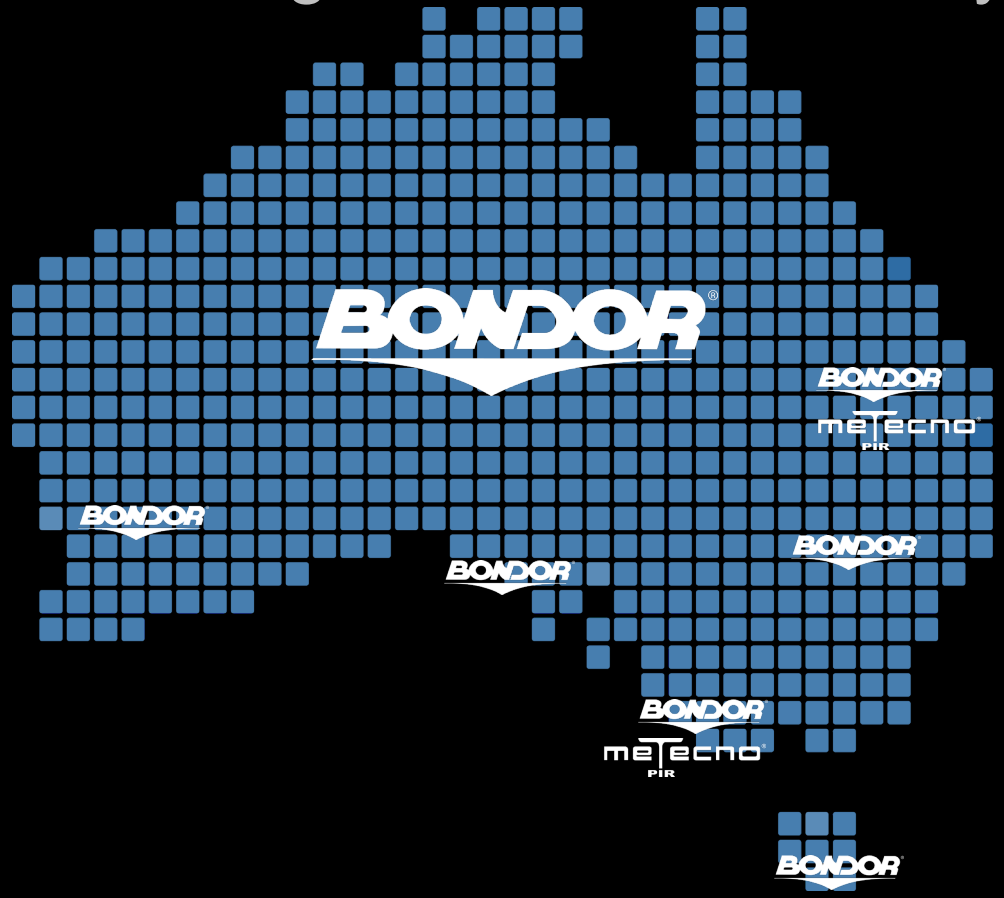
Leaders in Thermal & Architectural Building Solutions

Anthony West & Paul Caraglanis

Bondor_Metecno

Overview

National Coverage & Local Availability



- Operating since the 1950's
- Global experience in over 20 countries
- 8 Factory locations
- Sales & technical consultants
- NATA certified structural laboratory
- Significant investment in R&D
- Founding member of IPCA

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The industry has continued to develop basic product design as well as installation techniques in response to customers needs and market opportunities

- 1950’s early eps panel, square joints, basic
- 1980 introduction of FR for EPS
- 1986 slip joint developed by Bondor improved joint technology for better sealing & fire performance, world first
- 1980’s development of PUR then PIR
- Introduction of MW cores
- Continued development on construction techniques and core performance
- 2010 introduction of IPCA Code of Practice
- 2012 IPCA Flood performance study

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Three globally accepted core materials

