## Bayer Environmental Science





## "TECHNICAL & COMPLIANCE INFORMATION"

SUMMARY OF BAYER KORDON TERMITE BARRIER TECHNICAL AND COMPLIANCE DATA. TO BE READ IN CONJUNCTION WITH THE DOCUMENT PREPARED FOR PERSONS WISHING TO CERTIFY KORDON AS AN ALTERNATE SOLUTION BUILDING CODE OF AUSTRALIA 2006.

| Reports             | Establishment / project         | Report findings / conclusions   |
|---------------------|---------------------------------|---|
| Aug.1996            | Morgan Fox & Harvey Pty         | This report includes a background   |
| Mr Eric             | Ltd, 1 Great George Street,     | summary of the development of the   |
| Fox                 | Paddington, Queensland 4064     | product, description and application,                                       |
|                     | 'report on Kordon TMB in        | compliance summaries, performance   |
|                     | support of application for      | criteria as a termite barrier,  |
|                     | ABSAC approval'                 | manufacture and supply details  |
|                     | FF10 M                          | including an outline of quality control,                                    |
|                     |                                 | including details, in-service   |
|                     |                                 | performance, environmental aspects,   |
|                     |                                 | and health and safety aspects. The  |
|                     |                                 | upper membrane is an LPDE   |
|                     |                                 | membrane 0.2 mm thick, orange in  |
|                     |                                 | colour and has been assessed for  |
|                     |                                 | compliance with the requirements for  |
|                     |                                 | 'vapour barrier' and damp-proof   |
|                     |                                 | membrane as stated in AS, AS2870-   |
|                     |                                 | 1996  |
| 22 Aug              | CSIRO Division of               | This report contains results of the sixth                                   |
| 1996                | Entomology, Termite Group       | annual inspection of Kordon TMB   |
| S Runko             | Report No 96/17                 | field tests, which have been underway                                       |
|                     | 'Report of field tests after 6  | at sites in New South Wales and   |
|                     | years with deltamethrin         | Northern Territory. In brief, 125   |
|                     | impregnated Kodon blanket       | samples at ground level have revealed                                       |
|                     | as a barrier against Australian | no penetration of treated blankets after                                    |
|                     | subterranean termites           | six years while there has been  |
|                     |                                 | extensive penetration of the untreated                                      |
|                     |                                 | samples   |
| 16                  | CSIRO Division of               | This report contains results of the   |
| Mar.2005            | Entomology, Termite Group       | second annual inspection of Kordon  |
| PV                  | Report No.2005/9                | TMB field tests, which have been  |
| Gleeson             | "Evaluation of Kordon TMB       | underway at sites in NSW and the  |
|                     | as a barrier against field      | Northern Territory. The trial is being                                      |
|                     | colonies of the Australian      | performed using the current version of                                      |
|                     | subterranean termites           | Kordon TMB with the new fibrous   |
|                     | Mastotermes darwiniensis and    | sheet. In brief, all the experimental                                       |
|                     | the tree-nesting form of        | Kordon TMB units remained in tact   |
|                     | Coptotermes acinaciformis"      | and have revealed no penetration of   |
|                     |                                 | treated blankets after 2 years while  |
|                     |                                 | there has been penetration of the   |
| 5 Sont              | CSIRO Division of               | untreated control samples.  |
| 5 Sept.<br>2005 (W. | Entomology, Termite Group       | In brief, all Kordon TMB samples at ground level revealed no penetration of |
| Whitby)             | Report No 2005/19 "Report       | treated blanket after 15 years while  |
| *viiitoy)           | on field trials after 15 years  | there has been extensive penetration of                                     |
|                     | with deltamethrin-              | the un-treated control samples and the                                      |
|                     | impregnated Kordon blanket      | treated samples that did not contain the                                    |
|                     | as a barrier against Sub-       | moisture-proofing membrane that   |
|                     | termites at sites near Griffith | forms part of Kordon TMB  |
|                     | NSW and Darwin NT               | Torms part of Econoli 11910   |
|                     | TION and Darwin MI              |   |

