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Rf9 (K2)+(K3)	

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Promat

NBS Plus

RIBA · CPD · MATERIAL · ASSESSED

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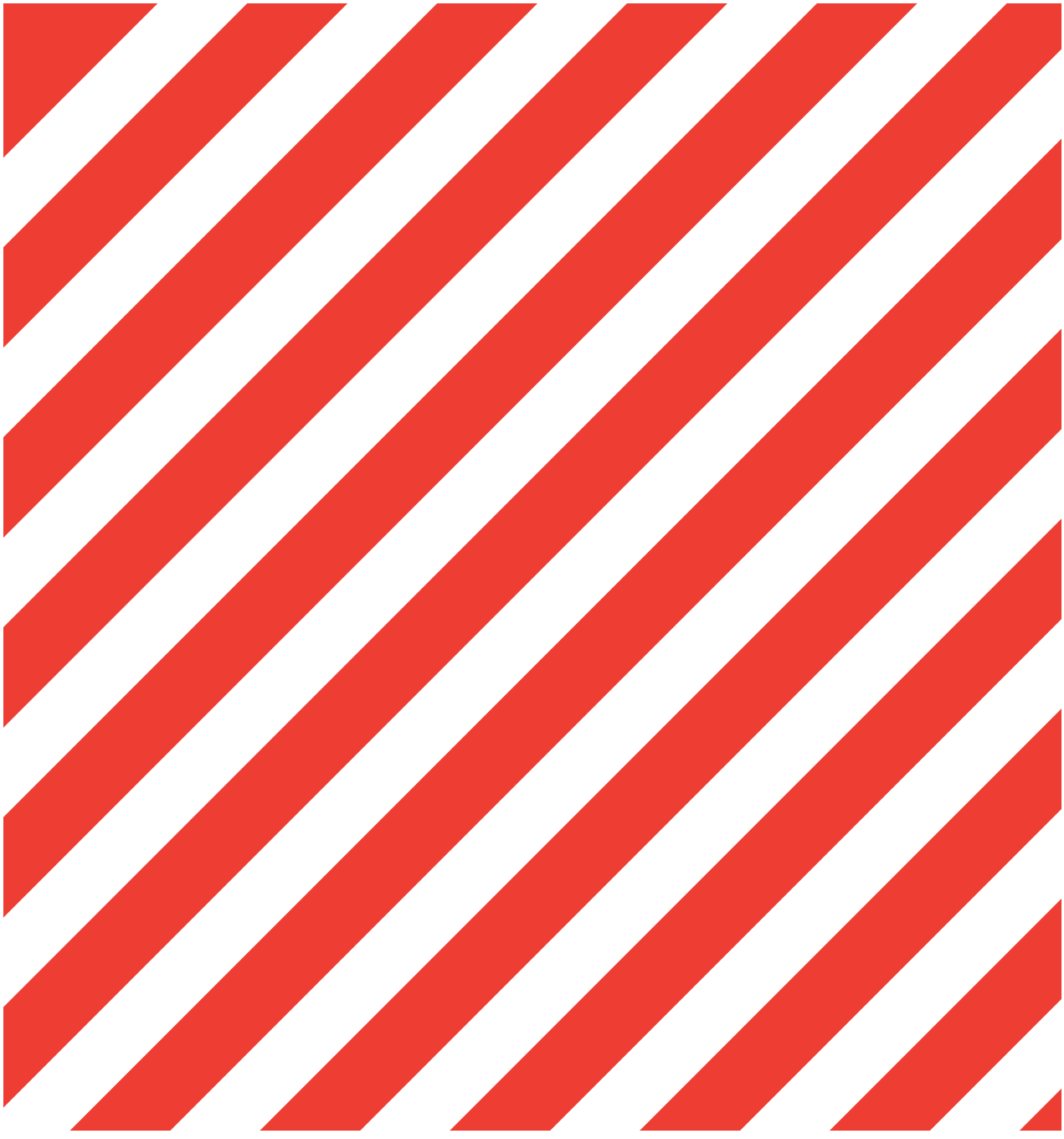
The Passive Fire Protection Handbook



PROMATECT®-L500

Applications

- Ventilation and smoke extract ducts
- Mechanical & electrical service enclosures
- Service enclosures
- Cable protection

Typical Mechanical Properties

Flexural strength $F_{rupture}$	Average, dry	N/mm²	3.0
Tensile strength $T_{rupture}$	Average, dry	N/mm²	1.2
Compressive strength (average, dry perpendicular to board face)		N/mm²	5.5

General Description

PROMATECT®-L500 is a non-combustible low density calcium silicate board, used for the construction of fire resistant ducts. It is a Class 0 product as defined in the Building Regulations.

