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Proposed amendments to the BCA Housing Provisions - Termite Risk Management

Purpose

To provide details of proposed amendments to the Termite Risk Management provisions for class 1 and 10 buildings to be contained in Part 3.1.3 of Volume 2 of the Building Code of Australia (BCA).

The changes will be included in Amendment 8 to the BCA as a Queensland Variation, which will commence on 1 January 2001.

Background

In response to mounting industry and public concerns regarding the effectiveness of the current termite management systems, the Queensland Government has reviewed the current provisions contained in the BCA.

The provisions were reviewed in consultation with industry, community, local government and State government representatives. The review included two workshops, which identified the following main issues of concern:

- Currently available chemicals used in a hand sprayed chemical barrier do not have a reasonable life span when compared to the life of the building. If installed under a concrete slab, retreatment or replenishment may be difficult.
- Chemical barriers applied to the perimeter of the house are being inadvertently damaged or bridged. This may occur when the occupiers of a house carry out landscaping or when contractors are engaged to perform work for the owner.
- The current provisions of the BCA only require the structural elements of the building to be protected against termite damage. Consumers also expect the protection of non-structural elements such as skirtings and architraves.
- There is a basic assumption within AS3660.1 - Termite Management Part 1: New building work, that regardless of the type of termite management system used, regular competent inspection is necessary to ensure it has not been bridged or breached and is properly maintained. This appears not to be occurring, perhaps as a result of homeowner ignorance that a barrier has been installed. There is a need for homeowners to be made more aware of the type of termite management system installed in their home and how it should be maintained.

Summary of changes

The following is a summary of the main changes to the current provisions of Part 3.1.3 of Volume 2 of the BCA.

1. Hand sprayed chemical barriers

Australian Standard 3660.1 is a deemed-to-satisfy standard under the BCA. It currently permits the use of a hand sprayed chemical barrier under a concrete slab-on-ground.

Many of the currently available hand sprayed chemical barriers used under a concrete slab have a life span less than the reasonable life span of the building. This could result in the need for the chemical barrier to be replaced or replenished some time in the future. Unless adequate provision is made during the construction of the building for this to occur, the homeowner may be put in the unreasonable position of having to drill through the concrete slab to enable retreatment to be carried out.

The proposed amendments to the BCA will remove the option of hand spraying of chemicals, with a short life span, under a concrete house slab from the deemed-to-satisfy solution. The amendment will not ban the use of a hand sprayed chemical barrier under a slab, however, its use will need to be approved as an alternative solution. This will require proof that demonstrates the system will satisfy the performance criteria of the BCA.

2. Perimeter chemical barriers

Available evidence suggests that concealed termite entry is more predominant via the perimeter of the building. This may be as a result of inadequate treatment or by an unsuspecting homeowner or a contractor inadvertently breaching or bridging the barrier, for example, by placing a new garden bed over the existing barrier. In the case of slab-on-ground construction, AS3660.1 requires an under slab barrier and a barrier around the perimeter of the building to reduce the likelihood of concealed termite entry into the building.

The amendments will make it clear that in addition to any other relevant provisions of AS3660.1, a perimeter chemical barrier must be applied by excavating trenches, treating the exposed trench, backfilling with a suitable material and treating the backfill. This will provide a greater level of assurance that the perimeter barrier will be installed correctly.

Where a chemical perimeter barrier is used, the proposed amendments will include a new deemed-to-satisfy solution, which requires the barrier to be capped with a 300mm wide concrete “mowing strip”. This is to reduce the likelihood of inadvertent bridging or breaching the termite barrier. Other means of protecting the barrier can be approved as an alternative solution provided it can be demonstrated they satisfy the performance criteria of the BCA.

3. Protection of non-structural elements

The current provisions of the BCA only require the parts of a building that provide structural support to be protected against damage by termites. There has been wide support for more extensive protection to cover non-structural elements such as joinery items. The proposed amendments will require protection of skirtings, architraves, window reveals and doorjambs against termite damage, in addition to the structural members, which already require protection, if no other physical or chemical barriers are used.

4. Advisory notices for homeowners

Homeowner awareness that a termite management system has been installed in and around the building is important. It draws attention to the type of system installed, for example a chemical barrier which needs replenishment, and the responsibilities of the homeowner with regard to the need of on-going maintenance. The BCA currently requires a notice to be installed in a conspicuous location, such as the meter box, informing the homeowner of those details. However, because of the possibility of infrequent access to a meter box, a constant reminder of the existence of a termite management system may not be provided.

The proposed amendments will require at least two notices to be installed in the building. The amendments will not make it mandatory to place the additional notice in any specific location, however, as a guide, it has been suggested a kitchen cupboard is an appropriate location.