3 x Cores

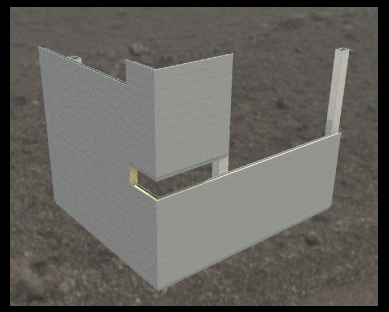
EPS-FR

PIR

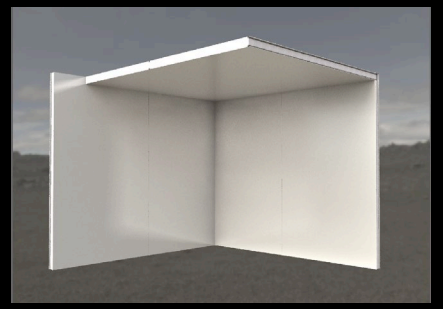
MW

Insulated
Roof Systems

Insulated
Wall Systems



Controlled
Environments



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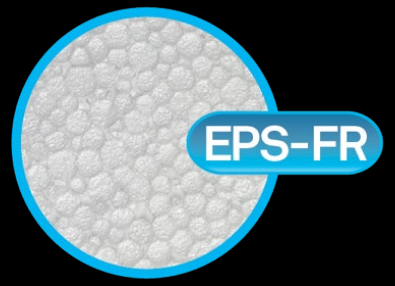
Insurance Industry

- Arson
- Poor electrical installations
- Hot work and welding
- Hot cooking processes
- Deep fat continuous fryers
- Ducts and flues
- Refrigeration defrosts (4 types)
- Process gases
- Houses keeping and storage of combustibles
- Battery charging

Major events impacting insurance market, particularly in our region
Christchurch earthquake
Brisbane Flood
Queensland Floods
Tsunamis in Asia /Pacific
Cyclones - Australia

The risk of ignition is controlled by fire prevention measures typically a mix of physical and management processes. Poor design, maintenance or governance cannot be compensated by a building product alone.

Core options



EPS-FR cored panel has Fire Retardant added to the core

When exposed to flame the core shrinks away from the heat source and self extinguishes

- It has been used in Australia since mid 1950s initially in cold-rooms but since 1980's across all sectors of the construction industry
- Cheapest in $/m^2
- Easy to handle, cut and shape
- The lightest weight of the three different core types means best thermal performance to weight ratio (lambda/ kg)
- It comes in different grades of density, which determines the mechanical properties of the product

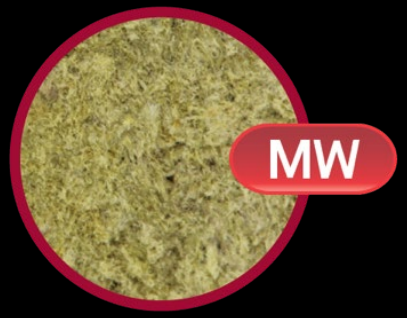
Core options

PIR cored panel char resists burning

Polyisocyanurate (PIR) is a thermoset, medium density, high strength foam, which will char when exposed to flame

- PIR has 70% better thermal performance than EPS-FR
- Commercial / warehousing
- It is formed by a chemical reaction at high temperature
- There are many different grades of PIR depending on the chemical composition

Core options



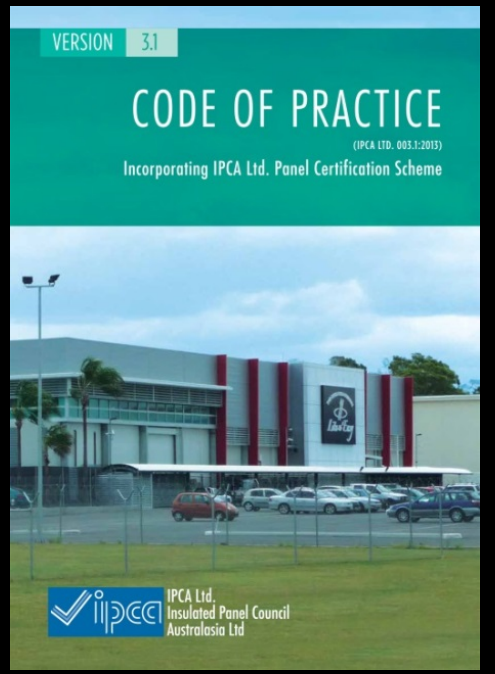
Mineral Wool cored panel is the only non-combustible core product

Mineral Wool (MW) is molten rock which has been spun into a wool-like fibre and bound with resin. The fibres trap air creating insulation; it does not burn when exposed to flames.