PROMATECT®-L500 is off-white in colour and has a smooth sanded surface on one face with a lightly honeycombed texture on the reverse face.

PROMATECT®-L500 is resistant to the effects of moisture and will not physically deteriorate when used in damp or humid conditions. Performance characteristics are not degraded by age or moisture. Untreated surfaces will absorb water which can cause some loss of strength, but full strength is regained after drying. It will not encourage mould growth and is resistant to attack by insect or vermin.

PROMATECT®-L500 is chemically inert and is resistant to dilute acids and alkalis. Boards should be protected where high chemical concentrations are likely to occur.

A health and safety data sheet is available from the Promat Technical Services Department and, as with any other materials, should be read before working with the board. The board is not classified as a dangerous substance and so no special provisions are required regarding the carriage and disposal of the product to landfill. They can be placed in an on-site skip with other general building waste which should be disposed of by a registered contractor.

Table 1. General Technical Data

Designation		Calcium silicate
Material class		Non-combustible
Surface spread of flame		Class 1
Building Regulations classification		Class 0
Nominal dry density (average) Kg/m³		500
Alkalinity (approximately) pH		9
Thermal conductivity (approximately) at 20°C W/mK		0.09
Coefficient of expansion (25-105°C) m/mK		7.0×10^{-6}
Nominal moisture content (air-dried) %		3-5
Moisture movement (ambient to saturated) %		A 0.15
Thickness tolerance of standard boards mm		±0.5
Length x Width tolerance of standard boards mm		±3.0
Surface condition	**Front face:**	Smooth, sanded
	Back face:	Honeycomb pattern

Table 2. Board Format Data

Thickness (mm)	Length x Width (mm)	Approx.Weight (kg/m²)	
		Dry	With approx. 5% moisture
20	2500 x 1200	10.0	10.5
25	2500 x 1200	12.5	13.1
30	2500 x 1200	15.0	15.8
35	2500 x 1200	17.5	18.4
40	2500 x 1200	20.0	21.0
50	2500 x 1200	25.0	26.3
52	2500 x 1200	26.0	27.4
60	2500 x 1200	30.0	31.5

NOTE: *All physical property values are averages based on standard production. The figures can change dependent on the test methods used. If a particular value is of prime importance for a specification, please contact Promat Technical Services Department.*

CUTTING

Promat boards can be worked with conventional woodworking equipment although the use of hand saws with hardened teeth is recommended.

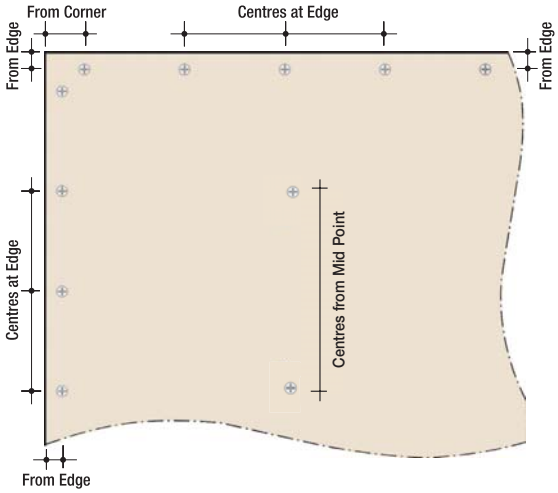
Promat boards greater than 6mm in thickness may be more easily cut using a power circular saw in conjunction with tungsten carbide tipped blades, or a jigsaw. For rough cutting, 6mm sheets can be deeply scribed and broken over a straight edge.

DURASTEEL® can be cut with a jigsaw around services etc. For the cutting of straight edges, a guillotine is recommended for large areas.

Promat recommend that all cutting should be carried out in well ventilated spaces, using dust extractors. Operators should wear protective face masks.

Cutting with a Jigsaw.

Cutting with a circular saw.



FASTENING & FIXING

1. Nailing

The most economical method of fastening is to use pneumatic nailing and stapling equipment.

Nails can be driven directly through boards, without pre-drilling (excluding DURASTEEL®), provided they are at least 12mm from the edge of the board, and the back face of the board is fully supported.

In areas of high humidity, galvanised nails should be used. Panel pins, oval or lost head nails should not be used. Nails should be located 40mm from corners.

