

# Liquid Boron™



**Boron compounds have been widely used for timber preservation over many decades in New Zealand, specifically in situations that are out of ground contact and protected from the weather.**

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## Intended uses

Liquid Boron™ provides protection against insect attack and fungal decay when used at suitable retentions, out of ground contact and protected from moisture by roof or walls. Wood treated with Liquid Boron should not be used in weather exposed situations.

Timber treated with Liquid Boron is suited to interior construction such as wall framing, floor joists, rafters, panelling and flooring in either H1.1 or H1.2 situations. See NZS3602 for specific approved end-uses of H1.1 and H1.2 treated timber.

## Properties of wood treated with Liquid Boron

Timber treated with Liquid Boron is odourless, clean and safe to handle when used as recommended.

Wood treated with Liquid Boron has essentially the same physical properties as untreated wood and can therefore be painted or glued using readily available materials once dry. Follow manufacturer's recommendations. There is no deterioration in strength properties of treated wood.

## Formulation

Liquid Boron is a water-based solution containing disodium octaborate tetrahydrate. It is supplied at concentrations of either 30% or 40% m/v Boric Acid Equivalence (BAE).

Liquid Boron solutions have a neutral pH and are non-corrosive. Liquid Boron will not evaporate or volatilize from the wood in service, and borates are considered non-hazardous when used as recommended.

Liquid Boron has low toxicity and can be easily handled observing good industrial hygiene standards.

## Application

Liquid Boron may be applied to wood via dip-diffusion, pressure-diffusion or pressure treatment processes.

Wood that is treated with a diffusion process should be at the highest possible moisture content i.e. green-off-saw condition. Wood must be held for sufficient diffusion time until full sapwood penetration has occurred; this will take between two and eight weeks, depending on the application method used, the timber dimensions, condition and the ambient temperature. Diffusion speed is retarded in wood that has been allowed to dry before diffusion. Storage conditions must be maintained that prevent the loss of timber moisture during diffusion, such as the use of close-fitting tarpaulins or well-sealed sheds.

Wood that is to be treated by vacuum-pressure without diffusion must be dried to below fibre saturation point (30%) to allow complete sapwood penetration during the pressure impregnation process.

In all cases it is recommended that wood is treated in its final shape and form. Before commencing treatment consult an Osmose representative to ensure that the most appropriate procedures are followed.

## Mould control

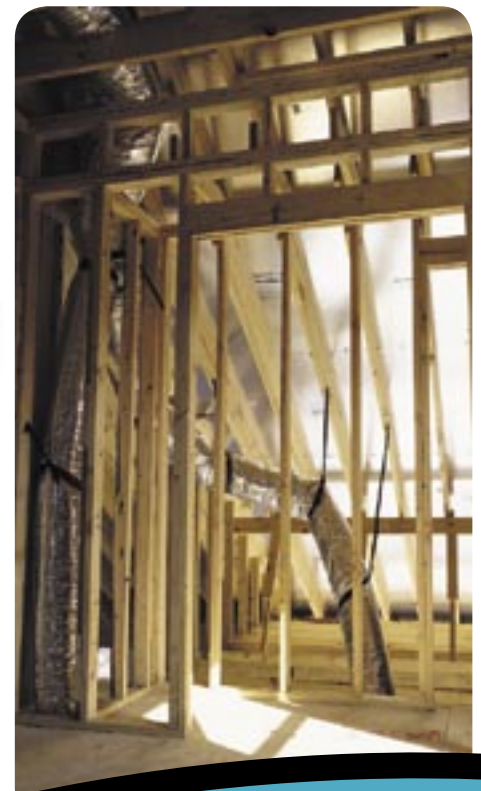
Where diffusion processes are used, the high humidity storage conditions can allow for the growth of unsightly surface mould. While this is of no structural importance, it is unsightly, so the use of a mouldicide such as CleanWood™ is recommended.

## Appearance

Liquid Boron will not discolour wood, although it is a requirement of NZS3640 that wood treated with boron to the H1.2 level is dyed a pink-red colour for identification.

## Kiln drying

Up to 35% of the original boron retention can be lost from treated wood by volatilisation during kiln drying. This can reduce the retentions to below the levels specified in NZS3640 unless the original loadings are increased to compensate for losses. Treated wood that is being dried for the first time (i.e. that has been treated green off saw) is far more susceptible to losses than wood that was dried before treatment. Consult Osmose for more information.



## Preservation requirements for NZS3640

Hazard Class	Required Sapwood retention, cross section	Penetration required
H1.1	0.1% m/m BAE on an oven dried basis	Full sapwood penetration
H1.2	0.4% m/m BAE on an oven dried basis	Full sapwood penetration

## Important Information

1. Job site storage - intended for interior use only - store off the ground & cover to protect from water and allow for ventilation.
2. During construction if the wood should become wet it should be allowed to dry before being covered or enclosed.
3. Do not burn preserved wood.
4. Wear a dust mask and goggles when cutting or sanding wood.
5. Wear gloves when working with wood.
6. Do not use preserved wood as mulch.
7. Some preservative may migrate from the treated wood or may dislodge from the treated wood surface upon contact with skin. Wash exposed skin areas thoroughly.
8. Fasteners and other hardware must be compliant with building codes.
9. Disposal Recommendations - Preserved wood may be disposed of in landfills or burned in commercial or industrial incinerators or boilers in accordance with federal, state and local regulations.
10. Mould growth can and does occur on the surface of many products, including untreated and treated wood, during prolonged surface exposure to excessive moisture conditions. To remove mould from the treated wood surface, wood should be allowed to dry. Typically, mild soap and water can be used to remove remaining surface mould. For more information visit [www.epa.gov](http://www.epa.gov).
11. When products are used in weather protected exterior applications (such as fascia board), it is recommended that the product be continuously protected from direct wetting with a minimum of one coat oil-based primer and two coats oil-based finish paint/sealer. Always check the label of the finishing product and follow the manufacturer's instructions. During construction, if the wood should become wet it should be allowed to dry before finishing. Apply finishing product to a small exposed area of your project before finishing the entire project.
12. For more information visit [www.osmose.co.nz](http://www.osmose.co.nz).