



**BRANZ  
APPRAISAL  
CERTIFICATE  
No. 422 (2001)**

**OSMOSE®  
LIFEWOOD®  
K33 OXIDE AND  
SALT CCA  
TIMBER  
PRESERVATIVES**

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Readers are advised to check that this Certificate has not been amended, withdrawn or superseded by a later issue. Refer to the "Valid Certificates Index" in BUILD magazine published by BRANZ, the Certificate Listing on the BRANZ Internet Site, or contact BRANZ.

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## Product

- *This Certificate relates to Osmose® Lifewood® K33 Oxide and Salt CCA (copper, chrome, arsenic) Timber Preservatives, which are used for treating timber to provide long-term protection from attack by insects, decay or marine borers.*
- *The products have been appraised for use as preservatives for the treatment of timber up to Hazard Class H6 as listed in MP 3640 (\*NZS 3640) and AS 1604, when used by commercial treatment plants using vacuum/pressure treatment processes.  
(\*Note: MP 3640 is in the final stages of an update and will soon be released as NZS 3640).*
- *The products must be used in accordance with the instructions of Osmose® printed on their container labels. Osmose® also provides onsite training at individual treatment plants for use of the products.*



Osmose®  
**Lifewood® Marine H6**

## Building Regulations

### 1. New Zealand Building Code (NZBC)

Lifewood preservatives are themselves not within the scope of the NZBC, however, timber treated with the products and used within buildings is a building element, or part of a building element, and is covered by the NZBC. Therefore, in the opinion of BRANZ, Osmose® Lifewood® K33 Oxide and Salt CCA Timber Preservatives, if used in accordance with the statements and conditions of this Certificate, will contribute to meeting the following provisions of the NZBC:

**Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.4 for the relevant physical conditions of B1.3.3. See Section 7.

**Clause B2 DURABILITY:** Performance B2.3.1(a), not less than 50 years; B2.3.1(b) 15 years; and B2.3.1(c) 5 years. See Section 8.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. See

## 2. NZBC Acceptable Solutions

2.1 Durability requirements contained within the NZBC cover durability of building elements, and means of meeting these durability requirements are contained within NZBC Acceptable Solutions. Acceptable Solution B2/AS1 references NZS 3602: Part 1 as a means of meeting the durability requirements for timber building elements, and NZS 3602 specifies timber treated in accordance with MP 3640 is acceptable to meet durability requirements.

2.2 Timber treated with Lifewood preservatives will meet the Hazard Class requirements of MP 3640 (NZS 3640), provided it is treated in accordance with the NZTPC (New Zealand Timber Preservation Council) Quality Manual.

## Product Information

### 3. Description

3.1 Lifewood preservatives are CCA timber preservatives available in an oxide or salt form. The active ingredients of the preservatives are:

- Oxide form – chromic acid, copper oxide and arsenic acid.
- Salt form – copper sulfate, sodium dichromate and arsenic acid.

3.2 The oxide form is a dark black/yellow water-based liquid with a slight metallic odour. The salt form is also water-based with a slight metallic odour, but is dark brown in colour.

### 4. Handling and Storage

The preservatives are supplied by bulk delivery, or in 1000 litre individual containers. Handling and storage of the products must be as set out in the Osmose® NZ Material Safety Data Sheet (MSDS) for each product. Labels that show similar information to the MSDS for handling and storage are attached to the containers. These labels also include directions for use of the products.

### 5. Safety Precautions

When handling or using the preservatives, the procedures set out in the Osmose® NZ MSDS must be followed at all times. The preservatives, like all other CCA preservatives, in their liquid form will cause severe burns to the skin and may seriously damage the eyes if contact is made. Some of the main safety features when using the preservative are summarised as follows, but the MSDS must always be referenced for full details:

- Personal protection in the form of skin and eye protection must be used when handling the products, as well as an approved respirator in accordance with AS/NZS 1715.
- The products must be used with adequate ventilation, with local exhausting required in confined spaces.
- The products must be stored and transported in accordance with their Dangerous Goods Class, Subsidiary Risk, Packaging Group, Hazchem Code and Poisons Schedule.
- Spills and disposal must be dealt with according to instructions in the MSDS.

## Design Information

### 6. General

6.1 Osmose® NZ promotes timber that has been treated with

the preservatives as Lifewood. However, the treated timber product itself has not been assessed as part of this Certificate because of the possible multiple number of treatment plants using the products, and the possible multiple sources of supplies of timber to the treatment plants. Lifewood timber is therefore outside the scope of this Certificate, but relevant aspects of it may be commented on within the Certificate. Information about Lifewood timber can be obtained from Osmose® NZ. Lifewood timber can be identified by labelling or burn branding attached to the ends of individual pieces.

