

# Construction Benefits –Termites

Subterranean termites are an insect that feeds on materials containing cellulose (such as wood, paper, cardboard and grass) and are a well-established pest in mainland Australia. Termites can be a problem for home and building owners when not correctly managed and an infestation can reduce the structural integrity of buildings. Good preventative practices can help reduce the risk of damage from termites.

## Termites

Termites are a concern for all mainland Australians, particularly in Northern areas where termites are more prevalent due to the warmer climate. Subterranean termites travel underground and may enter a building to feed on the materials in the structure, potentially destroying the integrity of the building. Termites are capable of traversing through cracks in concrete or brick work to feed on cellulose material such as timber.

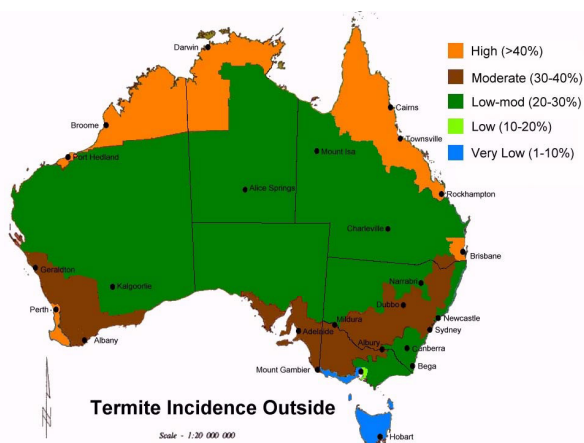


Figure 1 Termite incidence from a survey of households carried out by the CSIRO (Source: (Cookson & Trajstman, 2002)

Preventing termites from entering the building is a very effective management practice. There are several preventative approaches that can be adopted when building with timber, including:

- Use of naturally termite-resistant timbers or timber that has been treated with a termiticide preservative – either as an envelope treatment or full vacuum pressure impregnation of the sapwood.
- Use of a physical barrier layer that minimises the

## Quick Facts

1. Termites are present throughout mainland Australia; the warmer tropical regions are more conducive to year-round feeding.
2. Termites may travel up to 50 metres in search of food, and subterranean termites can enter the building from underneath the ground.
3. Good management practices include the use of naturally termite resistant timber, treated timber, chemical treatments and creating physical/chemical barriers between the soil and the structure.
4. Australian Standard AS3660.1 Termite Management offers a variety of physical and chemical barrier systems deemed to meet the National Construction Code - Building Code of Australia (BCA) requirements.
5. Good design including inspection zones separating timber from the ground will help identify entry points and can avoid termites becoming established.
6. Natural termite resistant heartwood is readily available from Queensland grown timber and includes spotted gum, ironbark and cypress pine.

risk of termites entering the structure. Generally termites enter from the ground so a physical barrier or separation layer between the soil and the structure can either stop the termites altogether or expose their mud galleries for early detection.

- Effective physical barriers may include a raised timber floor combined with ant caps (metal barrier); or using a concrete slab combined with a stainless steel mesh or crushed aggregate granite for the ground floor, and then building with timber in the upper floors.
- Termiticides can also be added to the soil to form a chemical barrier that can prevent or deter termites from entering a structure. However, these barriers have a limited life in the soil and will need to be replenished to remain intact – this will be outlined in the instructions on the termiticide label.

In addition, before starting construction, a licensed pest controller should be engaged to inspect for any signs of termite activity, and the site should be cleared of existing wooden debris.

In any building project it is important to comply with relevant standards and codes to reduce the risk of termite attack. Australian Standard AS3660.1 Termite Management outlines standards for termite protection in new constructions across all climates. To comply with the BCA, these procedures must be followed.

Regular monitoring and assessment is necessary throughout the building life and an inspection by a professional pest manager should occur annually or as needed. Building design should allow for adequate access for inspections to be carried out effectively.



Figure 2 Termite management for this house includes concrete slab physical barrier coupled with chemically impregnated plastic perimeter and penetration barriers and termite treated wall and roof framing.

## Case Study – Stella Maris Church

The Stella Maris Church, located in Maroochydore, Queensland, incorporates both a physical and chemical barrier system. The Hyne Timber Glue Laminated Timber columns are treated with a termiticide that repels termites and other wood destroying insects. The treatment is impregnated into the sapwood cells of the timber, creating a protective envelope



that lasts for the design life of the building. The steel base connections add an additional layer of protection forming a physical barrier – preventing subterranean termites from travelling through the centre of the timber unseen.

Figure 3. Glue laminated timber columns used in the construction of Stella Maris Church, Maroochydore. Image courtesy of Hyne Timber.

### Further Reading

Cookson, L., & Trajstman, A. (2002). *Termite Survey and Hazard Mapping*. CSIRO and Forest and Wood Products Research and Development Corporation.

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Wood Solutions. (2015). *Timber service life design*. Retrieved from [www.woodsolutions.com.au/system/files/WS\\_TDG\\_05\\_1\\_17.pdf](http://www.woodsolutions.com.au/system/files/WS_TDG_05_1_17.pdf)