated with a combination of Tanalith™ C and Weatherwood™ additive

Dolphin Bay Chemicals (Pty) Ltd

- WaterGuard is a wax emulsion-based product. It is an additive to Permasure CCA or Permabore to produce water repellent qualities. By using WaterGuard it provides dimensional stability and weathering properties
- Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark

FFS Refiners

- The coal tar creosote solution sold by FFS Refiners boasts a high level of residue and wax. This contributes to better retention of the creosote in timber and less movement of the wood due to wetting and drying cycles. The higher water repellence, caused by the higher wax and residue content in FFS creosote, results in less wood checking for in-service timber. This creosote is sold under the brand name WP1 (Wood Preservative 1) and complies with SABS specifications
- Creosote is one of the oldest used timber preservatives and is used in transmission poles (electricity and telephone), playground structures, outdoor decking, fencing poles and vineyard applications. It is an extremely cost-effective preservative and if applied properly will protect wood for 20 to 100 years. Creosote is registered as a fungicide, insecticide, miticide and sporicide
- Research has shown that the effectiveness of creosote as a wood preservative is predominantly directly related to the quantity of preservative retained in the wood over its life. Thus the primary treatment objective for maximum service life is a high retention level of creosote that at least penetrates through the sapwood of hardwoods and to sufficient depth in softwoods. However, creosote retention is required not only in initial treatment but must persist over time. To achieve long-term retention of the creosote in the timber, the creosote formulation has been shown to require sufficient residue to reduce the amount of creosote that evaporates out of the timber over time

- To incorporate the body of knowledge and research done on coal tar creosote, FFS developed a coal tar creosote blend for conditions suited to hot areas as found in Africa. The performance of the FFS blend will also be superior to most European blends in both wet and dry conditions

Timberlife

- Nuwood WR/WRN is an organic solvent-based water repellent finish for wood that gives effective protection against the elements. Nuwood WR/WRN is a penetrating formula that eliminates cracking and flaking of the finish. It provides a honey coloured translucent finish to enhance the natural beauty of the wood. Nuwood WR/WRN allows the wood to breathe, preventing the build-up of hazardous moisture and reducing the possibility of decay. Nuwood WRN also contains a fungicide that provides added protection against blue stain, surface mould and fungal attack. Nuwood WR/WRN is particularly suitable for wendy houses, log homes, decks, joinery, cladding and fencing and is also effective on rough-sawn timber

Chemical manufacturers - zinc naphthenate

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

Chemical transfer distributors

Hydramatics Control Equipment

Laboratory equipment

Alternative Structures

- Ohaus moisture balance for measuring moisture content in variety of materials

Dolphin Bay Chemicals (Pty) Ltd

- Sourcing of any laboratory equipment necessary for your business to operate at its optimal. Suppliers of basic equipment such as Erlenmeyer flasks to specialised equipment such as moisture metres and much more.

Hydramatics Control Equipment

Plant manufacture and workshop services

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- We provide total engineering support, from the design and implementation of new treatment facilities to process and plant engineering upgrades, as well as assisting customers to source specific equipment. We also provide a procurement service for day-to-day plant spares such as gaskets. Our turnkey plant project management for treatment plant installation is a specialty service to the industry

Lonza

Lonza Wood Protection

The Treated Wood Specified by the Experts™



The primary objective of wood preservation is to provide long-term protection against wood borer, termites and fungal decay in order to extend the performance of wood beyond what nature intended.

Protect • Preserve • Prolong



PRESSURE TREATED WOOD

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection
16 Indus Road, Marburg • Port Shepstone
PO Box 54344, Marburg, 4252 • South Africa
Tel: +27 (0)39 315 8400 • Fax: +27 (0)39 315 8408
E-mail: info@tanalised.co.za

Find out more on www.tanalised.co.za

Treatment and preservatives

Plant manufacture and workshop services (continued)

Dolphin Bay Chemicals (Pty)Ltd

- Our engineering division is able to design, commission and oversee the construction of pressure-impregnation treatment plants for your specific needs.
- We then install these Permasure treatment plants, ensuring that their operations meet our high standards. We offer follow-up operator training, to ensure that your plant works at maximum productivity.
- We are also able to adapt existing plants for new purposes, including the use of different wood treatments

Pole protection

Alternative Structures

- Anti-split plates round and rectangular for the treated pole market

FFS Refiners

- The coal tar creosote solution sold by FFS Refiners boasts a high level of residue and wax. This contributes to better retention of the creosote in timber and less movement of the wood due to wetting and drying cycles. The higher water repellence, caused by the higher wax and residue content in FFS creosote, results in less wood checking for in-service timber. This creosote is sold under the brand name WP1 (Wood Preservative 1) and complies with SABS specifications
- Creosote is one of the oldest used timber preservatives and is used in transmission poles (electricity and telephone), playground structures, outdoor decking, fencing poles and vineyard applications. It is an extremely cost-effective preservative and if applied properly will protect wood for 20 to 100 years. Creosote is registered as a fungicide, insecticide, miticide and sporicide
- Research has shown that the effectiveness of creosote as a wood preservative is predominantly directly related to the quantity of preservative retained in the wood over its life. Thus the primary treatment objective for maximum service life is a high retention level of creosote that at least penetrates through the sapwood of hardwoods and to sufficient depth in softwoods. However, creosote retention is required not only in initial treatment but must persist over time. To achieve long-term retention of the creosote in the timber, the creosote formulation has been shown to require sufficient residue to reduce the amount of creosote that evaporates out of the timber over time
- To incorporate the body of knowledge and research done on coal tar creosote, FFS developed a coal tar creosote blend for conditions suited to hot areas as found in Africa. The performance of the FFS blend will also be superior to most European blends in both wet and dry conditions