| 20 May<br>1998<br>Dr. Russell<br>Varley  | CSIRO Molecular Science Report, 'Insecticide Controlled Release TMB: Phase 4–Part 2 Ageing of Webbing Alternate Candidates'  | This report contains results of an experimental program to evaluate various alternative materials (including both the original fibrous web used in Kordon TMB and the fibrous web currently used in Kordon TMB. The webbings were subjected to 100 degree C and 45 degree C at relative humidity 98% for 4 weeks to determine whether there was any difference in the stability of deltamethrin on the alternate fabrics. In brief, ageing at 100 degree C suggested that the fibrous web currently used in Kordon TMB provided performance at least comparable with the performance of the old fibrous web. Ageing at 45 degree C at high humidity had little effect on the deltamethrin regardless of the type of webbing |
|--|--|---|
| 21 July<br>1998<br>Dr. Russell<br>Varley | CSIRO Molecular Science<br>Report, 'Insecticide<br>Controlled Release TMB:<br>Phase 4–Part 2 Ageing of<br>Webbing Alternate<br>Candidates'   | This report contains results of an experimental program to evaluate various alternative materials (including both the original fibrous web used in Kordon TMB and the fibrous web currently used in Kordon TMB. The webbings were subjected to 70 degree C and 85 degree C to determine whether there was any difference in the stability of deltamethrin on the alternate fabrics. In brief, ageing at 70 and 85 degree degree C suggested that the fibrous web currently used in Kordon TMB provided performance at least comparable with the performance of the old fibrous web.   |
| 17 May<br>1996                           | University of Sydney, Department of Mechanical and Mechatronic Engineering, New South Wales 2006 Test Certificate  | This report on the Kordon Blanket provides results for density, impact resistance and elongation at break. It concludes that membranes are 'tough, reliable, and readily adaptable'   |
| 10 May<br>1996                           | Insearch Ltd (Can 001 425 065) Project number E95/09/110 Compliance Strategies for accreditation of Kordon TMB (Termite Moisture Barrier) through the Australian Building Systems Appraisal Council for AgrEvo | Topics discussed in this report include background, installation considerations, durability considerations, microscopy and strength performance issues.   |

| 9 January<br>1996  | Gelpack Enterprises Pty Ltd,<br>117 Newton Road, Wetherill<br>Park, New South Wales.<br>Test Report on Building Film<br>for Joyce Australia   | This report of testing provides results of impact strength (ASTM D 1709-62T), tear resistance (ASTM D 1922-67). The results were satisfactory for a water vapour membrane under concrete slab on ground.  |
|--|---|---|
| 24<br>September<br>1996                                      | Casey TAFE, Client Services-<br>Technology, Centre for<br>polymer Technology, 121<br>Stud Road, Dandenong 3175<br>Technical Report Summary<br>ESPRC No 133/96   | This report is on penetration resistance of water vapour barriers to falling aggregate and water vapour performance. The results meet the requirements of compliance with AS2870.   |
| 11 June<br>1999<br>Associate<br>Professor<br>Frank<br>Murray | Murdoch University, Perth, Institute of Environmental Science, Division of Science and Engineering. 'Deltamethrin of Volotile Organic Compounds and Potential dust emissions from Kordon Termite Barrier' | Kordon produced no measurable VOCs nor were airborne dust emissions detected during cutting. Kordon is suitable for "low allergen housing"  |
| 21 June<br>1999<br>G.<br>Simundic                            | The University Of Newcastle, NSW, Department of Surveying and Environmental Engineering. "The Shear Capacity Testing Of Kordon"   | The tests indicate the presence of Kordon in a perimeter wall installation will not compromise the capacity of the wall to resist wind loads.   |
| 10 June<br>2004  | Bayer Environmental<br>Science, Hawthorn East VIC<br>3123.<br>"Reference Manual-Kordon<br>Termite Barrier"  | This manual contains information about the system specifications, warranty, installation details, and accredited installers, Bayer Environmental Science is a business division of Bayer Crop Science Pty Ltd   |
| 24 Aug<br>2001<br>Jeffrey<br>Einam                           | Aventis Environmental Science Report.  "Retention analysis of Kordon Termite Barrier exposed to the environment following installation on a concrete slab"  | In study the level of retention of deltamethrin in Kordon TMB when exposed to the environment for three months was investigated. The level did not deplete below minimum spec of 1.0 g/m/sq metre following this three month outdoor exposure                             |
| 27 Feb<br>1998<br>Dr. Russell<br>Varley                      | CSIRO Molecular Science<br>Report, 'Insecticide<br>Controlled Release TMB:<br>Phase 4–Part 1 Initial<br>deltamethrin concentrations'  | This report contains results of an experimental program to evaluate various alternative materials (including both the original fibrous web used and the fibrous web currently used in Kordon TMB In brief, performance of both versions of the fibrous web was comparable |

