



SL Soffit Liner solutions

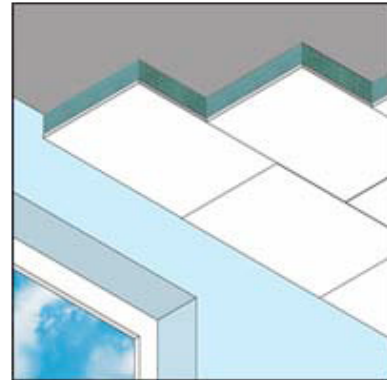
4051.01 Introduction

LAMATHERM Soffit Liner is a bespoke composite which comprises a laminate of LAMATHERM insulation bonded to a range of high specification lining boards.

The systems provide a choice of both fixing method and jointing method options. This data sheet discusses direct mechanical fixing to concrete soffits and fixing via timber battens.

Soffit Liner systems are available in modular sizes to suit the project requirement.

The overall board thickness is determined by the 'U' value requirement of the construction & the combination of materials selected.



4051.02 Using this data sheet

Lamatherm SL Soffit liner systems are a composite of insulation material and facing material. This data sheet explains the application and performance of a SL system when fixed directly to the concrete soffit. Other datasheets are to be used in conjunction with this one that provide the technical information required with regard to the facing material.

These include:

- 4101** Rockwool Rockpanel Rockclad GT
- 4103** Minerit Heavy Duty
- 4104** Minerit Multi Purpose
- 4105** Viroc Board

4051.03 Product options

Mineral wool slab is available in a variety of densities and thickness' to suit the project requirements. It offers thermal and acoustic insulation along with a tested fire safe performance.

Conrock is a high quality resin bonded Rockwool slab, with a predominantly vertical fibre structure. This offers structural performance as well as thermal, acoustic and fire performance.

Lamatherm are the exclusive agents for the Conrock range.

Nexus lamella boards offers an insulation core of exceptional structural performance.

In Lamatherm's unique production process the mineral wool is subjected to super-compression which eliminates all gaps within and between lamellae, thereby removing any weak points. The result is a structural, fire safe insulation core and a cost-effective alternative to plastic foams. Other insulation types are also available on request.



4051.04 Properties

Table 1: Thermal Conductivity

Nexus Lamella 100kg/m ³ Board	0.040 W/mK
Nexus Lamella 80kg/m ³ Board	0.039 W/mK
Conrock 100kg/m ³ Board	0.040 W/mK
Plain Mineral Wool Slab 104kg/m ³	0.033 W/mK
Facing board *	0.410 W/mK

Please note that the adhesive used to bond the facing board to the core insulation is stable at all normal temperature and humidity changes.

Table 2: Weight and Thermal Resistance

Insulation thickness	R value	Weight per board	Weight per sq.m
30mm	0.75 m ² K/W	2.16 kg	3.0 kg
54mm	1.35 m ² K/W	3.89 kg	5.4 kg
84mm	2.10m ² K/W	6.05 kg	8.4 kg
104mm	2.60m ² K/W	7.49 kg	10.4 kg

Table 3: Thermal Transmittance

Overall thickness	U' value
uninsulated	2.80 W/m ² K
36mm	0.45 W/m ² K
60mm	0.35 W/m ² K
90mm	0.25 W/m ² K
110mm	0.22 W/m ² K

All values based on Nexus 100kg/m³. Please contact the technical sales team for confirmation of the actual material performance for other insulation types.

Notes:

Above values are based on Soffit Liner being fixed to 250mm thick concrete slab, 1200kg/m³, 3% moisture content, exposed.
Values are through board only with no allowance for joints or fixings.

* Approximate value for all board types

Condensation control

When calculating vapour diffusion through a structure, the vapour resistance is negligible and considered to be the same as that for air - thus helping to avoid condensation.

Water resistance

Nexus Lamella Boards repel liquid water due to the presence of water repellent additives. Moisture condensing from the air within the core material is less than 0.02% by volume at 95% relative humidity.

Effect of water

Non-hygroscopic. The Lamatherm manufacturing process ensure that no capillary gaps can occur between adjacent strips.

Chemical

Resistant to most acids and weak alkaline solutions.

Biological

Completely vermin and rot proof and does not encourage the growth of fungi, mould or bacteria. It is suitable for use (with suitable facings) in hygienic areas.

Environment

No CFCs or HCFCs are used in the manufacture of the base materials.



