

# Alert to any alarms

The New Zealand Fire Service keeps a close eye on emerging fire risk and has identified some building products and practices that are potentially dangerous and should be avoided.

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**FIRE SERVICE INVESTIGATION** staff and fire engineers carry out post-incident analyses of unusual fires. Where staff and the Fire Research and Investigation Unit (FRIU) find issues that could pose serious public danger, the results are published on the Service's website.

Over the past few years, investigations have revealed several issues that National Fire Investigation and Arson Reduction Manager Peter Wilding and his team have brought to the attention of regulatory authorities and the relevant sector.

## ***Non-fire retardant building paper***

A case in point was a deliberately lit fire against the external wall of a retail store, which quickly spread to the interior. Inside, flaming pieces of building paper dropped onto stock below, starting multiple fires in the building. These spread rapidly and had the potential to overwhelm the sprinkler system.

Investigators were puzzled by how quickly the fire spread, until they discovered the building paper did not comply with the New Zealand Building Code Acceptable Solutions (C/AS1-6). For a sprinklered building, this applies to ceiling linings only.

Once installed, it is hard to tell which type of building paper has been used, as both the fire retarded and the non-fire retarded look very similar.

### ***Advice***

FRIU has recommended to manufacturers that the two types of paper be clearly identifiable so there can be no mistake about which paper has been used.

It has also advised builders and compliance officers to make sure the building paper used is compliant with the New Zealand Building Code and as specified in the building consent documents.

## ***Chimney fires due to poor design***

Specialist fire investigators in Marlborough alerted the FRIU to the potential for fires in poorly designed and installed timber-framed enclosures around flues. ➤

‘Builders had put a timber frame with cement or hardboard cladding around a metal flue as it emerged from the roof of a house,’ says Peter Wilding. ‘The products they used should have been non-combustible or adequately separated from the heat source and should also have had adequate ventilation at the top and bottom.’

Timber framing directly under the flashing was the starting point for two fires in Blenheim. The timber was subjected to prolonged heating, and over time, this pyrophoric action significantly reduced the ignition point. A chimney fire was inevitable.

**Advice**

Building inspectors need to be aware of the danger of non-compliant design and construction and the need for adequate ventilation.

**Caution around floor solvents**

There have been fires in buildings where floors were being prepared for vinyl or other coverings. These started with a flammable vapour explosion and caused significant damage. In some cases, the contractors installing the flooring were caught in the explosions and sustained serious injuries.

Some products used to prepare flooring surfaces or install floor coverings contain highly flammable solvents such as toluene and hexane, which release vapours that spread across the room when they are applied. If they encounter an ignition source, such as a gas pilot flame or an electrical tool or appliance, a rapid ignition occurs, creating a fireball.



The result of poor design choices.

**Advice**

‘Our advice is for people using these products to follow the instructions - make sure there is plenty of ventilation, turn off all gas and electrical equipment and wait until the space is well aired before turning them back on again,’ says Peter.

**Tidied away, but not fire safe**

Kitchen or bench appliance garages that have a pull-down door to hide away toasters, hot water jugs and other small appliances are a surprisingly common starting point of fires.

‘People pull down the garage door onto the jug switch or toaster slide, and several hours later, the overheated appliance sets fire to the bench, and the fire can quickly spread from there.

‘We’ve had two recent fires in Auckland caused this way and many others throughout the years,’ he said.

**Advice**

The FRIU has contacted organisations representing kitchen designers to make them aware of the problem so they can consider solutions. ‘Already, one manufacturer has taken action by installing a kill switch that isolates the power supply to the appliances in the cabinet when the roller door is pulled down,’ says Peter.

**Smoke alarms – choose the best**

Picking out the best smoke alarm from a baffling line-up on a shop shelf is hard. For several years, the Fire Service has invested in Consumer NZ testing of smoke alarms. Recently, 20 currently available smoke alarms of varying prices and fire conditions were tested.

The latest research reinforces that photoelectric smoke alarms provide significantly more protection than ionisation models.

The Fire Angel long-life smoke alarms installed by the Fire Service tested well but did not score as highly as two similar long-life alarms - Warrior and Aura. The Fire Service is reviewing its choice to make sure it is providing the most effective alarm at the best price.

**Advice**

The Fire Service and Consumer NZ advise installing long-life photoelectric alarms. Ionisation alarms are generally good at detecting fast flaming fires but not as good at picking up smouldering fires. Photoelectric alarms generally perform better at detecting both types of fires. ◀

**For more** Visit the Fire Service website at [www.fire.org.nz](http://www.fire.org.nz). To find details on the best smoke alarms, visit [www.consumer.org.nz/reports/smoke-alarms](http://www.consumer.org.nz/reports/smoke-alarms).