

# **BUILDING**

*FOR THE FUTURE*



- **ECOLOGICAL SUSTAINABLE ENERGY EFFICIENT BUILDINGS**
- **SIGNIFICANT COST SAVINGS**
- **RAPID CONSTRUCTION**

## About Us

Ecohousing Building Systems is committed to the development, manufacture and marketing of environmentally friendly products and methods. We are “building for the future”, satisfying the need for a low cost, ecologically sound and totally insulated building solution that combines the strength of steel with the outstanding thermal qualities of polyurethane.

Our products are classified as Structural Insulated Panels (SIPs). Their lightness, innate strength and load-bearing capabilities make them ideal for minimal-frame building methods, with consequent significant savings in



## THE ECOHOUSING BUILDING SYSTEMS ADVANTAGE

Declining traditional building skills (particularly in bricklaying), more stringent energy rating requirements for new housing and inevitably rising prices, coupled with increased interest in ecology and sustainability, have encouraged increased interest in and acceptance of a fresh approach to housing, particularly in the area of building materials.

Heating and cooling account for 39% of Australia’s total energy consumption and 15% of residential sector greenhouse gas emissions. The thermal qualities of the Ecohousing Building Systems provide for huge savings in energy requirements.

### Ecohousing Buildings are Bushfire/Arson Safe

- *Structural Insulating Wall Panels*
- *Structural Insulating Roof Panels*
- *Structural Insulating Floor Panels*
- *Non – combustible double sided fibre-cement and steel facings*
- *Structural Polyurethane Core*



construction time and costs. High thermal resistance ratings mean that Ecohousing homes easily meet the highest star energy efficiency requirements. The Ecohousing Building Systems are protected by world-wide patents.

## Wall Panels

Ecohousing Building Systems wall panels comprise of a high pressure injection bonding of **structural polyurethane (PUR)** between sheets of fibro-cement, resulting in fire resistant panels of high strength and light weight, and can be ordered in 80mm or 104mm thickness and width of 900mm. Lengths are available in 2400mm, 2700mm, 3000mm, 3300mm and 3600mm.

### Features:

- High R rating; 80mm R 4.02. 104mm R 5.37
- Totally reliable thermal and acoustic continuity and performance
- No cavities, no gaps, no cold bridges, no thermal leaks
- Lightweight
- Fire resistant
- Vermin(Rodent), ant and termite safe without any poisonous chemicals
- Indoor and outdoor applications
- Weather resistant
- Guaranteed long term performance



## Roof Panels

Ecohousing Building Systems' unique lightweight roof panels are available in lengths up to 9 metres, comprising a laminate of polyurethane between sheets of Smartspan® in Colorbond® or Zinalume. The 106mm panels offer a thermal value of R4.53 bare, and have achieved a permissible stress design load of 3.7kPa from James Cook University's Structural Cyclone Testing Centre. They are complimented by standard cappings and gutter systems.



### Features:

- Generous span capacity of up to 7 metres
- Absolute structural consistency
- Insulation index R4.53 bare
- Available in all Colorbond® finishes
- Simple "click-in" installation  
Combination of lightness and construction method means speedier project completion



## Floor Panels

In elevated and 2 storey houses, Smartspan® zinalume cladded roof panels are utilized as floor panel with lengths up to 9 metres with 3.6 metre spans. Floor finish is usually yellow tongue screwed to the panel. The weight of the panels, in concert with their structural rigidity, allows for a reduction in total stumps required for elevated houses and very little use of concrete to anchor posts with no interference to the natural terrain. The insulation value is R 5.02 bare and increases with different coverings.

### Features:

- Ease and speed of erection
- Elevated houses leave a much smaller environmental "foot print"
- Site waste dramatically reduced
- Suitable for all sub-frames
- Completes the "thermal overcoat" recommendation for energy efficient housing
- Weather resistant



## Wall Cladding Panels

Cladding panels are designed to meet the needs of the home owner/renovator and DIY market. Available in the same dimensions as the standard wall panels, cladding panels are 60mm thick with a high R3.01 rating or 80mm thick giving a R4.02 rating.



Existing energy deficient buildings are one of the main causes of global warming, producing billions of tons of carbon dioxide emissions yearly. Encapsulating and renovating asbestos cement houses has enormous potential for saving householders tens of thousands of dollars. There is no need to remove any existing coverings as the cladding panels simply fasten directly over the top, securing a health risk and upgrading to an exceptional energy rating. (See cladding brochure for further details).



## Split Roof Panels

Split roof panels can be used to replace existing old fibro, tile and metal roofs. They can also be fixed directly to metal roofs of homes, industrial buildings and packing sheds. They offer outstanding insulation values and increased roof strength, whilst modernizing the building.



## Bush Fire Safe/ Arson Safe

Using non-combustible fibre-cement & steel facing panels with fire retarded Polyurethane foam core, the panels do not ignite when subjected to fire. They are ideal for Buildings in Bushfire prone areas; fire uses enormous amounts of oxygen to feed the flames.

The main entry of oxygen is through windows and doors, fire also needs and exit to suck in more oxygen to feed the flames, the natural exit is through the roof. As soon as the roof collapses the fire will be out of control, with Ecohousing Roof Panels the roof will not collapse in a Fire, neither will the wall panels. By fire proofing the windows and doors, you can be Bush Fire Safe. Public buildings can be safe from being burnt down through Arson attacks saving millions of dollars in Insurance payments if built with Ecohousing Wall, Roof & Floor Panels.



## For Further Details

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**Ecohousing**  
**Building Systems**



# WARNING



## Polystyrene Sandwich Panel Fire Risk

Terminology should not be confused over the two major Sandwich Panel Manufacturing processes. One is injected **Polyurethane structural foam (PUR)** the process used by Ecohousing, the other is glued in place **Expanded Polystyrene foam (EPS)** termed **Polystyrene**.

**Polystyrene sandwich panelling is an extremely fire hazardous material to use, especially as a sandwich panel**, as the softening point of polystyrene is 100°C and the melting point is only 180°C. This is the temperature that you use when grilling a steak, a light bulb gets to 280°C, pentane a key component of Polystyrene ignites at this temperature. In a fire once this temperature is reached the sandwich panel loses its integrity, collapsing allowing the pentane gas of the melting polystyrene to ignite. Flash over then occurs and sets fire to the rest of the polystyrene foam, travelling within the sandwich panel adding a huge fire load. Within minutes the entire building will be destroyed due to the collapsing roof and walls.

The risk of people being trapped and killed by the rapid spread of the fire with the napalm effect of molten polystyrene dripping from the sandwich panels is very real. In other countries prosecution which involved criminal chargers has resulted from non-disclosure of **EPS** product fire risks.

Insurance companies are now refusing to insure commercial buildings & cold rooms etc, manufactured with Polystyrene due to its fire hazard. Examples of this include the Tip Top Bread complex fire in 2002 causing \$100million damages, the \$8 million Detention centre fires in 2002, the Queensland Polystyrene Panel fire in a meat processing plant in 2001 causing an approximately \$25 million in damages and the biggest fire in NZ the Poultry Abattoir in 2007 causing \$NZ 50 million to \$NZ 100 million dollars in damages.

*Customers should be warned of the dangers of **EPS** by the manufactures of the Polystyrene sandwich panels. Not notifying their customers of this risk could be deemed **reckless or even product disclosure negligence.***



**Tip-Top Bakery**