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TECHNICAL ASSESSMENT 316

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'Termortar'

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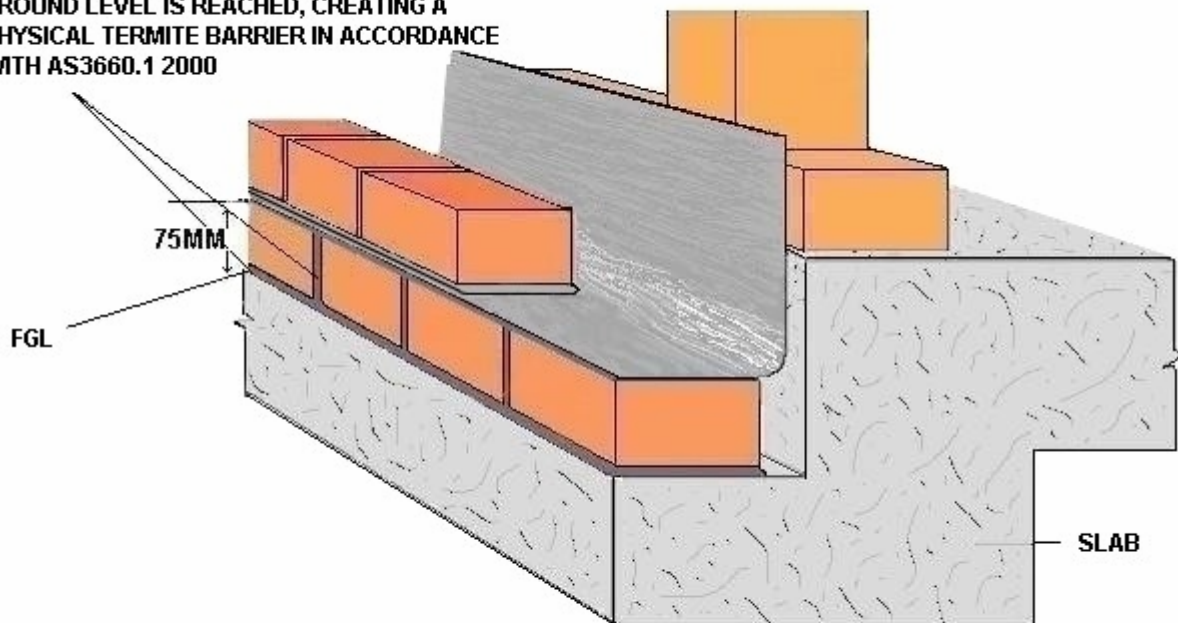
PURPOSE

A physical perimeter barrier to deter concealed subterranean termite entry

APPLICANT

Termortar Pty Ltd (ACN 111 294 814), 75 Lambton Road, Broadmeadow, New South Wales 2292 (Manufacturer)

TERMOTAR TO BE USED IN THE LOWER COURSES OF BRICKWORK UNTIL 75MM ABOVE GROUND LEVEL IS REACHED, CREATING A PHYSICAL TERMITE BARRIER IN ACCORDANCE WITH AS3660.1 2000



TERMOTAR COVER TO BEDS AND PERPS MUST BE CONTINUOUS WITH NO AIR VOIDS

TECHNICAL OPINION

In the opinion of CSIRO Appraisals, the Termortar system will satisfy the performance requirements of Standards Australia, AS 3660.1-2000 'Termite management – New building work' as a suitable physical barrier to deter concealed subterranean termite entry, provided that:

1. The Termortar system is installed by qualified bricklayers to the specifications outlined by Termortar Pty Ltd and in accordance with AS 3700-2001 'Masonry structures' (including amendments) as:
 - (a) A continuous perimeter barrier in new construction for concrete slab or raft floors and for new slab on ground construction,
 - (b) A permanent barrier in subfloor brickwork and brick pier.
2. The Termortar system is installed in accordance with the instructions supplied on each bag – 'Installation Instructions for Termortar' (10th October 2007).