Postsaver - Polesaver

- Postsaver fence post - composite barrier sleeve for fence post, agricultural and construction wooden posts. 20 year guarantee

- Polesaver - utility poles - composite barrier sleeve for utility poles. 40 year guarantee

Timberlife

- Eco Rod is a solid diffusible boron-based wood preserving rod for remedial and supplemental treatment that protects the internal portion of treated wooden poles at the critical ground line area and timber structures such as vineyard poles, fence poles, large wooden beams, etc. The Eco Rod is formulated to penetrate heartwood and sapwood of timber by means of diffusion. Moisture levels over 20% in wood where the chemical rods have been inserted will start the diffusion process. The treatment controls and provides supplemental protection against internal fungal decay. The boron-based active ingredient is safe to use, environmentally acceptable and is an internationally recognised wood preservative
- Rempro is ready-for-use, thixotropic wood preserving paste, packed in a wrap applicator, for remedial treatment of the external ground line portion of treated wooden poles in service (Registration No. L 5261, Act 36 of 1947). Rempro is formulated to penetrate timber and provides supplemented protection to the critical external ground line area of standing poles against fungal decay, thereby extending the service life of wooden poles

Pole protection - flame retardants

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Lonza provides a dual purpose borate-based wood preservative and phosphate-based fire retardant providing wide spectrum protection against biological degradation as well as a high degree of fire retardation

Dolphin Bay Chemicals (Pty) Ltd

Timberlife

- Flambor is a dual-purpose chemical system, which contains both a borate-based wood preservative (Topro 94) and phosphate-based fire retardant (Fyrcon) for timber treatment. Flambor provides permanent and wide-spectrum protection against biological attack and also imparts a high degree of fire retardation to timber treated by pressure impregnation
- Thatchbor FR is a dual-purpose aqueous chemical system, which contains both a fire retardant and borate-based biological preservative. Boron compounds for preservation are more widely preferred by international environmentalists. In addition, borates are known fire retardants and because of synergism between the preservative and fire retardant active ingredients, excellent fire retardancy is obtained

Process control software

Dolphin Bay Chemicals (Pty)Ltd

- QUADRA is a digital timber treatment book that replaces the four paper-based books used by plants to maintain records of their operations. These records are required for auditing of a plant's

compliance with South African National Standards for timber treatment. QUADRA obviates the need for cumbersome manual data recording and treatment calculations, and provides easy access to all records of operations.

Protective clothing

Dolphin Bay Chemicals (Pty) Ltd

- Suppliers of all protective equipment - from footwear to eyewear. Safety is non-negotiable and we therefore source the best equipment available at the most reasonable cost

Investage 9 t/a Allan Bros

Timber cleaners

Barry Collier & Co

Timberlife

- Timbrite Rfu is a ready-to-use product, specially formulated to disinfect and clean timber from fungal stains caused by mould fungi and to remove discolouration caused by exposure to sunlight and the elements. It also removes dirt and grime. Timbrite Rfu is not a paint or varnish remover. Any coating must be removed with Timberlife's Cote Strip before application of Timbrite Rfu. Timbrite Rfu is ideal for cleaning any timber that has been discoloured by mould or stain fungi, eg bottom parts of doors, neglected outdoor furniture, etc
- Indeg is a ready-to-use product that dissolves and removes old oily and waxy substances from previously finished wood. It also cleans timber from all forms of dirt and grime. Indeg is not a paint or varnish remover. Any coating must be removed with Timberlife's Cote Strip before application of Indeg. Indeg is ideal for removing old oily and/or wax finished and dirt from wooden products such as poles, doors, window frames, decks, wendy houses, furniture, etc. Can also be used to remove all stains from paving and concrete

Timber treaters - contractors

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- Dolphin Bay Chemicals has trained staff to assist with treating when needed.

Timber treaters - merchants

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- To find out more about the accredited dealers on the Tanalised™ Dealer programme, contact Lonza Wood Protection

Dolphin Bay Chemicals (Pty) Ltd

- For superior service and expertise on treating timber.
- Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark

Mintroad Sawmills

Timber treaters - pole treaters

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection
Dolphin Bay Chemicals (Pty) Ltd
FFS Refiners

