

# Timber Defence Technical Data Sheet

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Last updated 20<sup>th</sup> March 2019



## Timber Defence – TD TDS 001

### Overview

Fire Defender Timber Defence is the most cost effective fire retardant solution for timber on the market today.

Fire Defender Timber Defence has been specially developed to passively impregnate raw and unsealed timber in a multitude of situations creating a deep seated, fire retardant treatment that when dry, provides a sealed surface ready to top coat.

Great for retaining natural or stained timber look and can be top coated with solid colours. Also suitable for most treated timbers.

### Physical Properties

Appearance	Green coloured liquid.
Boiling Point	Approximately 100°C at 100kPa.
Freezing Point	-0 C (water is solvent)
Vapour Pressure	2.37 kPa at 20°C (water vapour pressure).
Specific Gravity	1.10
Flash Point	Non Combustible
Flammability Limits	Not Applicable
Solubility in Water	Completely soluble in water.
Auto Ignition Temperature	Not applicable - does not burn.
Rel Vapour Density	No data.
pH	No data.
% Volatile by volume	No data.

### Product Features

- Manufactured in Australia by Australians
- Most cost effective solution available
- Appearance. Tinted green/blue, dries clear
- Odourless
- Clear timber finish or solid coloured finish.

### Testing & Results

Timber Defence when applied as specified, meets the following specifications on PINE TIMBERS ONLY.

- Tested by the CSIRO Division of Materials, Science and Engineering in accordance with Australian Standard 3959:2009 Construction of Buildings in bushfire-prone areas **Appendix F. Please refer to our website link <http://www.firedefender.com.au/using-timber-defence> for important detail.**
- Testing is ongoing – please check with Fire defender for additional test results.

### Intended Application/Use

Timber Defence was developed as a fire retardant for timber; it works exceptionally well on softwoods – has little effect on hardwoods. This product has been designed to limit the treated substrates ability to become part of the fuel source of a fire, therefore potentially extending the safe exit time from a fire. Ideal for use on exterior timbers in bushfire zones.

Timber Defence is suitable for use on construction frames, roof trusses flooring, decking, joists and bearers, walls and ceilings, It is suitable to use on most interior – raw or unsealed timber surfaces in and around buildings such as bedrooms, kitchens, hallways and access areas, around barbeques, garages, etc. It is ideal in essential thoroughfare areas used to exit the building should a fire occur. It can also be used internally in RV vehicles, boats and other applications wherever enhanced fire safety measures are demanded or desired.

### Limitations

Not suitable for use with timber that has been

- Given a water resistant treatment.
- Treated with LOSP that has wax content.
- Pre painted or sealed timbers
- Laminated or veneered
- Limited success on plywoods

### Durability

- Timber Defence is a timber impregnation system which once dry, will not require reapplication for the life of the timber. Timber Defence is durable and can withstand normal weather exposure however, there will be slight surface deterioration where exposed to weather – this will not affect the performance of the product. For long term durability the surface should be sealed with a good quality sealer or paint.



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## Surface Preparation

Do not apply to sealed, laminated or previously painted surfaces. Ensure the surface is clean, dry and free of any dirt, grease, wax or contaminants prior to application. Always mask or cover all adjoining surfaces prior to application works. Product may etch surfaces and once cured is difficult to remove. On contact with Timber Defence, some metals can react and discolour and staining may occur to the timber being treated. Therefore seal all nail holes with putty or similar and remove all hardware (e.g. latches, locks, hinges or screws). Once dry the hardware can be safely reattached.

## Mixing Instructions

Thoroughly mix Fire Defender Timber Defence prior to use either by shaking the bottle or with a flat stirrer in a scooping motion in a tin, and occasionally during use. Do not thin/dilute this product or mix with other paints.

## Application Procedure

### Brush, Spray and Roller Applications

Product may slightly darken the appearance of some timbers. A trial application is recommended. Fire Defender Timber Defence can be applied with a good quality brush, roller or by spray.

- Apply two liberal (2) coats to achieve maximum penetration. Apply 2nd coat immediately after first coat has absorbed into timber. This will depend on how dry the timber is, or hot or cold weather and/or where the work is being done e.g. indoors or outdoors.
- This is a wet on wet application. Apply small areas at a time 2-4sq metres depending on absorption rate. Timber Defence also seals the timber so it's important the second coat goes on while the first coat is wet.

Do not apply Fire Defender Timber Defence if relative humidity is above 80%, rain is imminent or the temperature is below 10° or above 30° during the application or drying periods.

### Staining

There are two types of stain products on the market.

- Traditional type stains that do not seal the timber. They can be spirit or water based. If staining of the timber is desired with these types of stains, stain before the application of the fire retardant coats and before a sealer coat has been applied. These types of stains do not hinder Timber Defences ability to absorb into the timber.
- The second type are varnishes and semi-gloss and full gloss clear stains. These types of stains do seal the timber therefore Timber Defence must be applied to the timber prior to application of these types of stains.

### Mid / Top Coat

Timber Defence provides a good surface for direct application of top coats, clear or solid colours – it forms an excellent adhesive surface. Another sealer coat may be applied if desired prior to application of top coats. Refer to Top Coat Manufacturers Guidelines for number of coats and application information.