Note: These specifications are available on request from Termortar Pty Ltd, 75 Lambton Rd, Broadmeadow, NSW 2292 (Ph 02 4969 8055 / Facsimile 02 4940 8400).
3. The Termortar is used in the lower courses of brickwork until 75 mm above finished external ground level is reached.
4. The Termortar can be used as a (termite resistant RENDER) for making good, honeycombing holes in the vertical slab edge and over brickwork (above and below finished ground level), to allow a straight working surface. The Termortar is to be used in conjunction with Termortar Concrete Primer.
5. The Termortar can be used in tilt slab construction as a barrier at the junction of the base of the tilt slab panel and the concrete footing /slab.
6. The following termite resistant products may be used in conjunction with Termortar.
 - a. Alterm termite proof silicone (no more solder)
 - b. Alterm physical termite barrier system.
 - c. Alterm slab penetration collars.
 (The above products are detailed in CSIRO TA 239.)
7. Inspections shall be carried out on an annual basis or more often if required by local conditions or regulations to ensure that no bridging or breaching of the barrier has taken place.
8. A durable notice in accordance with BCA requirements (Clause B1.4 (i)(ii) Volume 1 and Part 3.1.3.2 (b), Volume 2) is attached to the building which states that the Termortar system is installed.
9. A building site inspection shall be carried out prior to installation and the following precautions taken in accordance with Clause 3.2 of AS 3660.1:

- Eliminate nests of wood feeding species of subterranean termite found within the property boundaries, up to distance of 50m from the proposed building work;
- Excavate and remove all tree stumps, roots and logs from the building footprint;
- All timber off-cuts, debris, removable framework and other waste material should be removed from the area in which the barrier is to be installed.

Notes:

- (i) The Building Code of Australia draws attention to the need for regular inspections.
- (ii) The installation of a termite barrier does not negate the need for regular competent inspections. Any additions, alterations or earth works, including gardening adjacent to the building, may render the barrier ineffective. Such activity should be referred to a contractor for appropriate advice and treatment.
- (iii) Any additional treatment should be done in accordance with the relevant State or Territory regulations.

BUILDING CODE of AUSTRALIA 2007

In the opinion of CSIRO Appraisals, the systems described in this Technical Assessment and installed under the conditions listed herein will satisfy the Performance Requirements BP1.1 and BP1.2 (Volume 1 – Class 2-9 buildings) P2.1 and QLD P2.1.1 (Volume 2 – Class 1 and Class 10 buildings Housing Provisions) of the Building Code of Australia (2007).

To meet the requirements of Clause P2.1.1 (relevant to Qld only) (Volume 2 – Class 1 and Class 10 buildings) of the Building Code of Australia (2007), the applicant has provided a declaration of system design life, which is set out in the Durability section of this Technical Assessment. This declaration is only relevant for the system as described in this Technical Assessment and installed under the conditions listed in this Technical Assessment.

Notes:

- (i) The inclusion of this clause with reference to the BCA is aimed at assisting those involved in the design, specifying and building approval/permit process relate the Appraisal to the relevant Performance Requirements of the BCA.
- (ii) Any changes made to the BCA will be reviewed during the term of validity of this Technical Assessment and, where necessary, any amendment required will be published on the CSIRO Appraisals web pages on <http://www.cmit.csiro.au/Appraisals>.
- (iii) AS 3660.1-2000 is referenced by the BCA as a deemed to satisfy solution for the protection against concealed entry by subterranean termites.

RELATED INFORMATION

VALIDITY OF THE OPINION

Condition:

This Technical Assessment applies only to the use of the Termortar system as described herein.

Withdrawal:

This Technical Assessment will be withdrawn or amended if CSIRO Appraisals considers that a change in design or manufacturing quality renders the basis of appraisal invalid, or if reported field experience convinces CSIRO Appraisals of unsatisfactory quality or performance.

Term of Validity:

This Technical Assessment is valid until 31 August 2009. Technical Assessments may be amended during the term of validity. Users of this Technical Assessment must verify that it remains valid and is the current version by checking on the CSIRO Appraisals website: <http://www.cmrmt.csiro.au/services/appraisals/> or by calling CSIRO Enquiries on 1300 363 400.

RELEVANT DOCUMENTS

Termortar Pty Ltd, 'Installation Instructions for Termortar System' (10th October 2007)

Standards Australia, AS 2870-1996 'Residential slabs and footings - Construction' (Amdt 4 May 2003)

Standards Australia, AS 3660.1-2000 'Termite management – New building work'

Standards Australia, AS 3660.3-2000 'Termite management – Assessment criteria for termite management systems'

Standards Australia, AS 3700-2001 (including amendments) 'Masonry structures'

APPROVED OPINION EXTRACT

The Termortar system as manufactured by Termortar Pty Ltd and installed by qualified bricklayers to the specifications outlined by Termortar Pty Ltd and in accordance with AS 3700-2001 'Masonry structures' (including amendments) will satisfy the performance requirements of Standards Australia, AS 3660.1-2000 'Termite management – New building work' as a suitable physical barrier to deter concealed subterranean termite entry when the conditions of CSIRO Appraisals Technical Assessment 316 are fulfilled.