- The coal tar creosote solution sold by FFS Refiners boasts a high level of residue and wax. This contributes to better retention of the creosote in timber and less movement of the wood due to wetting and drying cycles. The higher water repellence, caused by the higher wax and residue content in FFS creosote, results in less wood checking for in-service timber. This creosote is sold under the brand name WP1 (Wood Preservative 1) and complies with SABS specifications
- Creosote is one of the oldest used timber preservatives and is used in transmission poles (electricity and telephone), playground structures, outdoor decking, fencing poles and vineyard applications. It is an extremely cost-effective preservative and if applied properly will protect wood for 20 to 100 years. Creosote is registered as a fungicide, insecticide, miticide and sporicide
- Research has shown that the effectiveness of creosote as a wood preservative is predominantly directly related to the quantity of preservative retained in the wood over its life. Thus the primary treatment objective for maximum service life is a high retention level of creosote that at least penetrates through the sapwood of hardwoods and to sufficient depth in softwoods. However, creosote retention is required not only in initial treatment but must persist over time. To achieve long-term retention of the creosote in the timber, the creosote formulation has been shown to require sufficient residue to reduce the amount of creosote that evaporates out of the timber over time
- To incorporate the body of knowledge and research done on coal tar creosote, FFS developed a coal tar creosote blend for conditions suited to hot areas as found in Africa. The performance of the FFS blend will also be superior to most European blends in both wet and dry conditions

Mintroad Sawmills

Timber treaters - sawmills

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection
Dolphin Bay Chemicals (Pty) Ltd
Mintroad Sawmills

Treatment inspectors

SABS - South African Bureau of Standards

Treatment plant equipment - chemical dosage systems

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

Dolphin Bay Chemicals (Pty) Ltd
WTT

- A full range of standard and special treatment technologies, including CCA, Creosote, Hot-oil, Ammonia, thermal modification and wax. Full automatic factory

Treatment plant equipment - dip fusion

- Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection**
- The design and manufacture of customised dip diffusion plants and vessels for onsite treatment of timber is a service offered by Lonza Wood Protection

Dolphin Bay Chemicals (Pty) Ltd

- We offer professional services that include custom manufacturing, consulting and design of dip diffusion plants
- All treatment plant equipment can be supplied. We custom design and build treatment plants to meet your optimum production target. All design procedures are in accordance with SANS 10255

Treatment plant equipment - general

Alternative Structures

- Marking for treated and sawn timber
- Metal, plastic and paper markers for marking sawn and treated timber in accordance with SANS specifications

Dolphin Bay Chemicals (Pty) Ltd
Nukor Group

Treatment plant equipment - hot/cold submersion plants

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection
Dolphin Bay Chemicals (Pty) Ltd
Nukor Group

WTT

- A full range of standard and special treatment technologies, including CCA, Creosote, Hot-oil, Ammonia, thermal modification and wax. Full automatic factory

Treatment plant equipment - phyto sanitary heat treatment

Nukor Group

Treatment plant equipment - pressure impregnation

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- We provide total engineering support, from the design and implementation of new treatment facilities to process and plant engineering upgrades, as well as assisting customers to source specific equipment. We also provide a procurement service for day-to-day

plants spare such as gaskets. Our turnkey plant project management for treatment plant installation is a specialty service to the industry

Dolphin Bay Chemicals (Pty) Ltd

- We have an engineering and maintenance team that specialise in manufacturing, design, repairing and troubleshooting
- Installations of new timber treatment plants from EIA to full operation

Nukor Group

WTT

- Pressure impregnation plants for CCA, Creosote, Fire retardant and special processes full automation. Full service and support

Treatment plant manufacture/repair services

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

- We provide total engineering support, from the design and implementation of new treatment facilities to process and plant engineering upgrades, as well as assisting customers to source specific equipment. We also provide a procurement service for day-to-day plant spare such as gaskets. Our turnkey plant project management for treatment plant installation is a specialty service to the industry

Dolphin Bay (Pty) Ltd

- We have an engineering and maintenance team that specialise in manufacturing, design, repairing and troubleshooting
- Installations of new timber treatment plants from EIA to full operation

WTT

- We manufacture and service a full range of pressure impregnation, vacuum drying and special process plants. Full automatic 24/7 factories available

Wax-end coatings

Arch Wood Protection (SA) (Pty) Ltd t/a Lonza Wood Protection

Dolphin Bay Chemicals (Pty) Ltd

- See under headings end sealers and water repellent
- Dolphin Bay Chemicals now offer a 30 to 50-year guarantee with all timber bearing the Safewood mark

Rystix Sales

- Rystix Timbaseal 501 - wax-based sealer for prevention of end splitting of timber and poles

Timberlife

- See under headings; "End-sealing products" and "Sealants"



