



ADVISORY NOTICE BUILDING

02/05

Advisory Notices are issued to assist in the interpretation of the Development Act 1993

March 2005

TECHNICAL:

Building Code of Australia Compliance of thermal insulation for energy efficiency

BACKGROUND

The thermal insulation of Class 1 buildings has been mandatory since the adoption of energy efficiency provisions into the Building Code of Australia (BCA) – Volume 2 on 1 January 2003. Compliance with the thermal insulation requirements is currently achieved by incorporating insulation that complies with clause 3.12.1.1, into the building fabric. Clause 3.12.1.1(d) currently states that insulation must be in accordance with AS/NZS 4859 Part 1 (*Materials for the thermal insulation of buildings – General criteria and technical provisions*) or AS 2464 Parts 3, 5 or 6 (*Methods of testing thermal insulation*) depending upon the nature of the insulation (bulk or reflective) to be used.

From 1 May 2005 the BCA – Volume One will also require insulation to be incorporated into the building fabric of Class 2 and 3 buildings and Class 4 parts of a building. Additional provisions, scheduled for adoption on 1 May 2006, will require insulation to be incorporated into the building fabric of Class 5 to 9 buildings.

ADOPTION OF BCA 2005 AND SUBSEQUENT WITHDRAWAL OF AS 2464 PARTS 3, 5 AND 6

AS/NZS 4859 Part 1 supersedes AS2464 – Parts 3, 5 and 6 and was developed over many years in response to industry requests for a standard that includes a wide range of insulation products. Previously, different insulation products were covered by their own standards while others, such as polyester insulation had no standard applying to it at all. The referencing of both standards in BCA 2004 was permitted to allow the insulation industry a reasonable period of time in which to have their products tested and ensure compliance with AS/NZS 4859.1.

BCA 2005 – Volumes One and Two, scheduled for adoption on 1 May 2005, only reference AS/NZS 4859 Part 1 and as such all insulation (bulk and reflective) must comply with AS/NZS 4859.1. AS 2464 Parts 3, 5 and 6 have been withdrawn. Certificates from insulation manufacturers stating compliance with AS 2464 Parts 3, 5 and 6 are no longer valid and cannot be accepted as evidence that compliance with the BCA provisions has been achieved.

VERIFYING COMPLIANCE WITH AS/NZS4859 PART 1

Methods of demonstrating compliance with AS/NZS 4859.1 have been the topic of much discussion in recent times. Random testing of insulation samples recently carried out by BRANZ at the request of the Australian Greenhouse Office (AGO) demonstrated large discrepancies between labelled and actual

thermal performance (R-value) of both bulk and reflective insulation. The actual thermal performance of bulk insulation varied from +9% to -46% of the stated R-value on the labels. The requirement for demonstration of compliance with AS/NZS 4859.1 is detailed in Section 4 and Appendix A (Informative only) of the standard.

Testing to verify the thermal performance (R-value) of bulk insulation products must be performed by a recognised laboratory. A recognised laboratory should have accreditation or recognition for testing to the relevant standards and procedures, either to ISO 17025 or to the requirements of a recognised national accreditation scheme. These include laboratories like the CSIRO, BRANZ or other laboratories accredited by the National Association of Testing Authorities (NATA) for the relevant test methods.

Where testing cannot be performed, such as with reflective insulation products, the standard requires that the calculations used to derive the indicative thermal performance (R-values) are performed by an appropriately qualified person/consultant and shall be accompanied by endorsement from a recognised laboratory as defined above.

Documentation (plans, reports and specifications) prepared for the purposes of obtaining Development Approval should demonstrate that the AS/NZS 4859.1 requirements have been incorporated into the building fabric.

In addition, the labelling of insulation products should be checked on site to ensure compliance with the approved documents and the requirements of Section 3 (*Packaging and Labelling*) of AS/NZS 4859.1.

BCA VOLUME ONE – PART C (FIRE RESISTANCE) IMPLICATIONS

- With the introduction of energy efficiency measures into the BCA - Volume One, manufacturers who have previously produced insulation for use in Class 1 buildings, where there are no fire safety requirements for ceiling, wall or floor insulation, and who now wish to use their products in other classes of buildings, may need to have them tested to ensure compliance with:
- The non-combustibility requirements of BCA Volume 1 when tested to AS 1530.1
- The flammability requirements of the BCA Volume 1 when tested to AS 1530.2
- The fire hazard properties of the BCA Volume 1 when tested to AS/NZS 1530.3.

None of these fire related BCA requirements are new and the appropriate tests should have already been carried out on products being used in those situations where the BCA requires compliance.

Further information

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