### Wash-up

Clean application equipment and any unwanted splashes or spillage from surrounding areas with water *immediately*. Water solubility of the liquid reduces rapidly once the product begins to set and then harden. Once hardened the product can be difficult to remove.

## Drying Times

### Application and Drying Times

<b>Stain</b>	Refer to above section
<b>First Coat</b>	Apply as a liberal coat
<b>Second Coat</b>	As soon as 1 <sup>st</sup> coat has soaked in
<b>Drying Time</b>	<b>48-72 hours</b> depending on humidity and temperature
<b>Sealer Coat</b>	Not required but can be applied if desired
<b>Top Coats</b>	Apply as per manufacturer's recommendations

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	<p><b>Drying times may be extended in cooler or humid conditions.</b></p> <p><b>** Unlike paint which is a coating that dries relatively quickly on the surface of the timber, Timber Defence is designed to be absorbed into the timber. Because of this the timber will take much longer to dry as you are actually waiting for the timber to dry; not a coating.</b></p>
<b>Coverage</b>	<p>The coverage rate will vary somewhat in accordance with the type of timber being fire retarded, but as on average a litre will cover 4-5 square metres of timber (2) coats finished. This is required to achieve the desired penetration and coverage. On light weight timbers a third coat may be required.</p>
<b>Cleaning &amp; Maintenance</b>	<p>Timber Defence once dried, sets as a timber sealer. It can be cleaned with any general purpose cleaner and will tolerate low/medium water pressures for rinsing. If over coating Timber Defence with a sealer or paint product, follow the cleaning and maintenance requirements for that product.</p>
<b>Storage &amp; Shelf Life</b>	<p>Twenty-Four (24) months in a full, airtight container. Store in a cool, dry location away from sunlight.</p>
<b>Safety Recommendations</b>	<p>Provide adequate ventilation during use. Do not breathe vapour/spray. Freshly opened liquid may cause skin irritation. Avoid contact with the skin and eyes by wearing suitable gloves, clothing and eye protection. In the event of contact, wash skin immediately with clean water to help minimise possible irritation. If any product gets into the eyes, wash immediately and repeatedly for <i>at least</i> 15 minutes with an eye wash liquid or clean running tap water. For further advise, contact a doctor or poisons information centre on 131126 (Australia only).</p>
<b>Issues</b>	<p>Product does not appear to be drying – remains tacky.</p> <ul style="list-style-type: none"><li>• This only occurs if too much time has passed and the second coat was applied after the first coat has dried or semi dried. The second coat cannot soak in therefore sits on top of first coat and remains tacky. This can also occur if the second coat was too heavy and the timber cannot absorb any more.</li><li>• Solution. The only option available is to wipe the excess product off with regularly rinsed damp cloths. This is a safe option and will not affect product that has already absorbed into the timber and dried.</li></ul> <p>Top clear coat has gone cloudy.</p> <p>This generally only occurs with clear finishes where the Timber Defence coating has not dried completely prior to the application of the clear finish or the clear finish has been applied during high humidity. It's either moisture content in the timber or atmosphere that is the culprit. Refer to the topcoat manufacturer for solution. Generally this self resolves and the cloudiness disappears when the moisture in the timber dries.</p>
<b>For Surveyors and Certifiers</b>	<p><b>How to determine if Timber Defence has been applied.</b></p> <p>Generally the client will be able to produce empty/used bottles of product or a receipt, but this is not proof of application. There are two ways to check;</p> <ul style="list-style-type: none"><li>• Pour a glass of water on the timber; the water should bead off with no water penetration into the timber.</li><li>• Second, scratch the surface of the timber. It should appear as though you have scraped a light coating.</li></ul>



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## Disclaimer

### **TEST FIRST *BEFORE* ACTUAL USE. TRIALS ARE ESSENTIAL!**

These suggestions, recommendations herewith and other relevant product data for 'the Fire Retardant Treatment' are based on information we believe to be reliable. They are offered in good faith, but as conditions and methods of use of our products are beyond our control, are without guarantee. We recommend that the prospective user, specifier, owner or purchaser determine the complete suitability of this and all our products and suggestions/recommendations for their use and purpose before adopting them on a commercial scale.

## Important Notices:

All information is given in and the ability (the manufacturer) product(s) are supplied with, good faith but without warranty for the final composite product or material in which it/they is/are used or an applied ability coating as their use is beyond the manufacturer's control. The manufacturer is not responsible for any loss or damage arising from failure to follow their recommendations for use. It is the user's/purchasers' responsibility to ensure that complete suitability of any of these products, for any use, be completely confirmed by thorough prior testing and evaluation. The information submitted in this and other specific product publications is based on current knowledge and experience. In view of the many factors which may affect processing. Application and the results obtained this data and others do not relieve processors and users from the responsibility of carrying out their own tests and experiments, neither do they imply any legally binding assurance of certain properties or suitability for a specific purpose. It is also the responsibility of those to whom we supply our products, to ensure that any proprietary rights and existing laws and legislation are observed.