457-2:2008

WOODEN POLES, DROPPERS, GUARDRAIL POSTS AND SPACER BLOCKS. PART 2: SOFTWOOD SPECIES

RETENTION AND PENETRATION REQUIREMENTS FOR SOFTWOODS POLES, ROUND DROPPERS, GUARDRAIL POSTS AND SPACER BLOCKS

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------|-----------------------|--|---|---|---|---------------------------------------|
| Hazard Class | Exposure Class | Timber application | End use | Preservative type | Minimum average net retention kg/m ³ | Minimum preservative penetration (mm) |
| H6 | Marine | Timber that is constantly or periodically in contact with estuarine or sea water and is therefore subject to marine borer attack | Piling ^a , retaining walls, slipways, groynes, jetties, walkways | CCA plus Creosote | 24 plus 200 | 50 |
| H5 | Fresh water | Timber that is constantly or periodically in contact with fresh water and heavy wet soils | Agricultural poles, poles under flood irrigation, bridges, piling ^a , slipways, groynes, jetties, walkways, agricultural poles for livestock pens, retaining walls | CCA or Creosote | 16 or 130 | 25 |
| H4 | Ground contact | Timber that is in direct contact with the ground (for piling and livestock purposes) ^a | Agricultural poles, landscaping structures, playground structures, building, fencing, car ports, flower boxes, pergolas, vine and orchard trellises | CCA or Creosote | 12 or 100 | 20 |
| | | | Guardrail posts | | | Complete sapwood |
| H3 | Exterior above ground | Timber that is not in contact with the ground but will be exposed to leaching and weathering | Landscaping structures, playground structures, building, fencing rails, car ports, pergolas, vine and orchard trellises | CCA or Creosote | 8 or 80 | 20 |
| | | | Spacer blocks ^b | | | Complete sapwood |
| | | | Round droppers | | | 10 |
| H2 | Internal | Timber that is used under a roof, is not in contact with the ground and will not be exposed to leaching and weathering | Building structures, Roof trusses | CCA or Creosote or TBOL ^c or Borate ^c (boric acid equivalent) | 8 or 80 or 1 or 5 | 20 |

- a Due to preservative treatment requirements, all piling and agricultural poles for use in livestock pens/retaining walls, that are to be used in direct contact with the ground or that will be constantly or periodically in contact with fresh water or heavy wet soils (or both), shall be treated and marked in accordance with hazard class H5. All piling that will be in contact with estuarine or sea water shall be treated and marked in accordance with hazard class H6.
- b Spacer blocks: full penetration even with lower retention
- c Timber treated with TBOL or borate may be used under H3 conditions, provided that it is continuously protected by a suitable well-maintained coating.



457-3: 2013

WOODEN POLES, DROPPERS, GUARDRAIL POSTS AND SPACER BLOCKS.

PART 3: HARDWOOD SPECIES

RETENTION AND PENETRATION REQUIREMENTS FOR SANS 457-3 HARDWOOD STRUCTURAL POLES, VINEYARD POLES AND AGRICULTURAL POLES

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|-----------------------|--|---|--|---|--|-------------------------------------|
| Hazard class | Exposure class | Timber application | End use | Preservative type | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum preservative penetration mm |
| H6 | Marine | Timber that is constantly or periodically in contact with estuarine or sea water and is therefore subject to marine borer attack | Piling ^c ; retaining walls, slipways, groynes, jetties, walkways | CCA plus Creosote | – | 24 plus 200 | 50 |
| H5 | Fresh water | Timber that is constantly or periodically in contact with fresh water and heavy wet soils | Agricultural poles, poles under flood irrigation, bridges, piling ^c , slipways, groynes, jetties, walkways | CCA or CuAz ^d or ACQ ^d or Creosote | 0,83 1,69 | 16 or 5,4 or 10,9 or 130 | 20 |
| H4 | Ground contact | Timber that is in direct contact with the ground (for piling and livestock purposes) ^c | Agricultural poles ^e , landscaping structures, playground structures, building; car ports, pergolas, domestic vine and orchard trellises | CCA or CuAz ^d or ACQ ^d or Creosote | 0,5 0,98 | 12 or 3,2 or 6,3 or 100 | 13 |
| | | | Vineyard poles ^f | CCA or CuAz or ACQ or Creosote | – 0,83 1,69 | 16 (12) ^g or 5,4 (3,2) ^g or 11 (6,4) or 130 (100) ^g | Complete sapwood ^h |
| H3 ⁱ | Exterior above ground | Timber that is not in contact with the ground but will be exposed to leaching and weathering | Landscaping structures, playground structures, building; car ports, pergolas, vine and orchard trellises | CCA or CuAz ^d or ACQ or Creosote | 0,23 0,39 | 8 or 1,5 or 2,5 or 80 | 13 |
| H2 ⁱ | Internal | Timber that is used under a roof, is not in contact with the ground and will not be exposed to leaching and weathering | Building structures Roof trusses | CCA or CuAz ^d or ACQ or Creosote | – 0,23 0,35 | 8 or 1,5 or 2,3 or 80 | 13 |
| | | | | CCA or CuAz ^d or ACQ or Creosote | – | 80 | |
| | | | | TBTN-P or ZP or Borate | – | 1,3 or 0,40 or 5 | |
| | | | | CCA or CuAz ^d or ACQ or Creosote | – | 80 | |
| | | | | TBTN-P or ZP or Borate | – | 1,3 or 0,40 or 5 | |

^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide.

^b In the case of hardwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kilograms per cubic metre (total volume), is calculated by converting from the mass fraction active ingredients using an oven-dry timber density of 800 kg/m³, and a sapwood content of 80% for large poles, and an oven-dry density of 650 kg/m³, and a sapwood content of 100 % for small diameter poles.

^c Due to preservative treatment requirements, all piling that is to be used in direct contact with the ground or that will be constantly or periodically in contact with fresh water or heavy wet soils (or both), shall be treated and marked in accordance with hazard class H5. All piling that will be in contact with estuarine or sea water shall be treated and marked in accordance with hazard class H6.

^d Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) is less than those in footnote b, then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following equation: ANR = mass fraction (column 6) × oven dry timber density × sapwood content.

^e Agricultural poles that are not subjected and exposed to frequent wetting from irrigation or nutrients rich fertilizers (or both).

