

Build Back Smarter Info Sheet

Downlights

The opportunity to build back smarter

Disaster repairs: Replacement of ceiling linings

Opportunity to upgrade: While work is going on in the ceiling, replace older downlights with IC-F rated downlights, pendant or surface mounted fittings. Downlights let heat escape into the roof space as older downlights cannot have insulation fitted over them.

Why replacing downlights is important

Downlights create a hole in your ceiling which lets heat escape and reduces the effectiveness of your insulation. This is made worse by the need to leave a safety gap between older downlights and any insulation in the ceiling. Because the incandescent or halogen bulbs used in downlights run very hot, fire is a very real possibility.

The upshot is that your warm heated air is drawn up into the colder roof-space and your ceiling insulation cannot work as well as it should. A home in the South Island, for example, with downlights installed every three square metres would reduce insulation effectiveness from R3.3 to R2.7.



Additionally, downlights in wet areas, like bathrooms and kitchens, can allow moist air into roof spaces and around concealed framing, resulting in condensation and possible moisture damage.

Downlight standards

All new products manufactured or imported into New Zealand must be in one of five classes, of which four may be used in residential buildings. Residential class downlights must be safe if accidentally covered with building insulation. Downlight manufacturers must state what building/thermal insulation is safe and compatible to use with the downlight.

Classification	Description	Label
NON-IC	Not allowed to have any insulation within 100mm and cannot be installed in residential buildings	



CA135	Type CA 135, closed abutted, recessed luminaire where fixed, building insulating material that can safely be exposed continuously to temperatures up to 150°C must not cover but may closely abut the sides of the luminaire.	
CA80	Type CA 80, closed abutted, recessed luminaire where fixed, building insulating material that can safely be exposed continuously to temperatures up to 90°C must not cover but may closely abut the sides of the luminaire.	
IC	Type IC recessed luminaire where building insulation that can safely be exposed continuously to temperatures up to 90°C may abut and cover the luminaire.	
IC-F	Type IC-F recessed luminaire where building insulation that can safely be exposed continuously to 90°C may abut or cover the luminaire. Resistant to ingress of external matter.	

Build Back Smarter recommendations

Ask an electrician to check your existing downlights (can they be covered by insulation?).

If repair work is already impacting your ceilings, consider replacing any older downlights that cannot be covered in insulation.

Your options are:

- Replacing your downlights with new IC-F rated CFL and LED lights which can have insulation abutting and covering the lights. Check for the rating – all lights should be rated. If you are not sure of the type you need, check with a registered electrical contractor.
- Replacing your downlights with non-downlight fittings and filling in the hole in the insulation. Surface-mounted fittings could cover and seal the downlight hole, or install surface-mounted or pendant lights and fill any gaps in the ceiling plasterboard.

