

Recommended Practice / February 2004

Issued by: Timber Queensland Limited

## Introduction

This data sheet covers seasoned timber panelling for use on walls and ceilings. For continued satisfactory performance of this product, it should be fixed and finished in accordance with the recommendations included herein.

## Species

Timber panelling is available in cypress and a range of hardwood and softwood species. With some timbers there will be a consistency in colour, texture and grain. With others, there may be a range of features and contrasting colour between the lighter sapwood and darker heartwood.

## Grades

Panelling may be graded in accordance with the respective Australian Standards or to a grade specified by the manufacturer. For availability and suitability of panelling grades the supplier should be contacted and if required samples obtained prior to purchase.

## Ordering

When ordering panelling, the following should be considered:-

- Species
- Grade description
- Profile description
- Set lengths for vertical panelling (2.4 m or 2.7 m lengths)
- Random lengths (allow 10% wastage) for horizontal or diagonal panelling

## Storage and Handling

Timber merchants should fully protect timber panelling to ensure minimal change in moisture content during storage and handling. The builder is responsible to ensure that the panelling remains at the appropriate moisture content at the time of installation. Panelling should therefore be delivered to site as close as possible to the time of installation and be protected from weather exposure and other sources of dampness on site.

For short term protection, panelling may be stored on site, provided packs are fully wrapped in plastic and protected from rain and sun exposure. Packs should be a minimum of 150 mm above ground with supports at 450 mm centres. The ground should be reasonably level and moisture uptake from the ground should be prevented.

### Notes:

1. Should panelling become wet, problems such as stain, distortion, opening-up of joints, etc. may occur. Continued wetting may also promote mould growth or blue stain.
2. Seasoned panelling (if unsealed) readily absorbs moisture. If this occurs prior to installation, subsequent shrinkage may create wide gaps between the boards, and may be sufficient for the tongue to pull out of the groove.

## Moisture Content Prior to Installation

Timber panelling is usually supplied at an average moisture content between 11% and 13% and most boards can be expected to be within a few percent of the average. This suits coastal Queensland where the average moisture content of internal timbers is approximately 12%. Where conditions are drier, such as inland Queensland or an air-conditioned building, a lower average moisture content, within the range from 8% to 12% can be expected. In these situations where the average moisture content of the supplied panelling, differs from the in-service average, consideration should be given to acclimatising the product prior

to installation. To acclimatise timber, boards should be removed from the pack and all surfaces should be exposed to the installation environment, for a period of at least two weeks. Movement after installation (swelling on moisture uptake, shrinkage on moisture loss) due to changes in moisture content can therefore be minimised if panelling is fixed close to the average in-service moisture content.

## Spacing of Supports

Adequate support is an essential requirement for smooth, flat, wall and ceiling panelling. This can be achieved by fixing panelling to wall framing, rafters, joists, trusses or battens spaced at no greater distance than shown in Table 1.

**Table 1: Maximum Spacing of Supports**

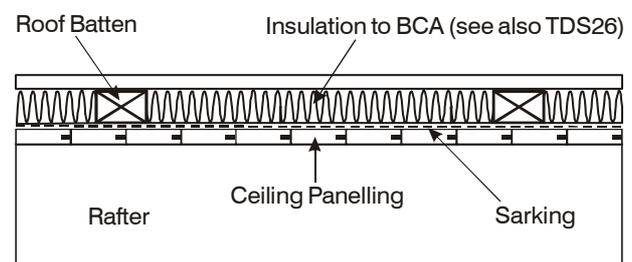
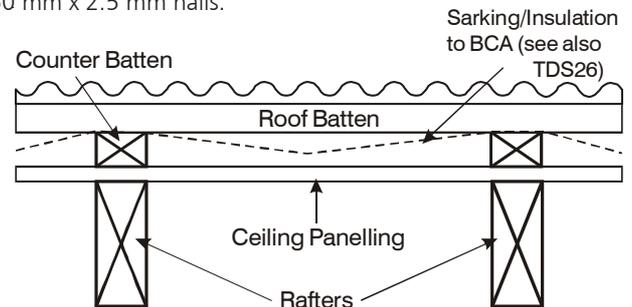
Application	Linings Thickness (mm)	Spacing (mm) of Supports at:	
		90° to Lining	45° to Lining
Wall	12	900	600
	19 & 20	1350	1000
Ceiling	12	600	450
	19 & 20	1200	900

Note: For lining used as a non-trafficable roof, AS1684 may require reduced spacing of supports.

## Ceiling Panelling Fixed on Top of Rafters

It is important to protect ceiling panelling, fixed to the top of rafters, from rain or heavy dew. Installation during wet periods should be avoided. Directly after installation the panelling should be covered with a vapour permeable sarking. If counter battens are used 'sarking' may be fixed over the counter battens. In either case it is important to install the roofing as quickly as possible after the panelling is in place.

Panelling should be fixed with two flat head nails through each board at each support. For 12 mm thick panelling, 40 mm x 2.5 mm nails should be used and for 19 mm or 20 mm thick boards, 50 mm x 2.5 mm nails.