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|--------------|---|---|
| 10 June 2004 | Bayer Environmental                             | This manual contains information  |
|              | Science, Hawthorn East                          | about the system specifications,  |
|              | VIC 3123.                                       | warranty, installation details, and   |
|              | "Reference Manual-Kordon                        | accredited installers, Bayer  |
|              | Termite Barrier"                                | Environmental Science is a business   |
|              |   | division of Bayer Crop Science Pty Ltd  |
| 22 June 2004 | Bayer Environmental                             | This document contains the  |
|              | Science, Hawthorn East                          | specifications of the Kordon Termite  |
|              | VIC 3123.                                       | Barrier and is applicable to Kordon   |
|              | "Internal Specification                         | TMB and Kordon Termite Barrier  |
|              | DocumentAU4KTMB v 03:                           |   |
|              | Kordon Termite Blanket"                         |   |
| 15 March     | Bayer Environmental                             | This is the summary of the chemical   |
| 1996         | Science, Hawthorn East                          | used in the fibrous layer. It has been  |
|              | VIC 3123.                                       | tested as a termiticide for the last six                                      |
|              | "Summary Section from                           | years. Based on degradation studies in  |
|              | 'Part 8 – Efficacy and                          | soil, and given certain assumptions,  |
|              | Safety' from submission to                      | results have been extrapolated for long                                       |
|              | the National Registration                       | term efficacy.  |
|              | Authority for registration of                   |   |
|              | Kordon Manufacturing                            |   |
|              | Concentrate"                                    |   |
| 27 September | National Registration                           | This was issued to Hoechst Schering   |
| 1996         | Authority for Agricultural                      | AgrEvo for Kordon Manufacturing   |
|              | & Veterinary Chemicals                          | Concentrate. (now owned by Bayer  |
|              | Barton, ACT                                     | Crop Science Pty Ltd)   |
|              | 'Notice of registration of a                    |   |
|              | chemical product and                            |   |
|              | approval of label under the                     |   |
| 1.1.2002     | Agvet Codes                                     |   |
| July 2002    | Aventis Environmental                           | The rate of degradation of chemical can                                       |
| Mr Phil      | Science Report "Review of                       | be measured and is expressed as a half-                                       |
| Morrow       | the Service Life Expectancy                     | life ie the period for a chemical to  |
|              | of Kordon TMB and                               | degrade to half its original  |
|              | Kordon Termite Barrier for                      | concentration. The level of deltamethrin in Kordon below which it             |
|              | Protection of New                               |   |
|              | Buildings from attack by subterranean termites" | can cease to function as an effective barrier can be estimated by experiment. |
|              | Subterranean termites                           | Hence the number of half-lives of   |
|              |   | Kordon to no longer repel termites can  |
|              |   | be calculated. The report demonstrates,                                       |
|              |   | via modelling, the service life of  |
|              |   | Kordon to be at least 50 years and  |
|              |   | expected to be still functional after 60                                      |
|              |   | years   |
| 8 January    | Queensland Government,                          | Dr Kennedy agreed to the conclusion   |
| 2003         | Department of Primary                           | that the service life expectancy of   |
| Dr Michael J | Industries, Forest Products                     | Kordon Termite Barrier was well   |
| Kennedy      | Division, QFRI                                  | founded   |
| Termicay     | Dividion, Qi Id                                 | TOUTIQUE  |

| 14 December<br>2000<br>Mr Barry<br>Schaffer | CSIRO Building Products<br>and Systems Appraisals.<br>"Kordon Compliance To<br>Australian Standard 3660.3-<br>2000 Assessment Criteria<br>For Termite Management<br>Systems" | "The testing undertaken to date on the Kordon, complies with the testing requirements as set out in AS3660.3, 2000" |
|---|--|---|
| 7 June 2001                                 | CSIRO Building Products  | Confirmation of reduced clearances  |
| Mr Barry                                    | and Systems Appraisals   | where there is a permanent hard surface   |
| Schaffer                                    | "Acceptable areas of   |   |
|   | reduction of 75mm  |   |
|   | inspection zone"   |   |
| 1 January                                   | South Australia HIA  | Clause 2.6.2 specifies where a  |
| 2003 Mr P                                   | Technical Committee.   | permanent termite barrier is installed  |
| Jankovic                                    | SA Housing Code  | and there is a raft slab with a rebate the  |
|   | Amendment 9  | paved area shall be a minimum 15mm  |
|   |  | below the finished concrete level of the  |
|   |  | edge rebate.  |
| 24 September                                | Bayer Crop Science Pty Ltd   | This Provides details of the  |
| 2003  | "Kordon Kollar   | manufacture of the prefabricated  |
|   | Specification"   | Kollars and the specification for the   |
|   | _  | final Kollar  |