



**Chemind**  
**HI-TEC POLYMERS**

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Mr Tonny Bergqvist  
Managing Director  
Ecohousing

Dear Tonny,

Further to recent discussions, please find following information regarding the resistance of your construction panels to vermin and pests. Laboratory testing by Chemind Hi-Tec Polymers, International studies and associated research has yielded the information below.

#### **Vermin Resistance (Rodents, birds, native mammals etc)**

The resistance of fibrous cement faced, polyurethane foam cored construction panels to attack by vermin has been studied internationally. Research has indicated the following:

- 1) Compressed Fibre Cement sheeting offers a high degree of resistance to penetration by vermin.
- 2) The polyurethane core materials provide no food value to vermin.
- 3) Inherent internal strength of the polyurethane core materials makes penetration of the core considerably more difficult than for other materials such as polystyrene foam or fibrous type insulations. **The additional effort required to penetrate the polyurethane core acts as a vermin deterrent.**
- 4) Design of the Ecohousing panels is such that access to the polyurethane foam core is only possible at the top and bottom edges of walls.
- 5) Vermin access into the core of Ecohousing roof panels is not anticipated to be of concern due to uncomfortably high internal temperatures experienced within the panel resulting from direct sunlight exposure.
- 6) To prevent entry of vermin, birds etc at the corrugated wall-roof junction or other exposed regions, a profile cut, bitumen impregnated flexible foam seal or profile cut perforated metal barrier is recommended.

#### **Termite Resistance**

The resistance of fibrous cement faced, polyurethane foam cored construction panels to attack by termites is not readily answered. There are no published studies by recognised bodies such as the CSIRO etc. The following points of fact however do apply:

- 1) The polyurethane core materials provide no food value for termites or other insects.
- 2) Not only does the polyurethane foam not provide termites with a food source, the very low humidity environment within the panel is also not attractive to them. As a result, if there is a more suitable environment, with a food source elsewhere, it is likely it will be the favoured option.

- 3) Termites are no more a problem in Structural Insulated Panel (SIP) construction than in conventional construction. Countries that have termite problems, such as Australia and most other countries adapting good building practices, it is already a construction requirement to use preventive treatments.

### **Fungal & Microbial Resistance**

The resistance of fibrous cement faced, polyurethane foam cored construction panels to attack by vermin has also been studied internationally. Research has indicated the following:

- 1) Suitably sealed/painted compressed fibre cement sheeting will offer very limited opportunity to support surface growth of fungi or bacteria.
- 2) The polyurethane core materials provide no food value for microorganisms.
- 3) The polyether-polyurethane chemical composition of the core material is well known and documented to be resistant to microbial attack, even when water immersed.
- 4) Unlike polystyrene, the closed cell structure of the polyurethane foam provides superior resistance to moisture and water vapour ingress than can be achieved by polystyrene foam. This results in a very low humidity environment within the polyurethane core, further preventing fungal or microbial growth.

I trust you will find this information useful. If I can be of any further assistance, please do not hesitate to contact me.

Yours sincerely,



Scott Whitelaw  
Technical Manager  
Chemind Hi-Tec Polymers

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