- Good for hot work areas
- Boundary walls
- Not appropriate for cold chain (freezers, cold rooms) <4˚C
- Heavier of the three core types

IPCA Code of Practice

- Developed in 2010 with independent experts
- Based on assessment of international standards and analysis of fires involving panel
- Because panel operates as a system in real life the COP covers
  - Design & detailing
  - Manufacture
  - Installation
  - Maintenance and house keeping
- Includes certification and labelling
- Supported by AFAC



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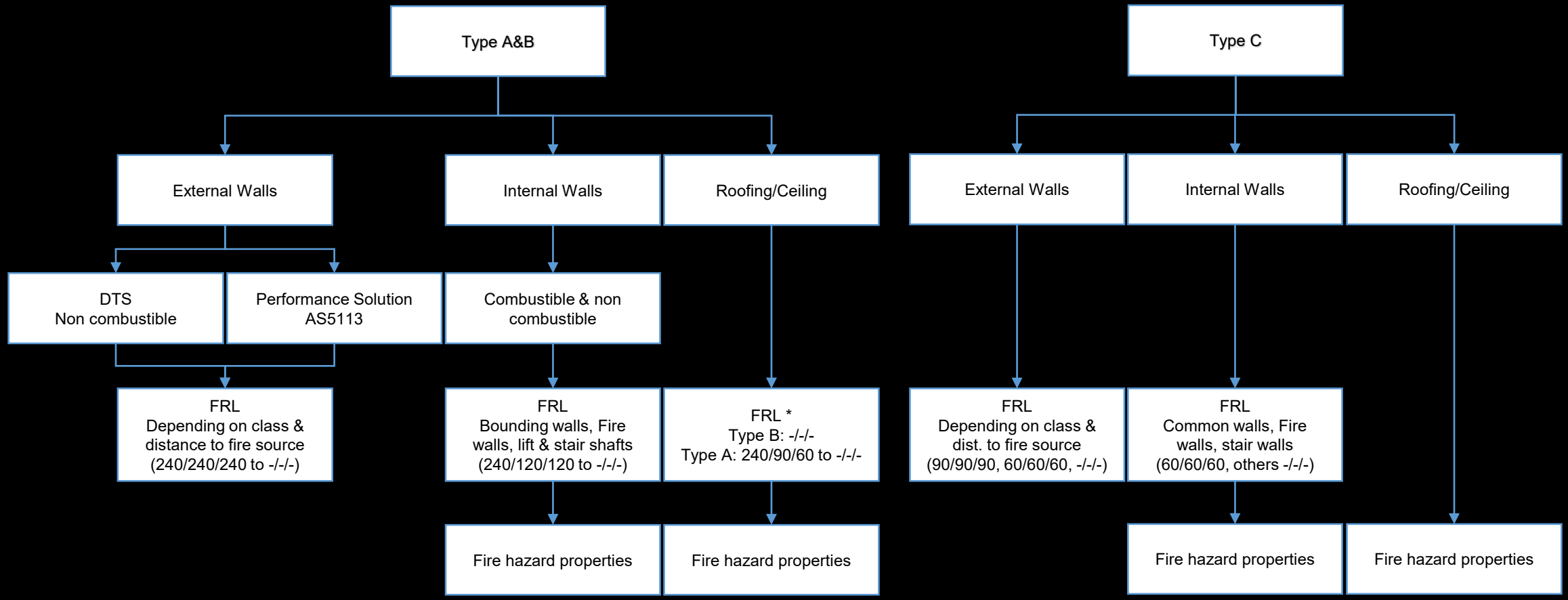
IPCA - COP