Fixing guide as below, used with drawing above:

From Edge	From Corner	Centres at Edge	Centres from Mid Point
Min. 12mm	Min. 40mm	Min. 150mm	Max. 300mm

VICUCLAD® Vermiculite Board

Nails should be used in conjunction with VICUBOND® WR. When edge fixing to another board or VICUCLAD® nogging, the length of the nails should be twice the board thickness. When fixing to the face of another board or batten, nails should be half the board thickness from edge of the board.

2. Screw Fixing
Pilot holes should be pre-drilled not less than 12mm from the edge of the boards and countersunk if required. Use self-drilling or self-tapping screws when securing boards to steel. For all other situations, drywall screws e.g. Hilo are generally suitable.

Boards of thicknesses greater than 15mm can be edge screwed. Self-drilling or self-tapping screws are suitable. If edge screwing the board, minimum screw penetration should be 30mm. If screws do not have a deep thread, pilot holes should be drilled and care should be taken not to over tighten. Screws should be minimum 40mm from corners.

Screws at corners should be positioned at a distance equal to the board thickness from the corner, or a minimum of 40mm, whichever is the greater. Boards can be edge screwed or screwed face to face. Care should be taken not to overtighten screws. For best results using screws, variable speed electric screw drivers with a torque control have proven the most successful.

3. Adhesive Fixing
Multi-purpose glue or bonding compound can be used for non fire rated applications. VICUCLAD® boards may be fixed using a specially developed, non-combustible adhesive, VICUBOND® WR, in conjunction with nails.

BUTT JOINTING

Boards can be simply butt jointed with sheets having square, bevelled or chamfered edges. If required, a filler may be used to finish joints before decoration. Adhesives are not required.

VICUCLAD® Vermiculite Board

Joints between boards and noggings should be filled with VICUBOND® WR. This can also be used to fire stop the junction to adjacent components. Adhesive is not required when using the mechanical fix method. The adhesive has no flexibility when set and should therefore not be used where movement is expected.

INSTALLATION OPTIONS

a) Promat boards can be fastened with self-tapping screws and drivers with torque control.

b) Promat boards are easily fixed with pneumatically operated stapling equipment.

c) Boards can be trimmed and shaped using hand-held handsaws.

d) For on-site cutting use carbide tipped blades fitted to circular saws.

FINISHING OF BOARD SYSTEMS

Promat materials provide a surface ready to receive most forms of decoration. Where finishes such as wallpaper are to be used, application can be made easier by first sealing the board with a proprietary sealer or paint.

PLASTERING

All calcium silicate boards have a high suction and therefore it is generally difficult to apply gypsum plaster. If plastering is essential please consult the Promat Technical Services Department.

It is recommended that a small test area is plastered initially to ensure that the boards have been adequately sealed. It is advisable that self-adhesive or hessian scrim is applied over joints and internal angles. Paper scrim is not recommended.

NOTE: *The bonding agent and plaster manufacturers' recommendations should be followed at all times.*

VICUCLAD® Vermiculite Board

Adhesion of plaster to VICUCLAD® is excellent. Either one 5mm coat of board finish or a two-coat application of bonding coat and then finish coat. Although not required for bonding purposes, PVA coatings can be used on the board to retard the setting time of plasters.

The plaster manufacturers' recommendations should be followed at all times.

TILING

SUPALUX® & MASTERBOARD®

Boards at least 9mm thick should be used and sealed on all faces with either diluted tile adhesive or a PVA sealant. Screw boards at maximum 200mm centres to supports at maximum 405mm centres in both directions before applying tiles with standard tile adhesive.

VICUCLAD® Vermiculite Board

Tiles can be applied directly to VICUCLAD® using VICUBOND® WR adhesive.

NOTE: *For tiling all other Promat products, please contact Promat Technical Services Department.*

PAINTING

All coatings should be supplied by a reputable manufacturer and their recommendations regarding surface preparation, sealing and finish coat should be followed.

Promat boards have an attractive, smooth finish but if required they can be painted with emulsion or oil based paints. With water based paints, a diluted first coat should be used. For oil based paints a suitable alkali resisting primer should be used. Painted vapour barriers may be formed by the application of chlorinated rubber, epoxy resin or polyurethane paint.

VICUCLAD® Vermiculite Board

If a decorative finish is required, the surface of the VICUCLAD® should be sealed with an oil based alkali resistant primer prior to the application of oil based paints. It is recommended that emulsion or textured paints are used undiluted.

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