4051.05 Storage & handling

Lamatherm Soffit Liner systems comprising various facing boards are robust, lightweight and easy to handle. However, due care should always be taken to ensure that the products retain their integrity and are not damaged.

According to the type of facing board specified, the boards are supplied with a removable film to protect the surface.

The materials are supplied fully palletised and polythene wrapped for short term protection on site.

For long term protection they must be stored in dry conditions. If storage indoors is not possible, the pallets must be protected under a stout waterproof covering.

Any product which becomes wet must be allowed to dry prior to installation.

4051.06 Installation basics

Soffit Liner can be mechanically fixed direct to the concrete where the surface is sufficiently even.

The inherent resilience of the mineral fibre backing means that the product can usually accommodate the expected unevenness associated with cast slabs.

However, where the surface is particularly uneven, the system is fixed via prefixed treated timber battens.

For non-dense concrete substrates, or if it contains a particularly hard aggregate mix, it is imperative that the fixings manufacturer is contacted for fixing suitability, advice and approval.

For the fixing of any tile / modular system, it is advisable to start with a focal reference board in the centre of the area to be covered and then commence the installation of the outer boards around this.

The use of 'string lines' parallel to both edges of the reference board ensures that the necessary alignment can be made to maintain the squareness of the installation. In so doing, adjustment can be made for each successive board as they are fixed radiating outwards towards the periphery.

When setting out, do not use 'spacers' between boards – as the installation will not be square.

Overall squareness is maintained by adjustment within an alignment gap.



4051.07 Principles of Installation – direct to concrete

When the concrete soffit allows for direct fix, 6No. approved fixings are required per board.

The fixings must be set in 50mm from the board edges and are located at the four corners of the board and at the centre of the long edges i.e. at nominal 500mm centres across the 600mm width and nominal 550mm centres along the 1200mm length.

In order to maximize the thermal performance of the system it is preferable to seal the joints with a compatible sealant. A 6mm deep bead of sealant is required to seal the joint between adjacent boards. The depth of the seal is controlled by the insertion of a foam backer into the gap. For internal applications, sealant can be applied directly to the board edge. For external applications and/or areas to be hose washed, the sealant must be applied to board edges which have been pre-treated with primer.

Soffit Liner may also be jointed with rigid pvc profiles to form an aesthetically pleasing shadow line. The profiles are simply inserted as installation proceeds.

Figure 1. General arrangement of fixing direct to concrete

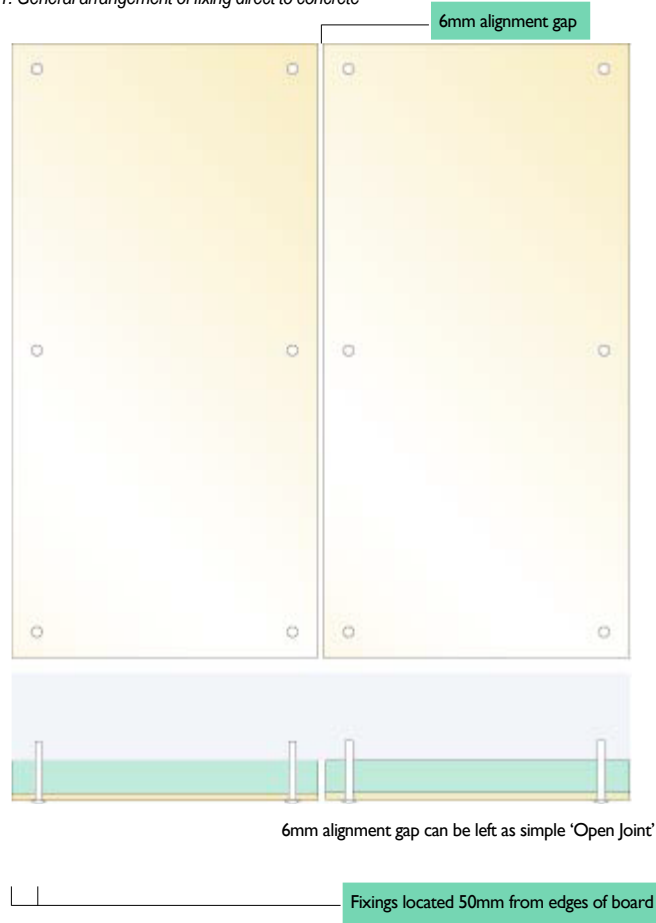


Figure 2. Sealed Joint method

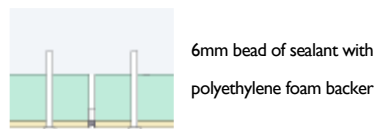


Figure 3. Shadow line Joint method



The insulation can be rebated on all edges (2x15mm) to receive rigid T shaped shadow line profiles (as an extra cost option).



