



AUTOMA
MULTI STYRENE
Safeguarding Your Product

POLYPHEN[®]

A novel fire-resistant insulation foam. At last, the long awaited solution to the world-wide problem of fire risks associated with foam core sandwich panels.

Polyphen[®] Features and Benefits

- Is a new revolutionary rigid Polystyrene/Phenolic composite foam
- Exhibits excellent fire resistance properties
- Has excellent thermal insulation performance
- Possesses excellent mechanical properties
- Can be manufactured to have significant sound absorbing properties

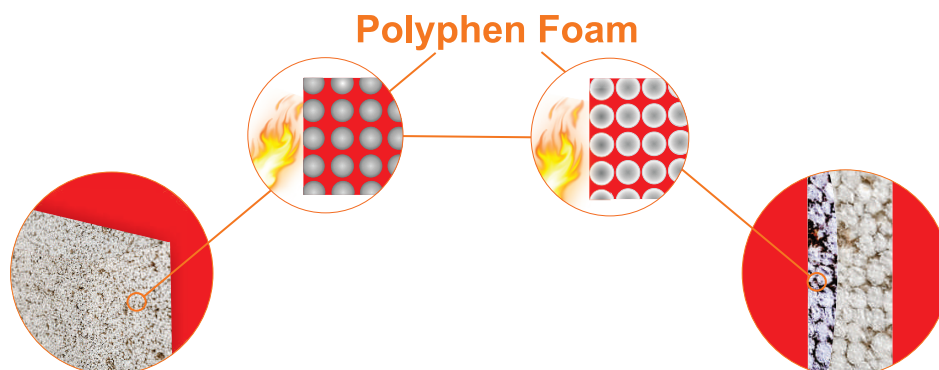
Polyphen[®] is suitable for

FM Class 1 accredited panels FM 4880,4882

- Cold storage and warehousing (steel clad panels)
- Partitioning
- Rendered factory and housing insulation as well as hygienic building structures
- Pipe and vessel insulation
- Residential Applications, e.g. light-weight wall cladding with rendered finish and profile mouldings
- Panels for smoke sensitive occupancies

How Polyphen[®] works

In a fire situation, the EPS will gradually decompose and evaporate. When this occurs the Polyphen[®] foam is left in a honeycomb shape and it is this, which acts as a fire buffer.



POLYPHEN[®]



Automa is the licensed manufacturer and supplier of Polyphen[®] in South Africa



Polyphen® Technical Information

The following test results were obtained for a nominal 50kg/m³ foam manufactured in both Australia and New Zealand.

Property	Metric
Density	48 - 50 kg/m ³
Compressive Strength (AS 2498.3)	126 kPa
Cross Breaking Strength (AS 2498.4)	248 kPa
Shear Strength (ASTM C273)	104 kPa
Tensile Strength (ASTM D1623)	238 kPa
Thermal Conductivity at 25 degrees	0.0368 W/m ² C
Dimensional Stability (AS 2498.6)	
70° C, 95% RH, 20hrs	Less than 0.5%
-10° C, 20hrs	Less than 0.5%

Polyphen® has sound absorbing properties

Polyphen® competes with Polyurethane (PUR), Polyisocyanurate (PIR) and acoustic foams at lower cost while providing a higher fire resistance.

Biological Resistance

Mould - does not promote mould growth.

Vermin - offers no food value to insects or rodents.





Polyphen® Fire Resistance Properties

The following test results were obtained for a foam manufactured in both Australia and New Zealand.

Physical Property	Units	Polyphen	Test Method
Flame propagation characteristics;			
Median flame duration, max.	SD	0	AS 2122.1
Eight value, max.	SD	0	
Median volume retained.	Percent	96.4	
Eight value, min.	Percent	96.2	
Fire propagation and smoke release			
Spread of Flame Index (SFI)		0	AS/NZS 1530 Part 3
Smoke Developed Index		3	
Surface burning characteristics			
Flame Spread Index		20	ASTM E84 -05
Smoke Developed Index		5	

Physical Property	Polyphen	Test Method
FireRating		
200mm thick Polyphen® sandwich panel with 0.6mm steel both sides (tested by Warrington Fire Research [BS 476 Part 24, ISO834, ASTM E119])	2 hours	AS1530.4
ISO 9705 RoomCorner Test	Group 1	
Building code of Australia	(no flashover)	ISO 9705
Factory Mutual Room Corner Test	Class1 Fire Rated	
FM ApprovalsStandard 4880 (1994) for sandwich panels up to 250mm thick, 0.6mm steel both sides with tongue - and - groove joint	Unlimited Height	FM Approvals Standard 4880 and 4882
SANS 10177 Part 2		
125mm thick core clad with 0.58mm cromadeck metal sheeting	1 hour	SANS10177-2 (2008)
European Single Burning Item Test 23/12/2010	A2/B - s1 - d0	EN 13823: 2002

****Disclaimer:** There are many complex variables in a sandwich panel system. These range from raw material inputs through the panel manufacturing process, technical standards and jointing system to installation details. All have a significant impact on a sandwich panel system's structural and fire performance qualities. Look-a-likes and/or equivalents are invariably not the same. Designers, authorities and end users that use the information presented by Automa in regard to the attributes of Polyphen® therefore do so at their own risk. Automa Multi Styrene employs world class technology, undertakes independent audits and utilizes autonomous testing authorities to ensure the consistency and validity of the information presented relating to Polyphen® fire resistant insulation.