

Up in smoke

Changes to the Wiring Rules have put the onus on builders to ensure the correct installation of downlights. Paul Skelton investigates builders' options for safeguarding their business and their clients against potential disaster.

Problems created by overheating downlights are not new. It has long been reported that when heat generated by the stylish lighting mixes with loose, flammable insulation in the roof cavity, the results can be disastrous – sometimes even fatal.

Primarily this is an issue for electricians. The placement of the lighting fixtures, the use of a suitable enclosure or barrier, and proximity to insulation are largely the responsibility of the sparky installing the lights.

But although it is an electrical issue, changes to the Standard mean builders must be aware of how they too can be liable for a faulty installation.

Last year Standards Australia introduced the new AS/NZS3000:2007 Wiring Rules, containing the first amendment for seven years.

The new Standard dictates that insulation should never be allowed to touch a downlight. Excessive heat and combustible materials should never meet, and that is something all tradies need to be aware of when installing downlights.

Tradies should also bear in mind that exposed downlights can ignite timber beams. General ceiling debris such as rubbish and leaves – along with rodents, nesting birds and human activity in the roof space – can also create a fire hazard.

A big misconception associated with installing downlights is that you can simply cut a hole in the insulation bat or move loose-fill insulation to the side. Some tradies even place a makeshift buffer (usually made from cardboard) between the insulation and the light fitting.

Unfortunately for home-owners this quick fix has the potential to put their home – and their families – at serious risk.



The first changes to the Wiring Rules in seven years means builders must be aware of how they too can be liable for the faulty installation of downlights and take steps to protect their businesses.

Downlights heat up quickly, and insulation sitting beside them or close by can easily ignite and spread through the ceiling undetected by the smoke alarm.

So when are builders liable for problems stemming from improper installation and what can they do in situations like these?

Ian Craig is the sales manager of Arrowform, which manufactures and distributes the Isolite and Flexi systems for downlight installations.

“It is vital that builders carefully review their practices and thoroughly familiarise themselves with the details of AS/NZ

3000:2007, because too many electricians have admitted that they do not,” he says.

“Duty of care also applies to builders, particularly when the electrician is not involved in dealings with the end user.

“Insurance companies are always looking for an ‘out’ clause on claims, so it is foolish to ignore the law. A lot of small businesses couldn’t cope with the effect on their business if an insurance company refuses to cover them after a claim.”

The Isolite guard was designed to isolate downlights from hazardous external elements such as insulation, timber, dust, ➤

interference by pests, and turbulence. It also prevents related indoor pollution, prevents energy loss by stopping air leakage at the ceiling level, and allows insulation cover to be installed very close to the downlight.

Isolite's sealed, fire-resistant enclosure allows rapid heat exchange. It simply anchors to the ceiling via the downlight clips.

Alternatively, Arrowform's Flexi fire-resistant enclosure is designed to be installed from below the ceiling, offering flexibility and time savings.

"The old AS3000:2000 Standard required 'no risk of ignition' but offered limited specifics in relation to the installation of downlights," Ian Says.

"The 2007 Wiring Rules are much more specific and tough.

"One significant change in the new rules for builders is that you cannot install exposed halogen globes between 450mm centres, because the minimum clearance from

structural members and insulation is 200mm. Fire-resistant barriers have to be the same distance away and secured in position.

"Electricians are responsible for leaving the light and roof cavity ready for insulation to be installed. But how can you be sure that an exposed halogen globe is safe, however far away the insulation is? A larger gap is a larger trap for debris. This is why products such as Isolite are so important.

"Due to downlights proving to be a source of residential fires, we recommend builders present all of the options to each client in writing and get a response in writing. This would go a long way in protecting against future problems."

Builders should note that Section C of each building contract's statutory warranty states that "the contractor warrants that the work will be done in accordance with and will comply with the Home Building Act or any other law."

In addition, builders must comply with the Building Code of Australia and keep up to date with its changes.

Avoiding potentially lethal fire damage can be as simple as placing a heat-resistant, fire-proof barrier around the downlight transformer in the roof cavity.