4051.08 Principles of Installation – via timber battens

SL soffit liner can be fixed via treated timber *Figure 4. General arrangement of fixing via timber battens*

battens which are pre-secured to the substrate using suitable fixings

The treated timber battens should be a minimum of 75mm x 50mm. The 75mm ensures sufficient bearing and the 50mm is to allow for sufficient embedment of the fixing.

It is imperative that the battens are fixed and aligned to provide a level surface. Check that the battens are positioned in accordance with the general arrangement illustrated in Figure 4, including the allowance for the 6mm alignment gap between boards. The SL board is then to be fixed to the timber battens using 6no. approved fixing. The fixings are to be installed 112mm from the edge of the board into the centre of the batten.

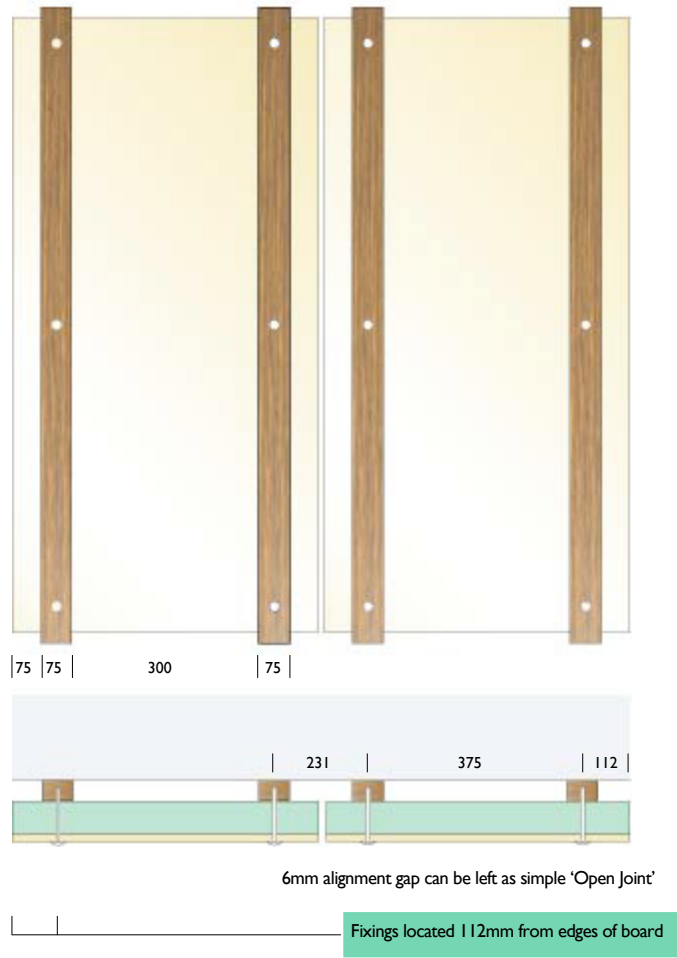


Figure 6. Joint methods



Jointed and sealed in conventional method if required.

When fixing via timber battens to system can be jointed and sealed in the same way as direct if required.



4051.09 Joint options – abutment

Open Joint

The Soffit Liner boards are simply located leaving a nominal 6mm alignment gap between boards (and/or the structure) to ensure squareness.

Sealed Joint

The boards are fixed to the soffit maintaining a 6mm alignment gap. Apply 6mm deep bead of sealant using a foam backer. (Figure 7)

Shadow Line Joint

The boards are available with the insulation pre-rebated on all edges to receive rigid pvc profiles for closing the gap.

Alternatively, simply cut the insulation on site with a serrated blade to the required depth to receive the profile. (Figure 8 & 9.)

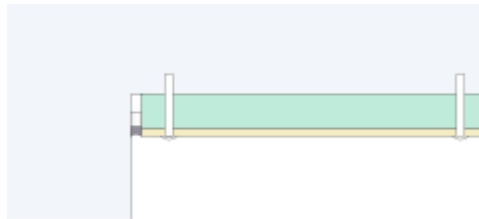
Different profiles are available according to the type of joint and the size of gap.

L Joint profile is friction fitted between core and board & aligned to maintain the required gap.

A one-part adhesive is available to bond the pvc profile to the board and/or structure if required.