^f Due to required life expectancy and its exposure to commercial agricultural practices such as flood and other frequent irrigation methods, as well as fertilizers high in nutrients, vineyard poles are classified as extremely high risk hazard class 4 commodities and require additional chemical retention to ensure suitability.

^g The retention value given in parenthesis is the minimum retention required for individual poles. Determine the retention in accordance with 7.4.2.

^h Penetration of at least 85 % of the radial width of the sapwood or 13 mm, whichever is greater.

ⁱ All poles of length not exceeding 5,4 m (nominal) shall be treated and marked in accordance with H4.

NOTE 1 A dash (–) means "not applicable".

NOTE 2 Timber treated with TBTN-P, ZP or borate may be used under H3 conditions, provided that it is continuously protected by a suitable well-maintained coating.



457-3: 2013

WOODEN POLES, DROPPERS, GUARDRAIL POSTS AND SPACER BLOCKS.

PART 3: HARDWOOD SPECIES

RETENTION AND PENETRATION REQUIREMENTS FOR SANS 457-3 HARDWOOD FENCING POLES, ROUND DROPPERS, GUARDRAIL POSTS AND SPACERBLOCKS

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|-----------------------|--|--|---|---|--|-------------------------------------|
| Hazard class | Exposure class | Timber application | End use | Preservative type | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum preservative penetration mm |
| H5 | Fresh water | Timber that is constantly or periodically in contact with fresh water and heavy wet soils | Poles for livestock pens / retaining walls ^c Fencing | CCA or WCuAz ^d or ACQ ^d or Creosote | – 0,83 1,69 – | 16 or 5,4 or 10,9 or 130 | 20 |
| H4 | Ground contact | Timber that is in direct contact with the ground | Poles for livestock pens / retaining walls ^c Fencing | CCA or CuAz ^d or ACQ ^d or Creosote | – 0,5 0,98 – | 12 or 3,2 or 6,3 or 100 | 13 |
| | | | Guardrail posts | | | | Complete sapwood |
| H3 ^e | Exterior above ground | Timber that is not in contact with the ground but will be exposed to leaching and weathering | Fencing rails | CCA or CuAz ^d or ACQ ^d or Creosote | – 0,23 0,39 – | 8 or 1,5 or 2,5 or 80 | 13 |
| | | | Spacer blocks ^f | | | | Complete Sapwood |
| | | | Round droppers | As above except in the case of ACQ | 0,39 | 2,6 | 10 |

^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide.

^b In the case of hardwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kilograms per cubic metre (total volume) is calculated by converting from the mass fraction active ingredients using an oven dry timber density of 800 kg/m³, and a sapwood content of 80% for large poles, and an oven-dry density of 650 kg/m³, and a sapwood content of 100% for small diameter poles.

^c Due to preservative treatment requirements, all poles for use in livestock pens/retaining walls, that are to be used in direct contact with the ground or that will be constantly or periodically in contact with fresh water or heavy wet soils (or both), shall be treated and marked in accordance with hazard class H5.

^d Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) is less than that given in footnote ^b, then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following equation: $ANR = \text{mass fraction (column 6)} \times \text{oven-dry timber density} \times \text{sapwood content}$.

^e All poles of length not exceeding 5,4 m (nominal) shall be treated and marked in accordance with H4.

^f Spacer blocks: Full penetration even with lower retention.

NOTE A dash (–) means "not applicable".



753:2009

PINE POLES, CROSS-ARM AND SPACERS FOR POWER DISTRIBUTION, TELEPHONE SYSTEMS AND STREET LIGHTING

RETENTION AND PENETRATION REQUIREMENT

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------|-------------------------|---|---------------------------------|-------------------|---|---------------------------------------|
| Hazard Class | Exposure Class | Timber application | End use | Preservative type | Minimum average net retention kg/m ³ | Minimum preservative penetration (mm) |
| H4 | Exterior ground contact | Timber in direct contact with the ground | Distribution poles | CCA or creosote | 16 or 115 | 30 |
| | | | Telephone and streetlight poles | CCA or creosote | 16 or 115 | 25 |
| H3 | Exterior above ground | Timber not in direct contact with the ground but exposed to leaching and weathering | Cross-arms and spacers | CCA or creosote | 12 or 100 | 20 |



EUCALYPTUS POLES, CROSS-ARMS AND SPACES FOR POWER DISTRIBUTION AND COMMUNICATION SYSTEMS

RETENTION AND PENETRATION REQUIREMENTS

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------------|-------------------------|---|---------------------------------------|---------------------------------------|---|---|-------------------------------------|
| Hazard class (see SANS 10005) | Exposure class | Timber application | End use | Preservative type | Average net retention (assay zone) ^a Mass fraction | Minimum average net retention kg/m ³ | Minimum preservative penetration mm |
| H4 | Exterior ground contact | Timber in direct contact with the ground | Distribution and communications poles | CCA or creosote | - | 16 or 115 | 15 |
| | | | | CuAz ^b or ACQ ^b | 0,83 | 5,4 ^c or 10,9 ^c | |
| | | | | CCA or creosote | 1,69 | 10,9 ^c | |
| H3 | Exterior above ground | Timber not in direct contact with the ground but exposed to leaching and weathering | Cross-arms and spacers | CCA or creosote | - | 12 or 100 | 15 |
| | | | | CuAz ^b or ACQ ^b | 0,50 | 3,2 ^c or 6,3 ^c | |
| | | | | CCA or creosote | 0,98 | 6,3 ^c | |

