

Extract From:

AS3999:1992 Thermal insulation of dwellings— Bulk insulation—  
Installation requirements

## **2.6 ELECTRICAL CABLES AND ELECTRICAL EQUIPMENT.**

**2.6.1 General** The flow of electric current in cables generates heat which is dissipated to the surroundings. The introduction of thermal insulation around cables will reduce the heat dissipation and in some instances may result in electrical cables overheating and the electrical insulation exceeding its rated temperature, and degrading. It is also possible that electrical equipment may overheat if enclosed by thermal insulation.

### **2.6.2 Electrical cables**

**2.6.2.1 Dwellings wired in accordance with AS 3000–1986, or a subsequent edition.** If electrical cables in accordance with AS 3000–1986, or subsequent edition, are present and the bulk insulation would surround the cable, installation of bulk insulation may proceed in accordance with Sections 3 to 5, as appropriate, provided that the depth or thickness of the bulk insulation is not greater than 150mm. Where the depth or thickness of the bulk insulation in the ceiling is greater than 150mm, the installation of the bulk insulation shall comply with Clause 2.6.2.2.

The installation of bulk insulation in walls shall not proceed until the insulation installer has checked with the inspecting authority to determine if the walls have been deemed to contain thermal insulation.

Walls that are not deemed to contain bulk insulation, and also floors, shall have the bulk insulation installed to comply with Clause 2.6.2.2.

NOTE: The inspecting authority may determine that cavities in external walls in domestic premises are deemed to contain bulk thermal insulation. For further details, refer to the current edition of AS 3000.

**2.6.2.2. Dwellings not wired in accordance with AS 3000–1986, or a subsequent edition** The installation of bulk insulation in spaces where electrical cables which do not comply with AS 3000–1986, or a subsequent edition, are present and where the bulk insulation would surround the cables for lengths of cable greater than 150mm, the alternatives (a) or (b) as follows shall be considered and the appropriate procedure adopted:

- a) The bulk thermal insulation shall be installed so that it shall not surround electrical cables either completely or partially.
- b) By consultation with an electrical contractor or the electrical inspecting authority, the suitability of surrounding the electrical cables with bulk thermal insulation either completely or partially shall be determined.

If the electrical cables are suitable for surrounding with bulk insulation, installation may proceed and shall comply with Sections 3 to 9 as appropriate. If the cables are found unsuitable for surrounding with thermal insulation, the installation of bulk insulation shall comply with the requirement of Item (a) or the relevant area shall be left uninsulated, or the cables shall be rerouted by an electrical contractor away from the space to be insulated.

NOTES:

1. Assistance can be obtained from the Electrical Contractors Association of Australia in matters of rerouting cables or making changes to existing wiring.
2. Surrounding electrical cables with thermal insulation can sometimes be avoided by the use of separators (see Figure 2.1). The separators may be mechanically fixed in position or supported by the insulation, but a clearance of at least 5mm should be maintained between the top of the separator and the structural member carrying the electrical cable. The space between the structural member and the separator should be kept free of insulation.
3. Lighting circuits, and particularly individual cables to luminaires, usually carry relatively small currents and are unlikely to overheat when surrounded by thermal insulation. Some types of low voltage recessed lights require high currents and need special consideration.

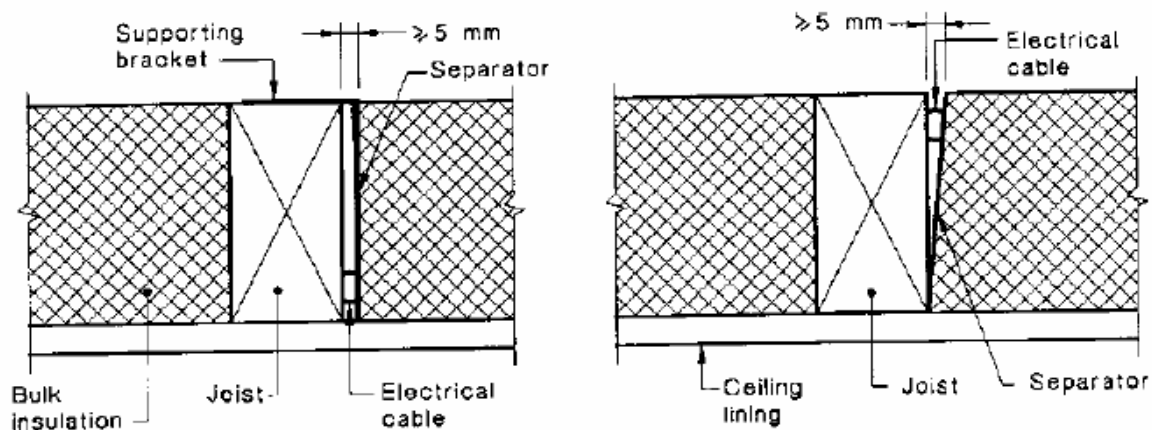


FIGURE 2.1 INSTALLATION OF SEPARATORS FOR ELECTRICAL CABLES

**2.6.3 Electrical equipment.** If electrical equipment is present in the area to be insulated, thermal insulation shall not be placed around the equipment unless assurance has been first obtained from the equipment manufacturer that the safe operation of the equipment will not be jeopardized by the proposed placement of thermal insulation.