For wide alignment gaps, use off-cut mineral wool to insulate above the *L joint* and maintain thermal integrity. (Figure 10.)

Figure 7. Sealed joint abutment



Lamatherm sealants (SAR/1090 and SAR/LM) have been tested and are suitable for internal applications.
For external use or areas to be hose washed, the edges of the board must be primed prior to sealing with primer PAR/2650, which is brush applied.

Figure 8. Shadow line joint abutment

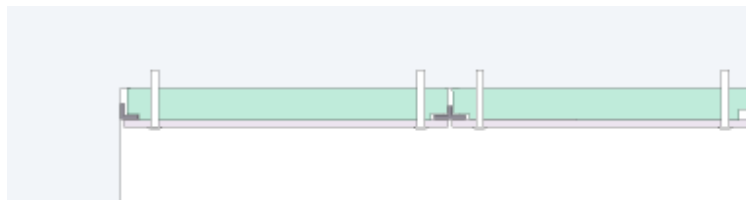


Figure 9. Shadow line internal corner joint

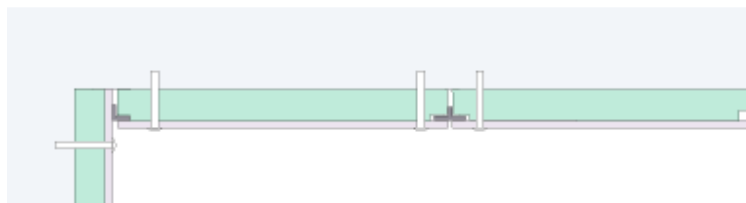
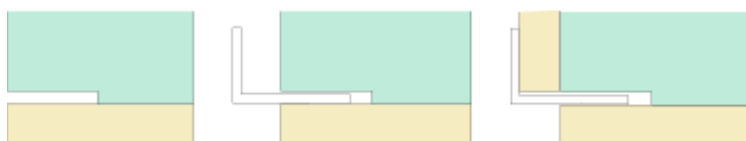


Figure 10. Shadow line L Joint



The insulation can be supplied pre-rebated (extra cost option) or cut on site to receive rigid L' shaped shadow line profiles.



4051.10 Joint options – external corners

Open Joint

The Soffit Liner boards are cut on site and fixed to maintain a nominal 6mm alignment gap.

Sealed Joint

The boards are similarly cut and fixed with a 6mm deep bead of sealant applied into the gap using a foam backer. (Figure 12.)

Shadow Line Joint

The use of L Joint profiles provides a simple neat finish.

Cut the insulation on site with a serrated blade to the required depth to receive the profile.

(Figure 13.) The L Joint profile is friction fitted between core and board & positioned to maintain the required gap.

Figure 11.

Open external corner joint



For all external corner joints, a section of insulation is carefully cut away on site to suit the overall panel thickness. Use a sharp serrated blade.

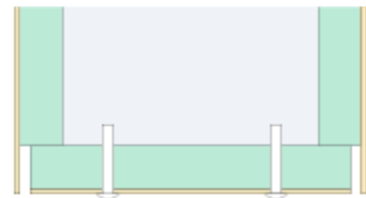


Figure 12.

Sealed external corner joint



Figure 13.

Shadow line external corner joint



Figure 14. Cutting joints

Cut the bond between facing board and insulation to the correct depth to suit the L joint profile.



Figure 15. Section of L Joint profile





Corner Profile Joint

Use of the *External Corner Joint* profile combines an aesthetically pleasing finish together with increased edge protection to the facing board.

Cut the insulation on site with a serrated blade to the required depth to receive the profile.

(Figure 17.) The *External Corner Joint* profile is friction fitted between core and board & positioned to maintain the required gap. The pre-cut downstand board is fixed to the structure to complete the detail.

Figure 16. *External corner profile joint*

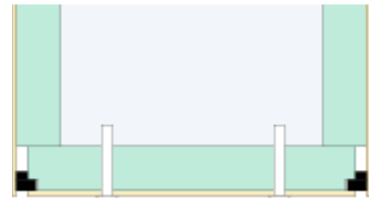


Figure 17.

Cut the bond between facing board and insulation to the correct depth to receive profile.