- Some common themes relating to management of risk that were incorporated into COP
  - Panel doesn't start fires and a higher grade panel will not cover up for poor risk management or housing keeping
    - If 80% of fires analysed occur in hot work areas then using the appropriate panel in hot work areas would seem to be a logical approach rather than discarding all panel
- COP process includes submitting drawings for approval, certification as code compliant, follow up audits.
- Covers items such as floor insulation, sealants, fixings, joints thermal cuts, relief ports, heater cables, doors etc.
- Similarly to fire performance, panel installed correctly performs well in flood situations
  - Based on an extensive study of the performance of panel in the Brisbane flood IPCA published a guide for improving flood resilience of industrial buildings

NCC Fire Design Summary



**Roof need not comply if its covering is non-combustible & the building has sprinkler system, or rise in storey ≤ 3,or is of class 2 or 3, or has an effective height ≤25*

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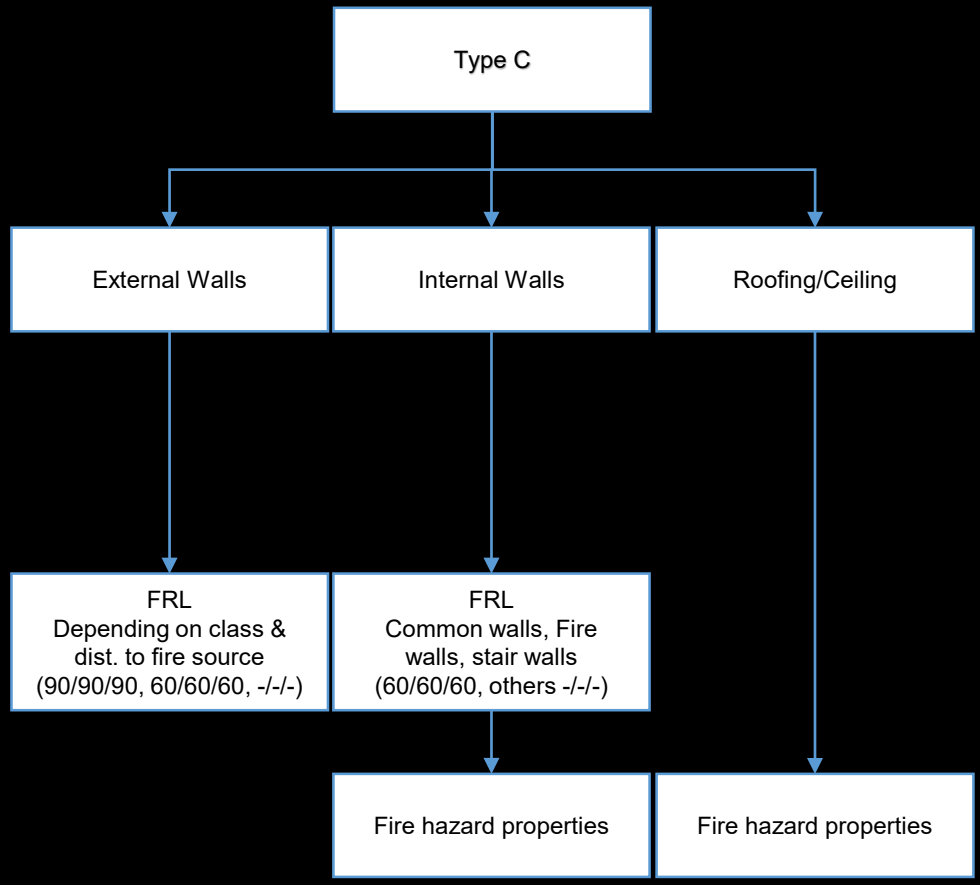
NCC Fire Design Summary

Winery is Construction Type 8. If 2 storeys or less then it is Constitution Type C, 3 storeys Type B, 4+ Type A

So assuming we have a single storey winery it is a Type C construction, does not require non-combustible external walls or internal walls but may require an FRL depending on distance to boundary etc.



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Thank You