APPRAISAL

DESCRIPTION

General:

The Termortar system has been subjected to field trials that satisfy the Assessment Methodology contained in AS 3660.3-2000 'Termite management – Assessment criteria for termite management systems'.

Components:

Materials recommended by the applicant and used/assessed in this appraisal include termite resistant cementitious parge.

Installation:

Termortar can be used inconjunction with concrete slab on ground in cavity walls, on the outside perimeter of cavity walls and as a cold-joint installation between existing structures and new slabs. It may also be used as a permanent barrier in subfloor brickwork and brick piers.

Termortar can be used as a replacement for traditional mortar to provide a termite barrier within brick work.

Termortar (render), used in conjunction with Termortar Primer) can be used for making good honeycombing holes in the vertical slab edge and over brickwork (above and below ground), to allow a straight working surface..

The Termortar can be used in tilt slab construction as a barrier at the junction of the base of the tilt slab panel and the concrete footing/slab.

DESIGN INFORMATION

General:

Termortar system can be used as a physical barrier to protect against subterranean termite attack in the following cases - cavity wall buildings with concrete slab on ground, buildings with typical raft, infill (footing) or formed void slab construction. Tilt slab construction joints, as a termite proof render and as a permanent barrier in subfloor brickwork and brick piers.

Durability:

CSIRO does not assess the durability of termite barriers.

The applicant, Termortar Pty Ltd, declare under its sole responsibility that:

- The Termortar Physical Termite Barrier has been designed to achieve a service life of 50 years during which period the Termortar Physical Termite Barrier, including its constituent components, is expected to maintain efficacy and function as a termite barrier in accordance with AS 3660.1-2000;
- The Termortar Physical Termite Barrier has been designed in accordance with a quality management system that incorporates a set of rules for the design, manufacture, installation and maintenance of all elements of the system; and
- The components used in the manufacture of the Termortar Physical Termite Barrier have been selected for their intended purpose and are expected to operate in accordance with their specification for the duration of the design life of the Termortar Physical Termite Barrier.

BASIS OF APPRAISAL

CSIRO Appraisals has assessed the following aspects in undertaking this appraisal:

- (a) installation procedures,
- (b) physical properties,
- (c) relationship to Australian Standard AS 3660.1-2000 'Termite management – New building work'
- (d) relationship to Australian Standard AS 3660.3-2000 'Termite management – Assessment criteria for termite management systems
- (e) relationship to Australian Standard AS 3700-2001 'Masonry structures' (including amendments)

The following documents and inspections were used in carrying out the appraisal.

Manufacturer's and Installation Information:

1. **Termortar Pty Ltd (ACN 111 294 814), 75 Lambton Road, Broadmeadow, New South Wales 2292, 'Installation Instructions' (10th October 2007):**
This outlines the installation procedures for Termortar.
2. **Alterm Pty Ltd (ABN 31 002 333 039), 75 Lambton Road, Broadmeadow, New South Wales 2292, 'Field Trials letter (11th September 2003):**
This outlines the extent of the field trials that had been completed over a three year period.
3. **SAI Global Limited (ABN 67 050 611 642) Certification. Certificate No. QEC1464 (16th December 2003):**
This certifies that Blue Circle Southern Cement Limited, Prospect, New South Wales operates a Management Systems that complies with the requirements of AS/NZS ISO 9001:2000.
4. **Alterm Pty Ltd (ABN 31 002 333 039), 75 Lambton Road, Broadmeadow, New South Wales 2292, letter (9th November 2004):**
Transferring ownership of Cementitious Parge as Referred to in Technical Assessment 239 from Alterm Pty Ltd to Termortar Pty Ltd and that the Cementitious Parge referred to in Technical Assessment 239 has not changed
5. **CSIRO Appraisals, Technical Assessment 239 Alterm Termite Barrier System (August 1998):**
This document is a technical assessment of the Alterm Termite Barrier System, It has been revalidated in August 2004.

