

Building for the Future

A Sustainable Alternative to Fibre Cement and Plasterboard



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Introduction

For over a century plasterboard and fibre cement have been foundations of the building and construction industry, utilised for everything from ceilings and flooring to cladding and decking.

And while the versatility and ease of use of these products is clear, evolving expectations within the building and design industry as well as the broader community have increased the need for alternative solutions.

The greatest challenge facing the industry today is in reducing the carbon footprint of the building environment, and the expectation that each facet of construction, from material manufacture through to ongoing performance prioritises eco-friendly building.

While prioritising eco-friendly building it is also crucial that performance is not compromised, and that strength, safety and durability remain key characteristics.

UBIQ developed INEX>BOARDS™ with the aim of providing the building and construction industry a range of high performance building sheets that improve the carbon footprint, increase safety, and offer a unique alternative to traditional plasterboard and fibre cement sheets.

This paper looks at the performance of INEX>BOARDS™ in the key fields of sustainability and fire resistance.



Sustainability

The residential and commercial building sector is one of the biggest contributors to greenhouse emissions in the Australia, producing 23 per cent of all greenhouse emissions across the country¹. Embodied energy is a significant component of this.

Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials², and plays a large part in a building material's overall environmental impact. Generally, the more highly processed a material is the higher its embodied energy and the larger its carbon footprint.

The most common and accurate measurement of embodied energy is the process energy requirement (PER), which usually accounts for 50-80 per cent of the total embodied energy requirement.

The following is the embodied energy for some of the most common building materials:

- MDF (medium-density fibreboard): 11.3 MJ/kg
- Cement: 5.6 MJ/kg
- Fibre cement: 4.8 MJ/kg
- Plasterboard: 4.4 MJ/kg
- INEX>BOARDS™: 1.92 MJ/kg*

**The embodied energy of INEX>BOARDS is on average 40 per cent that of comparable fibre cement boards.*

As we can see from these figures, the use of INEX>BOARDS™ represents an enormous reduction in the carbon footprint compared with traditional building materials, helping to contribute to eco-friendly construction and a sustainable future.

Fire resistance and protection

Australia is subject to some of the most harsh and varied weather conditions in the world, and as such, the built environment must be prepared for the unexpected.

The shortcomings of many of the building methods and materials traditionally used were exposed during the 2009 Black Saturday bushfires in Victoria, in which over 2000 properties were destroyed³.

This need for improved fire resistance of building materials was reflected in the significant changes made to the Australian Standards for construction of building in bushfire-prone areas (AS3959) immediately following the tragedy⁴.

The most significant change to the standards was for the requirement of all proposed buildings to undergo a BAL (Bushfire Attack Level) assessment, with six different levels of classification dependent on the threat level of fire to the buildings location.

The highest level is BAL-FZ (fire zone), which constitutes possibility of direct exposure to flames from fire front in addition to heat flux and ember attack.

In addition to the Bushfire Attack Level, a Fire Resistance Level (FRL) is given to building components to represent resistance to a fully developed fire, while still performing its structural function. The highest level is represented as FRL 60/60/60 which indicates 60 minutes to elapse before collapse/60 minutes that flames will not pass through the component/60 minutes insulation from flames.⁵

 In addition to **reducing the carbon footprint and increased fire resistance**, INEX>BOARDS™ are **exceptionally strong and durable** in all weather conditions

INEX>BOARDS™

UBIQ INEX>BOARDS™ are rated to BAL-FZ and FRL 60/60/60 – tested at the laboratories of Exova Warringtonfire, a world-leader in fire safety and fire resistance testing. This ensures a board that provides the highest possible fire-safety on the market.

In addition to reducing the carbon footprint and increased fire resistance, INEX>BOARDS™ are exceptionally strong and durable in all weather conditions, and with exceptional acoustic performance they provide a high-performing alternative to traditional building sheets.

INEX>BOARDS™ range includes:

- INEX>FLOOR™
- INEX>DECKING™
- INEX>MAXIDECK™
- INEX>WEATHERBOARD™
- INEX>RENDERBOARD™
- INEX>WALLBOARD™



UBIQ

UBIQ is the provider of lighter weight sheets for the construction industry. UBIQ's Low Carbon Fibre Reinforced Engineered Cementitious Composite (ECC) Technology has been in development for almost a decade to produce its range of building boards for the construction industry.

UBIQ prides itself on providing customers with the highest standard of customer care, with a 7 day phone assistance from technical advisors across every state of Australia.

REFERENCES

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- ⁴ Australian Standard 3959-2009 Construction of buildings in bushfire-prone areas, March 6 2009
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- ⁵ Fire Resistance Requirements in Australia, and how to choose the right EWPA Certified Product to Comply with the BCA, EWPA
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