^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide

^b Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) are less than those in (c), then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following formula: ANR = mas fraction (column 6) x oven dry timber density x sapwood content

^c In the case of hardwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kg/m³ (total volume) is calculated by converting from the mass fraction active ingredients using an oven dry timber density of 800 kg/m³, and a sapwood content of 80 % for large poles



1288: 2013

REQUIREMENTS OF PRESERVATIVE – TREATED HARDWOOD WITH A SERVICE LIFE OF AT LEAST 20 YEARS

REQUIREMENTS OF SANS 1288 PRESERVATIVE-TREATED SAWN SOFTWOOD PRODUCTS WITH A SERVICE LIFE OF AT LEAST 20 YEARS

Table 1

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|-----------------------|---|---|--|---|--|--|
| Hazard class | Exposure class | Timber application | End use | Type of preservative | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum penetration of preservative mm |
| H6 | Marine | Timber constantly or periodically in contact with estuarine or sea water and subject to marine borer attack | Piling ^c ; Retaining walls Slipways Groynes Jetties Walkways | CCA plus Creosote | - - | 24 plus 200 | Complete sapwood ^d |
| H5 | Fresh water | Timber constantly or periodically in contact with fresh water or heavy wet soils | Piling ^c ; Retaining walls Slipways Culverts Groynes Flood gates Jetties Drains Walkways Garden edging | CCA or Creosote or CuAz ^e or ACQ ^e | - - 0,76 1,41 | 16 or 130 or 4,4 or 8,2 | Complete sapwood ^d |
| | | | Industrial cooling towers ^f | CCA | - | 30 | Complete sapwood |
| H4 | Ground contact | Timber in direct contact with the ground | Sawn rectangular posts Landscaping structures Playground structures Building Fencing Garden edging Stakes Pergolas; Car ports Flower boxes Decking Bridges; | CCA or Creosote or CuAz ^e or ACQ ^e | - - 0,42 0,89 | 12 or 100 or 2,5 ^e or 5,2 ^e | Complete sapwood ^d |
| | | | Piling ^c | | | See hazard class H5 | |
| H3 | Exterior above ground | Timber not in contact with the ground but exposed to leaching and weathering | Balustrades Fencing bearers and slats Outdoor decking and beams Garden furniture Laminated beams Weather board Steps; Cladding Stairs; Gates Fascia boards Sawn droppers | CCA or Creosote or CuAz ^e or ACQ ^e | - - 0,23 0,35 | 8 or 80 or 1,4 or 2,1 | Complete sapwood ^d |
| | | | Plywood | CCA | - | Min 3,5 ^g | Complete sapwood (outer veneers) |



1288: 2013 (Continued)

REQUIREMENTS OF PRESERVATIVE – TREATED HARDWOOD WITH A SERVICE LIFE OF AT LEAST 20 YEARS

REQUIREMENTS OF SANS 1288 PRESERVATIVE-TREATED SAWN SOFTWOOD PRODUCTS WITH A SERVICE LIFE OF AT LEAST 20 YEARS

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|----------------|---|---|--|---|---|--|
| Hazard class | Exposure class | Timber application | End use | Type of preservative | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum penetration of preservative mm |
| H2 | Internal | Timber used under a roof, not in contact with the ground and not exposed to leaching and weathering | Laminated beams Roof trusses Structural timber Ceiling boards Flooring Panelling Doors Cupboards Skirting Window frames Plywood | CCA or Creosote or CuAz ^e or ACQ ^e or TBTN/P or ZP or Borate (boric acid equivalent) | - - 0,23 0,35 - - - | 6 or 80 or 1,4 or 2,1 or 1,3 or 0,40 or 5 | Complete sapwood ^d |
| H0-ih | Dry interior | Timber used under a roof, not in contact with the ground, exposed to insects other than termites, and not exposed to fungal attack or leaching and weathering | Mouldings Ceilings Flooring boards Joinery | Deltamethrin | - | 0,003 | Complete sapwood |
| H0-ih ^f | Dry interior | Timber used under a roof, not in contact with the ground, exposed to insects including termites, and not exposed to fungal attack or leaching and weathering | Mouldings Ceilings Flooring boards Joinery | Deltamethrin | - | 0,01 | Complete sapwood |

NOTE Timber treated with TBTN-P, ZP or borate could be used for hazard class H3, provided that the timber is continuously protected by a suitable well-maintained coating.

- ^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide.
^b In the case of softwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kg/m³ (total volume) is calculated by converting from the mass fraction active ingredients using an oven dry timber density of 580 kg/m³, and a sapwood content of 100% for sawn timber.
^c Preferably in roundwood form with complete envelope of sapwood, see SANS 457-2, but if sawn timber is used, a large amount of sapwood shall be present.
^d To achieve the required retention, a large proportion of sapwood needs to be present.
^e Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) are less than those in ^b), then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following formula: $ANR = \text{mass fraction (column 6)} \times \text{oven dry timber density} \times \text{sapwood content}$.
^f Timber selected for 100% sapwood.
^g Treatment to refusal with a minimum retention of 3,5 kg/m³.
^h The end uses for this hazard class, unlike the other hazard classes, are restricted to those given in column 4 only. Only products included in column 4 shall be allowed to be treated.