The Wiring Rules state that thermal insulating material shall be separated by 50mm vertically and 100mm horizontally from incandescent lamps or associated supply transformers, and by no less than 200mm from halogen lamps and recessed luminaires.

Former forensic investigator Greg Kelly says the rule itself relates to thermal insulating materials and how preventive measures should be taken where thermal insulation is positioned around light fittings.

"Most electricians I speak to believe that the application of common sense in clearing away insulation or other materials will suffice in the installation of the light fitting. But there are definite rules to follow.

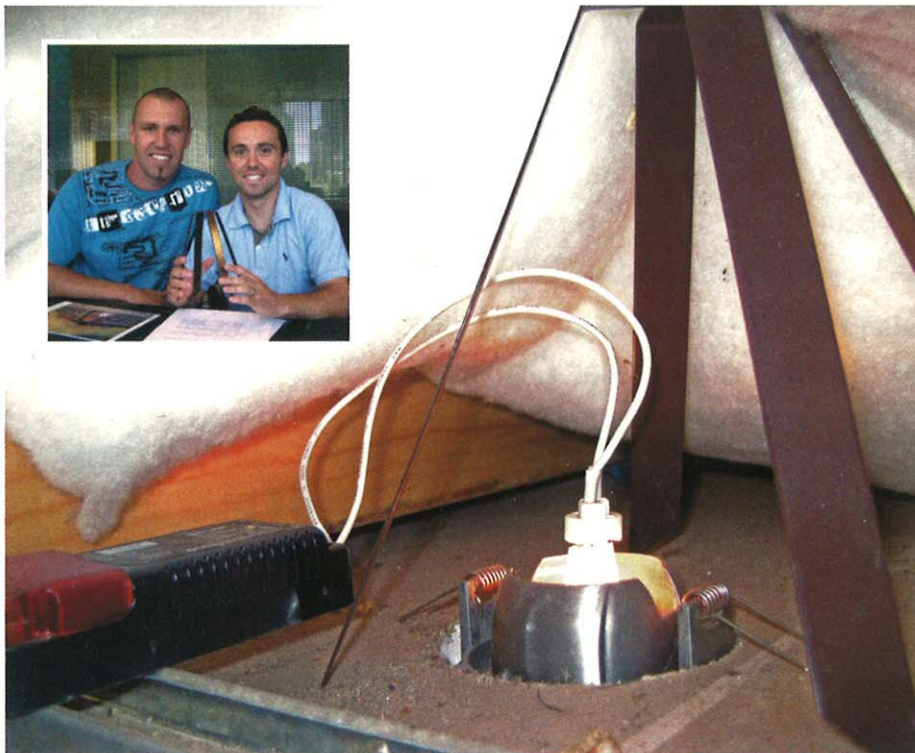
"Tradespeople should also allow sufficient airflow around the light fittings to prevent the transformer from overheating. Placing thermal insulation around transformers, which are controlled or protected by a thermal overload, is also a recognised problem."

The Thermo-Seal Downlighter cover was designed in the UK and is distributed in Australia by Exfoliators. It creates a vapour seal while maintaining an air space between the light fitting and the insulation as stipulated by many light fitting and electrical manufacturers.

The Thermo-Seal cap is dropped over the light fitting and sealed with mastic to form the vapour seal. Its rigid construction allows ceiling insulation to be laid directly over the top.

The cap is manufactured from inert mineral fibres and organic binders designed to resist the formation of water droplets that could drip onto the lamp and wiring. Its durable construction is also resistant to rot, corrosion and vermin.

With building regulations prescribing that downlights and loose-fill insulation be separated by a fire-resistant barrier, two



The Downlight Buddy, invented by two electricians and a carpenter, has four metal prongs welded together and bent into an over-arching shape. It can be inserted through a downlight hole without the need for ceiling access. Inset: Downlight Buddy inventors Dean Kirkman (left) and Frankie Nigro spent six months developing this simple way of separating blanket-type insulation from downlight fixtures.



The Isolite guard was designed to isolate downlights from hazardous external elements such as insulation, timber, and dust build-up. It also prevents energy loss by stopping air leakage at the ceiling level and allows insulation cover to be installed very close to the downlight.

