



PHENCLAD PANELS
General Technical Specification

General description:

PHENCLAD panel - Phenclad is a composite sheet product consisting mainly of cured phenolic resin and glassfibre. It is one of the most effective cosmetic FIRE RESISTANT sheet materials available, producing relatively minute quantities of smoke and toxic fumes when exposed to fire – whilst still retaining excellent physical properties at high temperatures.

FINISHING SURFACE

Standard surfaces included:

1. Smooth / Crinkle
2. Smooth / Smooth
3. Smooth / Leatherette
4. Crinkle / Crinkle
5. Leatherette / Leatherette
6. Smooth / Resotex

Surfaces available for special order:

1. Woodgrain / any from standard range

WEIGHT OF A PANEL:

THICKNESS	WEIGHT
[mm]	[kg/m ²]
2mm	2.60
3mm	4.00
4mm	5.10
5mm	6.80
6mm	8.10

PHENCLAD is a composite sheet product consisting mainly of cured phenolic resin and glass fibre. PHENCLAD is one of the most effective cosmetic fire resistant sheet materials available producing comparatively minute quantities of smoke and toxic fumes when exposed to fire - well within the most stringent limits of any international fire standard - while still retaining excellent physical properties at high temperatures. PHENCLAD is manufactured to the highest quality standards using a computer controlled continuous process. PHENCLAD is ideal for cladding, lining, partitioning, panelling and many other applications. It is available in a wide range of colours and in several surface finishes and may also be bonded to other materials to provide for a wider range of applications.

**Comparison of PHENCLAD with other materials' (typical)
mechanical,
thermal and fire properties:**

TECHNICAL INFORMATION

*Figures for PHENCLAD are based on a typical product.
Strength characteristics can be greatly improved by using

combinations of the wide range of reinforcements available.

Flame Retardant Polyester GRP					
Property	*Phenclad	Unfilled	Filled	Mild Steel	Aluminium
Density (g/cc)	1.4-1.5	1.4-1.5	1.6-2.3	7.8	2.7
Tensile Strength(MPa)	100-150	100-150	30-75	410-480	80-430
Tensile Modulus(GPa)	5.5-7.5	6-7.5	7-19	210	70
Elongation at Break %	1.8-2.5	1.8-2.5	0.4-1.7	20-35	3-18
Flexural Strength(MPa)	150-200	150-200	100-125	200(yield)	65-220(yield)
Flexural Modulus (GPa)	6-8	6-8	6-15	210	70
120D Impact Strength notched (kJ/m ²)	65-75	50-60	20-50	-	-
Coeff.Thermal Exp. (°C ⁻¹ x10 ⁻⁶)	10-15	25-35	18-25	11-14	22-24
Coeff.Thermal Conduct. (W/m°C)	0.20-0.24	0.2-0.23	0.22-0.3	46	140-190
Temperature Index (BS 6853)	>420 degC	-	<365 degC	<420 degC (Painted)	>420 degC (Painted)
Building Regulations (BS 476)	Class 1/0	Class 1/0	Class 1/0	Class 0 (Painted)	Class 0 (Painted)
3 Metre Cube Smoke Test (BS 6853)	Cat. 1	Fail	Cat.2	Cat.1 (Painted)	Cat.1 (Painted)

Phenol Formaldehyde (Phenolic) resins have been in commercial use for just under 100 years. Recent advances in resin/catalyst technology and continuing improvements in glass fibre production techniques combined with unique processing methods have made the manufacture of PHENCLAD possible. The product has undergone relevant tests by an internationally recognised Fire Research Centre. Copies of the results can be made available on request by interested parties. Details of the tests are as follows:

General Standard	Description	Test Limits	Result	Remarks
BS 476 Pt. 7.1987	"Surface Spread of Flame"	165 mm in 1.5 mins	NIL Spread	CLASS 1
BS 476 Pt. 6.1989	"Fire Propagation"	l < 12	l = 6.1	CLASS O overall with Pt. 7
BS 6853 1987, B.5.2	"Smoke Density"	Ao (on) < 1 Ao (off) < 1.5	Ao (on) = 0.86 Ao (off) = 1.15	Category 1 - suitable for high risk railway rolling stock
NES 713	"Toxicity Index"	-	2.02	Category A - suitable for high risk areas

PHENCLAD is relatively easy to handle and install using a variety of complementary fixing systems. It is easily cleaned, has a graffiti resistant surface, is shatterproof, has similar if not better physical attributes to other composites and is extremely cost effective. PHENCLAD can be drilled, sawn, cut and machined using standard tools and equipment.

PHENCLAD can be produced to a wide range of dimension with thickness starting at 2mm, width up to 1500mm and virtually any reasonable length. Generally, stock sheet sizes are 1250 x 2500 mm. Non-standards can be made available on request.

HEALTH AND SAFETY:

As with other sheet products, careful handling and lifting, using gloves, will minimise accidents. Good workshop practices should be in place when machining, i.e. Proper ventilation, extraction, dust masks, visor/glasses and gloves. In food processing areas, damaged or scuffed sheets exposing fibres below the surface coating should be replaced or sealed using materials as advised by the manufacturer.

ENVIRONMENT: PHENCLAD will not contribute significant amounts of smoke or toxic fumes into the atmosphere as a result of fire. It will also replace many materials which are in dwindling supply (e.g. hardwoods) and others which consume high amounts of energy during manufacture (e.g. aluminium, steel). On completion of its useful life - for whatever reason - PHENCLAD can be crushed and recycled as a filler for a variety of purposes. **QUALITY STATEMENT:** Quality controls are in place in the procurement and storage of materials, throughout the process operation and at packing and despatch. Staff are employed on work of which they have full understanding and which falls within their known capabilities. Materials are purchased on the 'most suitable for the job' principle with non-conforming materials stored remotely and returned to the supplier. Intermittent quality audits are carried out by the management who are fully committed to the installation of quality control systems that comply with recognised international standards.

Due to the wide variety of products and variations available in the Fybaplate range, the following **technical specifications** should be considered as a guide only. Please **contact us** directly for more accurate product qualities and performance ratings.