

NEW SOUTH WALES FIRE BRIGADES

OPERATIONS BULLETIN 2005/01

Cellulose Fibre Insulation



The Fire Investigation and Research Unit has determined that a number of recent fires in commercial and domestic premises have involved ignition of Cellulose Fibre Insulation (CFI).

CFI is made from pulverised, recycled newspapers with the addition of a flame retardant using borax and boric acid during the milling process.

Over time, the fire retardant properties of this product may breakdown and become flammable under certain conditions.

When used in a ceiling area or wall cavity, the physical arrangement of CFI can create air gaps over a large surface area. This arrangement may result in ideal flame spread should CFI come into contact with potential ignition sources such as air conditioning, steam pipes, fire places, general power outlets and light fittings.

In particular, low voltage down lights can produce temperatures up to 400 degrees Celsius. If ignition does occur, fire spread may progress through the subsurface of CFI in all directions away from the ignition source.

Firefighting

Visible signs of a fire may not be readily apparent due to the tunnelling effect of fire burning under CFI. To detect heat/fire spread where CFI is found fire fighters must consider the following:

- Isolate electrical power before attempting extinguishment.
- Look for blistering or discolouration to surface areas.
- Use the back of the hand to ascertain changes in temperature.
- Listen for combustion noises (popping and cracking) in structural cavities.
- Look for smoke issuing from air vents and roofing materials.
- If available utilise a thermal imaging camera to ascertain total fire spread.
- Use a light fog spray only as jets may scatter embers and create secondary fires some time later.

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- Excessive water will add weight to both the CFI and structure thereby increasing the likelihood of structural collapse. Minimise the amount of water used to achieve extinguishment.
- The roof structure is likely to have been weakened by fire but the extent of the damage may not be obvious.

Caution: Employing a positive pressure ventilation fan may aerate and intensify any fire.

Note! Carbon monoxide and boric acid dust may be present so breathing apparatus and gloves are mandatory.

Overhaul

Fire extinguishment in ceiling cavities can be difficult and dangerous work. Where minor fires are encountered, shovel and scoop affected CFI into a container and remove to an open area for final wet down. A clear area one metre in diameter should be made around the point of ignition to eliminate the possibility of further under surface fire spread.

At larger fires, the pulling down of a fire damaged ceiling may be the only way to prevent the spread of fire. Assess the likely hazards and type of ceiling material being removed and where necessary, establish internal collapse zones if structural integrity is compromised.

Noted, Station Commander	A	B	C	D	Other

Contact Officer:	File Number:	Date:
Name: Station Officer Steve Apps NSWFB Research Officer FIRU PH (02) 9318-4877	CHO/06238	17th January 2005.

Previous Operations Bulletin: 2004/9 Selection and wearing of Hazmat PPE.