



Our stories:

Promoting fire-safe design to help save lives

A new guide, supported by BRANZ, brings together latest international best practice in fire safety design for buildings featuring massive timber structural elements. The guide is an important step to helping keep people safe in the event of a fire.

As countries around the world strive to meet ambitious carbon targets, timber is growing in popularity as a building material. With that comes increased fire risk because extra timber can become additional fuel in a fire.

In many countries, fire resistance testing and fire safety regulations focus on non-combustible materials. Design guidance does not reflect a recent surge in the use of massive timber – engineered wood products that involve layers of strong, load-bearing elements. This brings a new challenge for fire engineers: modern buildings with massive timber structural elements can be at much higher risk of fire.

Over the last five-to-ten years, there has been extensive research into the fire performance of massive timber construction, but very little fire design guidance has been developed.

Fire Safe Use of Wood in Buildings – Global Design Guide helps fill this knowledge gap. It summarises the very latest international best practice in wood fire safety design from 14 countries.

Through Building Research Levy funding, BRANZ supported the writing and publishing of the guide. Crucially, a digital version is available online and can be downloaded for free. This means that building designers in any country can easily access guidance

and advice based on analytical and experimental research into the fire safety performance of wood in buildings.

For example, the guide describes a new method for estimating the final char depth in panelised construction in a real fire scenario. The method considers the area of ventilation and the area of exposed timber surfaces within the compartment, as well as the fire load.

Prior to publication of the guide, char depth calculations based only on charring rates in standard fire resistance tests were used.

As Aotearoa New Zealand and other countries journey towards a net-zero carbon future, the volume of wood used in building and construction of all kinds is likely to increase. Fire Safe Use of Wood in Buildings – Global Design Guide is an important step to helping keep people safe in the unfortunate event of a fire. ◀