6.2 Lifewood preservatives provide protection to timber against attack from insects, decay and marine borers up to Hazard Class H6 as listed in MP 3640 (NZS 3640) and AS 1604. After treatment, the minimum retentions on a %mass/mass basis must be as required by MP 3640 (NZS 3640) or AS 1604 for the timber end use Hazard Class. Timber must then be labelled according to its Hazard Class.

6.3 Timber treated with Lifewood preservatives may be used in any situation, subject to its Hazard Class and structural and other requirements for each particular application. NZS 3602 gives guidance to designers for the selection of timber for hazard situations and the Hazard Class required for the timber. It is up to designers and users to select timber of the correct Hazard Class for the hazard situation to which it will be exposed.

6.4 The proper care and handling of treated timber prior to use can have a bearing on its efficiency in service. MP 3640 gives guidelines in this area, which must be followed at all times. Note should be taken in particular of the requirements in regard to cut ends and the protection of areas where the timber has subsequently been cut or machined. Where the timber has been cut, notched, or bored, supplementary protection using Protim Reseal will be required in accordance with the instructions of Osmose® NZ. This supplementary treatment cannot be expected to be as effective as the original treatment.

### 7. Structure

7.1 When sawn timbers have been treated with Lifewood preservatives in accordance with this Certificate, the timber design strength properties given in NZS 3603 will not be reduced.

7.2 When roundwood timbers have been preservative-treated involving steaming, timer designers must take account of the requirements of Section 7.5 of NZS 3603 on the timber design strength properties.

### 8. Durability

8.1 Timber that is not naturally durable can be treated with Lifewood preservatives to prolong its life in order to meet durability requirements of the NZBC, or to meet expected serviceability requirements. The actual durable life of Lifewood-treated timber will depend on selection and use of the correct Hazard Class of timber, and its use in the correct hazard situation.

8.2 Lifewood-treated timber can, in certain situations, be very corrosive on metal components used in conjunction with the timber. Therefore, aluminium, zinc/aluminium alloy and electro-galvanised fixings, fasteners and nails must not be used with Lifewood-treated timber.

8.3 Where metal flashings and the like containing aluminium or zinc are in contact with, or experience runoff from Lifewood-treated timber, such as may be found with zinc/aluminium coated mild steel flashings, they may experience high corrosion rates. To obtain maximum life from flashings in these situations they must either be separated from the timber and water runoff, or be coated with a factory-applied organic

coating, (e.g. pre-painted steel coil).

8.4 Requirements for protection from corrosion of metal fixings, fasteners and nails used with Lifewood-treated timber will depend on the durability requirement of the NZBC for the particular building work undertaken, and the exposure zone, location and environment of the fixing, fastener or nail. NZS 3604 is a means of compliance for durability of fixings, fasteners and nails for non-specific designed buildings, and in this instance may also be used for specifically designed buildings. Where a 50-year durability is required (structural applications), fixings and fasteners in accordance with NZS 3604 Table 4.1 will meet NZBC compliance, and materials for nails must be in accordance with Table 4.3.

## 9. Timber Treatment

9.1 Lifewood preservatives must not be used in their concentrated form. They must be diluted with water to give solution strengths to obtain the target Hazard Class of the treated timber (and hence retention required).

9.2 Treatment must be carried out to the standards stated in MP 3640 (NZS 3640) or AS 1604, and as recommended by the NZTPC, using pressure/vacuum cycles.

## 10. Timber Finishing

10.1 Timber treated with Lifewood preservatives will initially have a green tinge, and eventually like all other exposed timber, will in most cases turn light grey.

10.2 Timber finishing may be carried out using oil or latex-based paints or stains. As for painting or staining any material, the surfaces must be dry and free from any deposits that may affect the application, adhesion or performance of the paint or stain system.

## 11. Hazardous Building Materials

11.1 Freshly-treated timber must be allowed time to 'dry' and time for the chemical to fix before being handled and used to ensure residual treatment compounds do not contact hands or food for example, and become ingested.

11.2 Lifewood-treated timber off-cuts must not be burnt as highly toxic fumes/vapours may be produced. When sawing, sanding or machining Lifewood-treated timber, goggles should be worn to protect the eyes, and a dust mask should be worn.

11.3 Lifewood-treated timber should not be used where routine contact with food or animal feed can occur. It must not be used for the likes of cutting boards, counter tops, beehives, compost, mulch, or structures or containers for storing human food or animal feed. It must also be used where the timber may come in direct contact with drinking water.