1288: 2013

REQUIREMENTS OF SANS 1288 PRESERVATIVE-TREATED SAWN HARDWOOD PRODUCTS WITH A SERVICE LIFE OF AT LEAST 20 YEARS

Table 2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|-----------------------|--|---|----------------------|---|--|--|
| Hazard class | Exposure class | Timber application | End use | Type of preservative | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum penetration of preservative mm |
| H6 | Marine | Timber constantly or periodically in contact with estuarine or sea water and subject to marine borer attack ^c | Piling ^d ; Retaining walls Slipways Groynes Jetties Walkways | CCA plus Creosote | - - | 24 plus 200 | Complete sapwood |
| H5 | Fresh water | Timber constantly or periodically in contact with fresh water or heavy wet soils ^c | Piling ^d ; Retaining walls Slipways Culverts Groynes Flood gates Jetties Drains Walkways Garden edging | CCA or Creosote | - - | 16 or 130 | Complete sapwood |
| | | | Industrial cooling towers ^e | CCA | - | 30 | Complete sapwood |
| H4 | Ground contact | Timber in direct contact with the ground ^c | Sawn rectangular posts Landscaping structures Playground structures Building Fencing Garden edging Stakes Pergolas; Car ports Flower boxes Decking Bridges | CCA or Creosote | - - | 12 or 100 | Complete sapwood |
| | | | Railways sleepers and ties ^f | Creosote | - | 100 | Complete sapwood |
| | | | Piling ^d | See hazard class H5 | | | |
| H3 | Exterior above ground | Timber not in contact with the ground but exposed to leaching and weathering | Balustrades Fencing bearers and slats Outdoor decking and beams Garden furniture Laminated beams Weather board Steps; Cladding Stairs; Gates Fascia boards Sawn droppers ^g Slabbed poles Half-rounds ^h | CCA or Creosote | - - | 8 or 80 | Complete sapwood |



1288: 2013 (Continued)

REQUIREMENTS OF SANS 1288 PRESERVATIVE-TREATED SAWN SOFTWOOD PRODUCTS WITH A SERVICE LIFE OF AT LEAST 20 YEARS

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|----------------|---|---|---|---|---|--|
| Hazard class | Exposure class | Timber application | End use | Type of preservative | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum penetration of preservative mm |
| H2 | Internal | Timber used under a roof, not in contact with the ground and not exposed to leaching and weathering | Laminated beams Roof trusses Structural timber Ceiling boards Flooring Panelling Doors Cupboards Skirting Window frames Plywood | CCA or Creosote or CuAz ⁱ or ACQ ⁱ or TBTN/P or ZP or Borate (boric acid equivalent) | - - 0,23 0,35 - - - | 6 or 80 or 1,9 or 2,8 or 1,3 or 0,40 or 5 | Complete sapwood |
| H0-ii | Dry interior | Timber used under a roof, not in contact with the ground, exposed to insects other than termites, and not exposed to fungal attack or leaching and weathering | Mouldings Ceilings Flooring boards Joinery | Deltamethrin | | 0,003 | Complete sapwood |
| H0-iii | Dry interior | Timber used under a roof, not in contact with the ground, exposed to insects including termites, and not exposed to fungal attack or leaching and weathering | Mouldings Ceilings Flooring boards Joinery | Deltamethrin | | 0,01 | Complete sapwood |

NOTE Timber treated with TBTN-P,ZP or borate could be used for hazard class H3, provided that the timber is continuously protected by a suitable well-maintained coating.

- ^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide.
- ^b In the case of hardwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kg/m³ (total volume) is calculated by converting from the mass fraction active ingredients using an oven dry timber density of 800 kg/m³, and a sapwood content of 100% for sawn hardwood products.
- ^c The only hardwoods recommended are species with a permeable heartwood. Sawn eucalyptus species are not suitable for hazard classes H6, H5 and H4.
- ^d Preferably in roundwood form with complete envelope of sapwood, see SANS 457-3, but if sawn timber is used, a large amount of sapwood shall be present.
- ^e Timber selected for 100% sapwood.
- ^f If refusal is reached before the required retention is attained, maintain the working pressure (minimum 850 kPa) for 15 min at a temperature ranging between 80 °C and 100 °C.
- ^g Type WCCA preservatives shall not be used for the treatment of sawn droppers.
- ^h The treatment of half-rounds with class W preservatives is not recommended.
- ⁱ Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) are less than those in ^b, then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following formula: $ANR = \text{mass fraction (column 6)} \times \text{oven dry timber density} \times \text{sapwood content}$.