Detailed provisions

Attached is a summary of the proposed changes to the termite management requirements of Volume 2 of the BCA with explanatory notes. All changes to the current provisions have been underlined.
These provisions do not take effect until 1 January 2001.

Comments	BCA Provision
<p>The performance provisions will allow any system of termite management to be used, including new and innovative systems, provided it can be shown to meet the performance criteria.</p>	<p>PERFORMANCE PROVISIONS PART 2.1 – STRUCTURE</p>
<p>O2.1 Add a new O2.1 (d). The current Objective only considers structural failure. The Objective has been amended to reflect the safeguards provided to some non-structural elements such as skirtings and architraves.</p>	<p>Objective</p> <p>O2.1 The <i>Objective</i> is to–</p> <ul style="list-style-type: none"> (a) safeguard people from injury caused by structural failure; and (b) safeguard people from loss of amenity caused by structural behaviour; and (c) protect <i>other property</i> from physical damage caused by structural failure; <u>and</u> (d) <u>reduce the likelihood of buildings being damaged by subterranean termites.</u>
<p>F2.1 No change</p>	<p>Functional Statement</p> <p>F2.1 A building or structure is to withstand the combination of loads and other actions to which it may be reasonably subjected.</p>
<p>P2.1.1 The performance provision has been amended to require the approving authority to take into account the difficulties associated with the maintenance and replenishment of some systems. The performance provision is used when assessing an alternate solution.</p> <p>Section (a) applies to termite management that uses a system that is not expected to provide an on-going safeguard without being replenished. For example, a hand sprayed chemical barrier may only have a life expectancy of 10 years. The life expectancy of a house will be far in excess of 10 years so replenishment will be needed. A reticulation system installed under slab-on-ground construction may be one way of satisfying (a).</p> <p>Sections (b) will require the assessing authority and the designer to consider any difficulties associated with the installation and or maintenance of a termite management system. For example, it may not be possible to apply some types of external systems on buildings constructed up to or near the property boundaries (e.g., “O lot line”).</p> <p>Section (c) applies primarily to the perimeter treatment and is intended to provide a safeguard against inadvertent damage or bridging of a hand sprayed chemical barrier. It may not be necessary</p>	<p>Performance Requirement</p> <p>P2.1.1 <u>All primary building elements of a class 1 and 10 building must be protected against damage by subterranean termites by a suitable termite management system appropriate to –</u></p> <ul style="list-style-type: none"> (a) <u>the ability to replenish the termite management system if it relies on replenishment; and</u> (b) <u>the level of accessibility to enable the installation, maintenance and inspection of the termite management system to be carried out; and</u> (c) <u>the likelihood of the termite management system inadvertently being damaged or bridged.</u>

in all cases to apply this provision particularly if, because of the location of the system, interference is unlikely to occur.

3.1 New definition of “primary building element”.

Add new sub clauses (ii). The current definition only reflects the structural components of a building. The new definition is needed to identify the other (non-structural) parts of the building that a termite management system is required to protect.

DEFINITIONS

3.1 The following definitions are used in this part:

Primary building element means –

- (i) a member of a building designed specifically to take part of the building loads and includes roof, ceiling, floor, stairway or ramp and wall framing members including bracing members designed for the specific purpose of acting as a brace to those members; and
- (ii) door jambs, window frames and reveals, architraves; and skirtings.

Application

3.1.3 (a) The requirements of this Part apply when a *primary building element* of a Class 1 and 10 building is considered *susceptible* to termite attack.

(b) This Part does not apply to Class 1 and 10 buildings as follows (see also Figure 3.1.3.1):

(i) Buildings in areas where subterranean termites are not known to present a potential risk of attack to the *primary building elements* of the building.

(ii) Buildings that have all their *primary building elements* constructed of one, or a combination of, the following materials:

- (A) Steel.
- (B) Concrete.
- (C) Masonry.
- (D) Fibre reinforced cement.
- (E) Naturally termite resistant

3.1.3 (b) (ii) (E) Replace Appendix A with Appendix C to reflect changes to AS3660.1.