Australian electricians and their carpenter friend spent six months developing a basic, cheap solution to this problem – the Downlight Buddy.

“You don’t need to be an electrician to know that downlights and their transformers produce temperatures in excess of 200°C,” says Frankie Nigro, who teamed up with fellow electrician Dean Kirkman and carpenter John Giordino to design and construct the system.

“With insulation on top of hot downlights, it is a recipe for disaster. The downlight could overheat and continually shut down – or, worse still, a fire could begin.

“This is why we needed to design a product that pushed thermal blanket insulation far enough away from the downlight and transformer to give space for ventilation. We also needed a product that could be inserted through any size downlight hole without having to gain access to the ceiling.”

The Downlight Buddy has four metal prongs welded together on top and bent into

an over-arching shape. The length of the arms can vary depending on the installation and the depth of the ceiling cavity.

“The Downlight Buddy is very simple to use – simply press the arms together and push it through the downlight hole,” Frankie says.

“Once the Downlight Buddy is fully inserted, its arms will release and open over the hole. The weight of the insulation will force the pointed feet into the plaster ceiling, making it all more stable.”

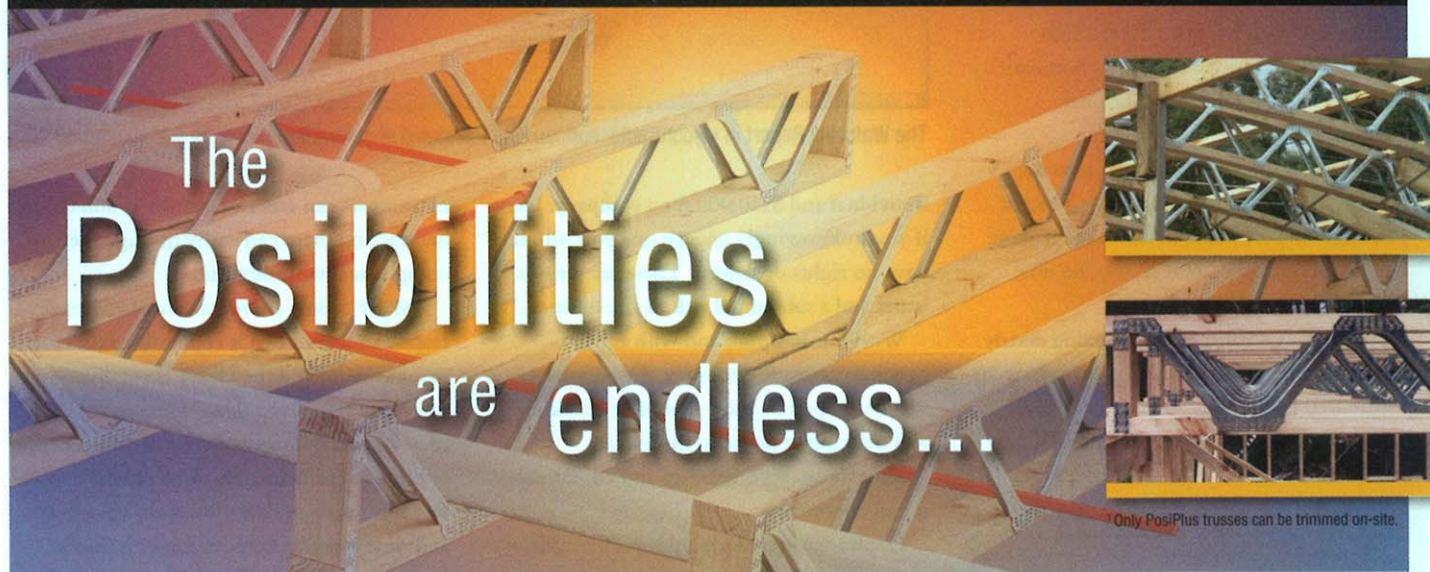
The Downlight Buddy is available from the website below and will soon be sold in selected electrical wholesalers. ■

CONTACT



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| Arrowform | www.isolite.com.au |
| Exfoliators | www.exfoliators.com.au |
| Downlight Buddy | www.downlightbuddy.com.au |

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