1288: 2013

REQUIREMENTS OF SANS 1288 PRESERVATIVE-TREATED ROUND SOFTWOOD PRODUCTS WITH A SERVICE LIFE OF AT LEAST 20 YEARS

Table 3

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
|--------------|-----------------------|---|--|--|---|--|---|----|
| Hazard class | Exposure class | Timber application | End use | Type of preservative | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum penetration of preservative mm | |
| H5 | Fresh water | Timber constantly or periodically in contact with fresh water or heavy wet soils | Non-structural poles (aesthetic) Garden edging | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,76 1,41 | 16 or 130 or 4 or 7,4 | 25 Complete sapwood ^d or 20 | |
| | | | Cylindrically turned poles/posts | | | | | |
| H4 | Ground contact | Timber in direct contact with the ground | Non-structural poles (aesthetic) Garden edging Stakes | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,42 0,89 | 12 or 100 or 2,2 or 4,7 | 20 Complete sapwood ^d or 20 | |
| | | | Cylindrically turned poles/posts | | | | | |
| H3 | Exterior above ground | Timber not in contact with the ground but exposed to leaching and weathering | Non-structural poles (aesthetic) | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,23 0,35 | 8 or 80 or 1,2 or 1,9 | 20 Complete sapwood or 20 | |
| | | | Slabbed poles Cylindrically turned poles and rails Half-rounds Machined poles for log homes | | | | | |
| | | | Droppers | | | | | 10 |
| | | | Laths | | | | | 5 |
| H2 | Internal | Timber used under a roof, not in contact with the ground and not exposed to leaching and weathering | Non-structural poles | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,23 0,35 | 6 or 80 or 1,2 or 1,9 | 20 Complete sapwood or 20 | |
| | | | Slabbed poles Cylindrically turned poles and rails Machined poles for log homes | | | | | |
| | | | Laths | TBTN/P or ZP or Borate (boric acid equivalent) | - - - - | 1,3 or 0,40 or 5 | 5 | |

NOTE Timber treated with TBTN-P, ZP or borate could be used for hazard class H3, provided that the timber is continuously protected by a suitable well-maintained coating.

- ^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide.
- ^b In the case of softwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kg/m³ (total volume) is calculated by converting from the mass fraction active ingredients using an oven dry timber density of 580 kg/m³, and a sapwood content of 90% for poles.
- ^c Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) are less than those in ^b, then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following formula: ANR = mass fraction (Column 6) × oven dry timber density × sapwood content.
- ^d To achieve the required retention, a large proportion of sapwood needs to be present.



1288: 2013

REQUIREMENTS OF SANS 1288 PRESERVATIVE-TREATED ROUND HARDWOOD PRODUCTS WITH A SERVICE LIFE OF AT LEAST 20 YEARS

Table 4

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|-----------------------|---|--|---|---|--|--|
| Hazard class | Exposure class | Timber application | End use | Type of preservative | Average net retention (assay zone) ^a mass fraction | Minimum average net retention ^b kg/m ³ | Minimum penetration of preservative mm |
| H5 | Fresh water | Timber constantly or periodically in contact with fresh water or heavy wet soils | Non-structural poles (aesthetic) Garden edging | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,83 1,41 | 16 or 130 or 5,4 or 11 | 20 |
| | | | H4 | Ground contact | Timber in direct contact with the ground | Non-structural poles (aesthetic) Rail bearers | CCA or Creosote or CuAz ^c or ACQ ^c |
| | | | Garden edging Stakes | As above except for CuAz ^c or ACQ ^c | | 3,3 or 6,4 | |
| H3 | Exterior above ground | Timber not in contact with the ground but exposed to leaching and weathering | Non-structural poles (aesthetic) End turned rails | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,23 | 8 or 80 or 1,5 or 2,5 | 13 |
| | | | Slabbed poles Half-rounds ^d Machined poles for log homes ^e | As above except for ACQ ^c | 0,39 | | Complete sapwood or 13 |
| | | | Droppers | | | 2,6 | 10 |
| | | | Laths | | | | 5 |
| H2 | Internal | Timber used under a roof, not in contact with the ground and not exposed to leaching and weathering | Non-structural poles (aesthetic) | CCA or Creosote or CuAz ^c or ACQ ^c | - - 0,23 | 6 or 80 or 1,5 or 2,3 | 20 |
| | | | Slabbed poles Machined poles for log homes ^e | As above except for ACQ ^c | 0,35 | | Complete sapwood or 20 |
| | | | Laths | TBTN/P or ZP or Borate (boric acid equivalent) | - - - | 1,3 or 0,40 or 5 | 5 |

NOTE Timber treated with TBTN-P, ZP or borate could be used for hazard class H3, provided that the timber is continuously protected by a suitable well-maintained coating.

- ^a Average net retention (assay zone) levels expressed in a mass fraction of Cu + biocide.
- ^b In the case of hardwoods treated with CuAz or ACQ preservatives, the average net retention expressed in kg/m³ (total volume) is calculated by converting from the mass fraction active ingredients using an oven dry timber density of 800 kg/m³, and a sapwood content of 80% for large poles, and an oven dry density of 650 kg/m³, and a sapwood content of 100% for laths and small diameter poles.
- ^c Timber treated with CuAz or ACQ preservatives: If the actual timber density or sapwood content (or both) are less than those in ^b), then a suitable sampling plan (see SANS 10005) may be used to determine the actual net retention, using the following formula:
ANR = mass column 6) × oven dry timber density × sapwood content.
- ^d The treatment of half-rounds with class W preservatives is not recommended.
- ^e Machined in such a way that the sapwood required for penetration is not disturbed.



“To make knowledge productive,
we will have to learn to see both forest and tree.
We will have to learn to connect.”

Peter F. Drucker