<p>3.1.3 (b) (F) Replace Appendix B with Appendix D to reflect changes to AS3660.1.</p> <p>3.1.3.0 Add P2.1.1 to lead in sentence to reflect new performance requirement.</p> <p>A new sentence has been added to (a) to address the problems associated with the use of hand sprayed chemical barriers under slabs. Clauses 8.8.2 and 8.8.3 of AS3660.1 currently permit a hand sprayed application to be used. The purpose of 3.1.3.0 (a) is limit chemical barriers to those that can be readily reinstated or replenished (e.g., a reticulation system under a slab).</p> <p>A new provision 3.1.3.0 (b) has been added to address the problems associated with the inadvertent bridging and breaching of perimeter chemical barriers. The concrete cap over the top of a hand sprayed chemical barrier will reduce the likelihood of the homeowner inadvertently interfering with the barrier. It will be narrow enough to enable retreatment to be carried out underneath it.</p> <p>3.1.3.0 (c) has been amended to require more than one notice to be installed in the building. It has been suggested a kitchen cupboard is an appropriate location because it will be more readily noticed. Infrequent access to a meter box means the homeowner is less likely to receive a constant reminder of the existence of a termite management system.</p>	<p>timber in accordance with Appendix C of AS 3660.1. (F) Preservative treated timber in accordance with Appendix D of AS 3660.1.</p> <p>(iii) Buildings in Tasmania.</p> <h2>A. ACCEPTABLE CONSTRUCTION MANUAL</h2> <h3>3.1.3.0 Acceptable construction manual</h3> <p><i>Performance Requirements P2.1 and P2.1.1 are satisfied for termite risk management if -</i></p> <ul style="list-style-type: none"> (a) <i>a termite barrier is installed in a Class 1 or 10 building to protect the primary building elements in accordance with AS 3660.1 – Termite Management Part 1: New building work, except that in regard to clause 8.8.2 and 8.8.3, where access for visual inspection in accordance with 3.7.2 is not possible, a hand sprayed chemical barrier must not be used; and</i> (b) <i>where a chemical barrier is used at the external perimeter of a building, the barrier must be-</i> <ul style="list-style-type: none"> <i>(i) installed by excavating trenches, treating the exposed trench and backfilling the trench with treated material; and</i> <i>(ii) protected by a 50mm thick concrete cover strip not less than 300mm wide measured from the external wall of the building; and</i> (c) <i>durable notices are installed in accordance with 3.1.3.2(b).</i>
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	<p>B. ACCEPTABLE CONSTRUCTION PRACTICE</p> <p>3.1.3.1 Application</p> <p>Compliance with this Part satisfies <i>Performance Requirements P2.1 and P2.1.1</i> for termite risk management.</p>
<p>3.1.3.2 (a) (i)– is amended by requiring a termite barrier that complies with AS3660.1 to also satisfy the requirements of 3.1.3.0 (a) of the BCA. Clause 3.1.3.0 (a) prevents clauses 8.8.2 and 8.8.3 (under slab chemical treatment) from being used.</p> <p>3.1.3.2 (b) refer to comments on 3.1.3.0 (c).</p> <p>Table 3.1.3.1 – Chemical barriers – has been amended to require chemical barriers to also comply with the relevant part of clause 3.1.3.0 of the BCA</p>	<p>3.1.3.2 Installation of termite barriers</p> <p>(a) A termite barrier or combination of barriers must be installed in accordance with–</p> <ul style="list-style-type: none"> (i) AS 3660.1 <u>subject to Clause 3.1.3.0 (a)</u>; or (ii) 3.1.3.3 for concrete slabs on ground; or (iii) 3.1.3.4 for suspended floors. (For barrier options see Table 3.1.3.1). <p>(b) At least 2 durable notices must be permanently fixed to the building in prominent locations, such as in a meter box and a kitchen cupboard or the like, indicating –</p> <ul style="list-style-type: none"> (i) the method of protection; and (ii) the date of installation of the system; and (iii) where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label; and (iv) the installer’s or manufacturer’s recommendations for the scope and frequency of future inspections for termite activity.

Explanatory information:

Durable notices

At least two durable notices must be fixed to the building in prominent locations advising the building occupants that the system should be inspected and maintained. The notices should be clearly written, on a material that will not deteriorate or fade over time and be located in or near the meter box and in a kitchen cupboard or similar location so that it can be easily seen and read by future owners of the building. Additional information may be included if desired by the person placing the notice.

Table 3.1.3.1 ACCEPTABLE TERMITE BARRIERS

PROTECTION METHOD (as per AS 3660.1)	FOOTING SYSTEM				Suspended Floors
	Concrete slab on ground complying with AS 2870		Concrete slab on ground not complying with AS 2870		
	Penetrations and control joints	Slab perimeter	Beneath slab (includes penetrations and control joints)	Slab perimeter	
Slab edge exposure	Not suitable	Suitable	Not suitable	Suitable	Not applicable
Termite shielding	Not suitable	Not suitable	Not suitable	Not suitable	Suitable
Stainless steel mesh	Partial; or Full system	Partial; or Full system	Full system	Full system	Suitable
Graded stone	Partial; or Full system	Partial; or Full system	Full system	Full system	Partial; or Full system
Chemicals	Full system beneath slab <u>subject to 3.1.3.0 (a), (b).</u>	Perimeter System <u>subject to 3.1.3.0</u>	Full system beneath slab <u>subject to 3.1.3.0 (a).</u>	Perimeter System <u>subject to 3.1.3.0 (b).</u>	Full system <u>subject to 3.1.3.0 (a).</u>