

## Revised NZ Standard establishes “fire resistance” criteria!!

The newly published **NZS 4541:2007** Automatic fire sprinkler systems - divides insulated panels into two classes:

- **Combustible** foamed plastic cored insulated panels (e.g. standard EPS coolroom panels) and
- **Approved** foamed thermosetting plastic cored insulation panels that have been fully tested and certified by an accredited laboratory in accordance with the testing criteria of ISO 9705, **FM Approval Class 4880** or LCPB LPS 1181.

**PØLYPHEN Panels** are the ONLY New Zealand made fire resistant insulated panels that have **FM Approval** and meet the requirements for “Approved panels” under this NZ Standard.

The specification of other “fire resistant” panels on recent projects, has caused considerable difficulties for consultants, contractors and building owners. Claims of FM Approval in New Zealand should be closely scrutinized, and the availability of imported elements should also be demonstrated before contracts with other panels are let.

### Background

The call for restrictions on the use of standard polystyrene (EPS) coolroom panels in New Zealand has come over the last few years from the international fire insurance underwriters since EPS panel construction was phased out in the UK in the late 1990's.

The benchmark that is used in this part of the world, is that established by the American based insurance company FM Global (incorporating Factory Mutual Insurance) for fire resistant insulation panels.

### FM Global

FM Global is an international insurance company that has a predominance of engineers on their staff rather than actuaries. They have been pro-active in writing acceptable specifications for buildings that they insure, and also in establishing Standards which they test for in their own in-house test facility in Rhode Island USA.

To achieve certification by FM Global, factory manufactured insulated panels must pass the requirements of FM Approvals Standard 4880 (1994) – Metal-faced - Class 1 Fire Rated. This involves initial tests on the core material, then establishment of the density of the core material, the maximum panel thickness, and system fixing details, before full scale room corner fire tests are carried out on rooms built to the determined panel details.

### FM Approval

If the room fire test is passed, FM Approval is then granted for the fire resistant insulated panel system to be used for construction of rooms in accordance with the approved details. It is important to note that Approval is granted for the fire tested system, not for the core material or for the panel only. The production plants for both the core foam material and the panel lamination plants are also certified and approved as part of the Approval process. The FM Approval Report covers all these aspects and you should sight a copy of this Report for any Approved panel system you are specifying.



### New Zealand Standards



NZS 4541:2007  
Automatic fire  
sprinkler systems

FM Approval is endorsed as the benchmark for classing fire resistant panels by the New Zealand Sprinkler Standard NZS 4541:2007. Only panel systems that have FM Approval, or have been assessed and approved by other accredited facilities that have established similar fire performance certificates and listed ratings, are recognized as “Approved panels” by this Standard.

Under this new Sprinkler Standard, rooms that are built from panels that are **not** “Approved panels” are required to have the nominated sprinkler systems installed.

### PØLYPHEN Panels

**PØLYPHEN Panels** are the ONLY panels fully manufactured in New Zealand that have FM Approval. The core material is manufactured in Tauranga and the panels are laminated at Insulated Panels and Doors Ltd (IPD) in Palmerston North or at Metalcraft Insulated Panel in Auckland. Panel is available on very short lead times, and in long lengths as required.

**PØLYPHEN Panels** have been available in New Zealand for the last two years and have been used on many projects including buildings for Agrifeeds, Comvita, EastPack, Fonterra, Griffins, Goodman Fielder, Kaimai Cheese, La Bonne Cuisine and Tip Top.

### **Other Panels**

Imported panels that are known to have FM Approval are PIR panels from Kingspan and Mineral wool panels from Paroc.

Other panels understood to be made in New Zealand include Mineral wool panels from Metecno and Bondor, and XFlam panels from Bondor. **These panels are not known to have FM Approval in New Zealand.**

### **Fire Rating**

There is some confusion in the industry about the difference between the *fire resistance* of panels and the *fire rating* of panels. Fire resistance, as measured by the full scale room corner fire tests to determine the resistance to fire spread by the panels within a room, is the basis of FM Approval. It is applied to all panels in a building.

Fire rating is a measure of heat transfer through a panel to other property beyond the panel. Fire rating is applied only to fire separation walls in a building – usually only the boundary walls. While this can be an issue, it is not the focus of concern over EPS panels. Fire rating values are not appropriate to use as a measure of fire resistance.

### **Future-proofing**

Insurance availability, like many things, goes in cycles. If you are designing or constructing a new insulated panel building now, there will be a number of insurance cycles over the life of the building. It is now very clear what the expectations of insurers of insulated panel buildings are.

Can you risk either not being able to obtain insurance at some point in the future? Or having to install sprinklers to a building not built from “Approved panels”? Or having to retro-fit “Approved panels”?

Future-proof your new building by ensuring it is constructed using an Approved fire resistant insulated panel system. This can be done by specifying **PØLYPHEN Panels** by name thus:

#### **INSULATED PANELS:**

Fire resistant panels used on this project are to be Polyphen Panels, or similar “Approved Panels” as defined in Appendix J of NZS 4541:2007

#### **Approved Panels:**

Approved foamed thermosetting plastic cored insulation panels (e.g. Phenolic/EPS composite and PIR foamed plastics), or other new foamed plastic cored insulated panels, or noncombustible core materials that have been fully tested and certified by an accredited laboratory in accordance with the testing criteria of ISO 9705, FM Approval Class 4880 or LCPB LPS 1181 Part1, Part 2 or LPS 1208 and that can provide listed ratings and similar fire protection ratings.

For more information visit [www.polyphen.co.nz](http://www.polyphen.co.nz) or phone **0800 4 POLYPHEN** (0800 476 597)



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