## Wall Panelling and Ceiling Panelling Fixed to the Under Side of Rafters

Where the wall or ceiling surface is uneven, dressed 42 mm x 19 mm (minimum) battens may be installed for 12 mm thick panelling, or for 19 mm and 20 mm panelling 42 mm x 35 mm (minimum) may be used. Where it is necessary to pack out the battens at fixing points to achieve a plain surface, timber wedges or other rigid materials may be used.

Face nailed panelling should be fixed with two bullet head nails through each board at each support. For 12 mm thick panelling, 40 mm x 1.6 mm nails should be used and for 19 mm or 20 mm thick boards, 50 mm x 1.8 mm nails. The heads may be left flush with the surface, or punched and filled with a colour matching wood filler.

Boards with cover widths up to 90 mm may be secret nailed with one nail at each support. For cover widths up to 135 mm, secret fixing may be achieved if both secret nailing and gluing are used in combination. Nail sizes to be the same as for face nailed panelling.

## Finishing

Clear finishes are the most serviceable for interior applications, however care is necessary when choosing the finish as some finishes have the potential to bond board edges together at the tongue and groove joint. This may result in wide irregular gapping between some boards or may cause some boards to split. It is therefore recommended that finishes and finish systems be used that do not promote gluing. Tung oil based finishes or finish systems containing a bond breaking sealer followed by polyurethane top coats are considered appropriate.

Stains may be used to achieve special colour effects, however experimentation first with a number of offcuts is recommended. Where a clear finish is used over a stain, it is necessary to check with the manufacturer to ensure the clear finish is compatible with the stain.

Finishes should be applied in accordance with the manufacturer's specifications. Panelling can 'darken or yellow' very quickly, if exposed to direct sunlight. Darkening may also occur over a period of years through indirect sunlight which may cause colour variations between the timber and the filler. This darkening may be significantly reduced if water based finishes are used.

## Movement Due to Moisture Changes After Installation

Timber is a natural product that responds to changes in weather conditions. During periods of high humidity timber will absorb moisture from the air and this causes it to swell or increase in size. Conversely, during drier times when humidities are low, timber will shrink, reducing in size. Unless T & G panelling is placed in a permanently controlled environment, it will move in response to changing environmental conditions. Gaps between individual T & G boards can be expected as the panelling accommodates seasonal changes. Provided the moisture content was not too high at installation or the finish has not bonded boards edges together, the panelling should be able to accommodate this movement. Exposure to the sun through windows and heat from fireplaces may cause additional shrinkage in affected areas. It is also important to note that finishes will not prevent timber movement due to moisture changes, but may reduce the rate of response to these changes.

### NOTE

1. Moisture uptake after installation may cause 'tenting' of individual boards, or the accumulated expansion of the panelling may dislodge the adjacent structure.
2. Applying a finish to the back of the boards prior to installation can assist in reducing moisture change effects.

## Precautions When Installing Panelling in Wet Areas

Moisture laden air, which can occur in bathrooms and laundries, can adversely affect untreated and inadequately finished panelling. When panelling is installed in these rooms good ventilation is necessary. Recommended practices for installing panelling in these rooms are:-

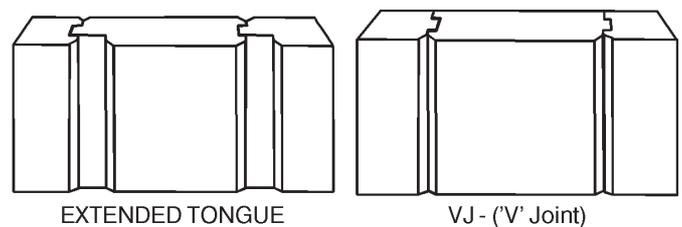
- a vapour barrier should be fitted behind the panelling to protect adjacent walls from humid air.
- cut panelling to size and dip or completely flood brush with a water repellent preservative.
- apply one coat of clear finish to all surfaces of the panelling (including ends) prior to installation and two to four additional coats of the finish onto the exposed surfaces after installation.
- fix the panelling using non-corrosive nails such as hot dipped galvanised, silicon bronze or stainless steel nails.

Panelling is not recommended for wall areas where it would receive frequent wetting e.g. shower and bath surrounds, basins and splashbacks.

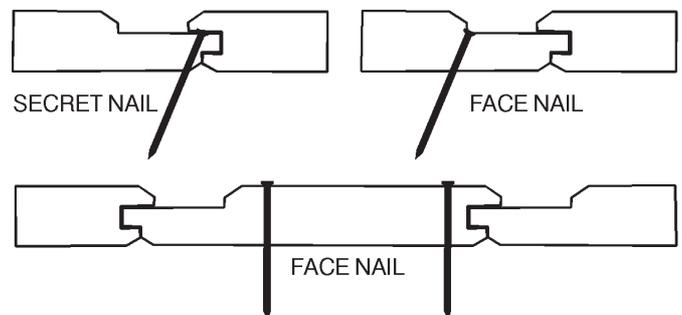
## Examples of Profile Types

Note:

Other profiles are available subject to negotiation with individual suppliers/manufacturers.



### FIXING OPTIONS



## Safe Working

Working with timber produces dust particles. Protection of the eyes, nose and mouth when sanding, sawing and planing is highly recommended. Refer to tool manufacturers for safe working recommendations for particular items of equipment.



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