## Basis of Appraisal

The following is a summary of the technical investigations undertaken.

## 12. Investigations

12.1 Note has been taken by BRANZ of the history of use of CCA-treated timber products in New Zealand and overseas for 50 years or more. Note has also been taken of advice and precautions on the use of CCA wood preservative posted by the American Environmental Protection Agency (US EPA) on its web site.

12.2 BRANZ technical experts have given opinions on the likely effects of CCA treatment on metal components used in

conjunction with the treated timber.

12.3 Opinions and assessments have been made of CCA-treated timber by the Standards Technical Committee before inclusion in MP 3640.

12.4 The manufacturer's technical information contained within product labelling has been examined by BRANZ and found to be satisfactory.

## 13. Quality

13.1 The manufacture of Lifewood preservatives has been examined by BRANZ, and details of the quality and composition of raw materials used were obtained and found to be satisfactory. Lifewood preservatives manufacture has been assessed and registered as meeting the requirements of ISO 9002 by Telarc, Registration Number 242.

13.2 Quality of manufacture of the products is the responsibility of Osmose® NZ.

13.3 Quality of treatment of the timber in accordance with the instructions of Osmose® NZ is the responsibility of the timber treaters.

13.4 Specifying the correct Hazard Class of Lifewood timber for the intended end use is the responsibility of the building designer.

## 14. References

- AS 1604.1 – 2000 Specification for preservative treatment – Part 1: Sawn and round timber.
- MP 3640: 1992 Minimum requirements of the NZ Timber Preservation Council Inc.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- NZS 3602: 1995 Timber and wood-based products for use in building.
- NZS 3603: 1993 Timber structures standard.
- NZS 3604: 1999 Timber framed buildings.
- NZS 3640: 2002 Timber preservative. (Draft)
- The Building Regulations 1992, up to, and including, January 2002 Amendment.

## Classifications For Treated Timber

### H1 Hazard Level

**Exposure** – inside above ground. **Conditions** – completely protected from the weather and well-ventilated. **Biological Hazards** – insects other than termites (i.e. lyctid or anobiid). **Uses** – framing, flooring, furniture, and interior joinery.

### H2 Hazard Level

**Exposure** – inside above ground. **Conditions** – completely protected from the weather and well-ventilated. **Biological Hazard** – borers including termites. **Uses** – framing, flooring, furniture and interior joinery.

### H3 Hazard Level

**Exposure** – outside above ground. **Conditions** – subject to periodic moderate wetting and leaching. **Biological Hazard** – moderate decay, borers and termites. **Uses** – weatherboard, fascia, window joinery, framing and decking.

### H4 Hazard Level

**Exposure** – outside in ground. **Conditions** – subject to severe wetting and leaching. **Biological Hazard** – severe decay, borers and termites. **Uses** – fencing, greenhouses, pergolas and landscaping timber (non-critical structures).

### H5 Hazard Level

**Exposure** – outside in ground contact with or in fresh water. **Conditions** – subject to extreme wetting and leaching and/or where the critical use requires a higher degree of protection. **Biological Hazard** – very severe decay, borers and termites. **Uses** – retaining walls, piling, house stumps, building poles, cooling tower fill.

### H6 Hazard Level

**Exposure** – marine water. **Conditions** – subject to prolonged immersion in sea water. **Biological Hazard** – marine wood borers and decay. **Uses** – boat hulls, marine piling, jetty cross bracing, landing steps etc.

### Osmose® NZ Information about Treated Timber Hazard Classes.

(See NZS 3640 and NZS 3602 for specific details regarding Hazard Classes and uses of timber in building).

In the opinion of BRANZ, Osmose® Lifewood® K33 Oxide and Salt CCA Timber Preservatives are fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided they are used as set out in this Certificate and any Amendment.

The Appraisal Certificate is issued only to the Certificate Holder, Osmose® NZ, and is valid until further notice, subject to the Conditions of Certification.

### Conditions of Certification

1. This Certificate relates only to the product as described herein.
2. The Certificate Holder:
  - a) continues to have the product reviewed by BRANZ;
  - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
  - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. This Certificate must be read, considered and used in full together with the technical literature.
5. BRANZ makes no representation as to:
  - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
  - b) the presence or absence of any patent or similar rights subsisting in the product or any other product.
6. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.
7. This Certificate does not address any Legislation, Regulations, Codes or Standards, not specifically named herein.

For BRANZ



R I Burnett



M E Reed

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