Test Reports

1. **CSIRO. Termite Group Report No 01/09 for Alterm Pty Ltd, 'The resistance of cementitious parging material to attack by subterranean termites - laboratory assessment' (30 April 2001):**
Samples of Alterm cementitious parging material were exposed to two different species of termites (*Mastotermes darwiniensis* (Froggatt) and *Coptotermes acicaciformis* (Froggatt)) for a period of twelve weeks. The cementitious parging was found to be completely resistant to the termites used.
2. **CSIRO. Termite Group Report No 02/18 for Alterm Pty Ltd, 'Effectiveness of an Alterm termite barrier with marine-grade aluminium and a cementitious parging material in preventing subterranean termites from gaining concealed access to the super structure – First year of field assessment' (12 September 2002):**
Samples of Alterm marine-grade aluminium and a cementitious parging material were exposed to two different species of termites (*Mastotermes darwiniensis* (Froggatt) and *Coptotermes acicaciformis* (Froggatt)). The experiment was installed in an open eucalypt forest near Darwin at the end of August 2001. The first inspection was conducted in mid August 2002. The results showed that with proper installation and adequate use of the parge the barrier would prevent concealed subterranean termite entry.

3. CSIRO. Termite Group Report No 2003/21 for Alterm Pty Ltd, 'Effectiveness of an Alterm termite barrier with marine-grade aluminium and a cementitious parging material in preventing subterranean termites from gaining concealed access to the super structure – Second year of field assessment' (28 October 2003):

Samples of Alterm termite barrier, marine-grade aluminium and a cementitious parging material were exposed to two different species of termites (*Mastotermes darwiniensis* (Froggatt) and *Coptotermes acicaciformis* (Froggatt)).

The experiment was installed in an open eucalypt forest near Darwin at the end of August 2001. The second inspection and re-installation of units was conducted in July 2003. The results showed that with proper installation and adequate use of the parge the barrier would prevent concealed subterranean termite entry.

4. University of Newcastle, Discipline of Civil, Surveying and Environmental Engineering report titled 'Termortar testing', Project No. A/367 B (dated July 2005):

This report describes investigation to determine whether 'Termortar' will achieve acceptable strength and durability in accordance with AS 3700. Satisfactory results were achieved for the purpose of this appraisal.

Inspections:

CSIRO Appraisals has had satisfactory reports on the performance of the system. The system requires careful placement to be installed satisfactorily



Kenneth KJ Lofhelm
CSIRO Appraisals



CSIRO Appraisals is a project of CSIRO Manufacturing and Infrastructure Technology providing a range of assessment products including:

- Technical Assessments – full fitness for purpose appraisals of innovative products, systems or materials that may or may not be covered by Australian Standards or building regulations.
- Interim Reports – appraisals of products that have not yet reached the fully developed or manufacturing phase. They aid with product development and may be used as a step towards a subsequent Technical Assessment.
- Certification Assessments – appraisals of products, systems or materials solely against the requirements of the BCA and used for gaining approval from Federal or State authorities.

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Technical Assessments are intended to help all those concerned with the approval, specification and use of new products or systems. They are objective

assessments of the fitness for purpose of the product, system or material but are not approvals or endorsements. They may be submitted to approval authorities as part of the justification process required to obtain approval.

Each Technical Assessment has been prepared by CSIRO Appraisals and then reviewed, revised and finally endorsed by the Technical Advisory Committee (TAC), detailed below. CSIRO makes the appraisals on a national basis by obtaining input from regional committees in each State and Territory to take account of variations in local building regulations, practice and local climatic features.

CSIRO Appraisals bases its assessment on the product and information it receives and cannot accept responsibility for deviations in the manufactured quality and performance of the material, product or system. However, Technical Assessments will be withdrawn where adequate quality or performance has not been maintained.

This Technical Assessment has been given a term of validity until 31 August 2009. Technical Assessments may be amended during the term of validity. Users of Technical Assessments should verify that Technical Assessments remain valid and are the current version by checking on the CSIRO Appraisals website: <http://www.cmit.csiro.au/services/appraisals/>.

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H. RELATED DOCUMENTS

J. OTHER/OPTIONAL INFORMATION

14. ABSTRACT *(CSIRO Appraisals Approved Assessment Extract)*

The Termortar system as manufactured by Termortar Pty Ltd and installed by qualified bricklayers to the specifications outlined by Termortar Pty Ltd and in accordance with AS 3700-2001 'Masonry structures' (including amendments) will satisfy the performance requirements of Standards Australia, AS 3660.1-2000 'Termite management – New building work' as a suitable physical barrier to deter concealed subterranean termite entry when the conditions of CSIRO Appraisals Technical Assessment 316 are fulfilled.