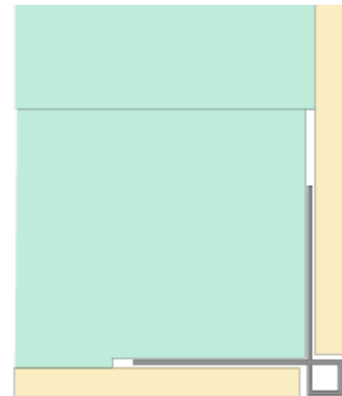


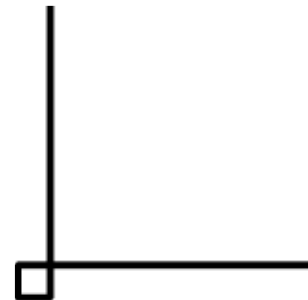
Figure 18.

Section of *External Corner Joint* profile.

When using standard 6mm thick facing board:

Profile X 016P provides a flush edge.

Profile X 018P provides a slightly raised feature edge.



4051.11 Workability

Soffit Liner boards may be easily cut on site by tradesmen using normal woodworking tools.

The product will not bow or buckle due to moisture as it is dimensionally stable.

However, the flatness of the installation is controlled by the accuracy of surface alignment when tightening the fixings.

The use of the frame fixings offer adjustment for this purpose.

Once installed, Soffit Liner requires no maintenance.

Soffit Liner must not be used for supporting light fittings or similar services. Such installations must be fixed through to the substrate.



4051.12 Recommended fixings

Siderise offer two standard types of fixing which have been tested for compatibility with Soffit Liner and provide the requisite load bearing capacity and pull-out resistance.
(See tables 4.&5.)

Screw fixing is typically carried out with a controllable, slow-revving gun, as this will avoid over-tightening of the fixings and will prevent any undue compression of the lamella backing.

Suitable frame fixings can be tightened by hand and allow maximum control over the degree of compression of the board and achieve a neat flush finish. The fixings should not be countersunk.

Frame Fixing Screw

A continuously threaded metal screw which requires no additional plug. Combines high load bearing capacity with small drill hole diameter. The long screw length makes positioning easy.

Recommended minimum embedment depth in concrete is 20mm.

Table 4. Frame Fixing Screw

Soffit Liner Board Thickness	Ordering code	Screw length	Fixing Diam.	Pre-Drill Diam.	Caps Type
56mm	HFFS/92	92mm	7.5mm	6mm	HFFS/A
66mm	HFFS/92	92mm			
76mm	HFFS/112	112mm			
86mm	HFFS/112	112mm			
96mm	HFFS/132	132mm			
106mm	HFFS/132	132mm			

Notes: If due to an uneven concrete surface, the embedment depth is less than

Metal Frame Fixing

All-metal sleeved frame fixing with electroplated countersunk screw and crossdrive recess Z3.

Fixing can be tightened by screwdriver or electric screwdriver.

Recommended minimum embedment depth in concrete is 30mm.

Table 5. Metal Frame Fixing

Soffit Liner Board Thickness	Ordering code	Screw length	Fixing Diam.	Pre-Drill Diam.	Caps Type
56mm	HF10M/92	92mm	10mm	10mm	SL/CAP
66mm	HF10M/112	112mm			
76mm	HF10M/112	112mm			
86mm	HF10M/132	132mm			
96mm	HF10M/132	132mm			
106mm	HF10M/132	132mm			

Notes: If due to an uneven concrete surface, the embedment depth is less than 30mm, the suitability of the fixing should be proved by site tests.

Fixing Caps

Dedicated caps are available to suit the fixing.

HFFS/A caps are simply pushed fitted and provide a discrete shallow finish. SL/CAPs are supplied as a washer & cap set and are of a deeper profile.

Table 6. Fixing Caps

To suit fixing type	Colour	Ordering Code	Cap Ø
Frame Fixing Screw	White	HFFS/A	15mm
	Coloured ¹	Refer to sales	15mm
Metal Frame Fixing	White	SL/CAP/white	19mm
	Coloured ¹	SL/CAP/xxx	19mm

Notes:

¹ Subject to quantity, caps are available to suit the standard / RAL colour of the facing board.

Please contact sales for information.



4051.13 Recommended sealants

Table 7. Sealants for forming joints between Soffit Liner

Suitability for exposure	SAR/1090 silicone	SAR/LM silicone	PAR/2650 primer required
Internal	yes	yes	no
Hose-wash areas	yes	yes	yes
Semi-exposed / External	yes	yes	yes
Application method	6mm bead	6mm bead	Brush
Supplied in	310ml or 380ml cartridges	310ml or 380ml cartridges	500ml tins
Box quantity	25No.	25No.	n.a.
Colours	Grey, black, buff, teak, red ¹	White, grey, black,brown, buff, red ¹	n.a.
Backer rod required	Type BP10D ²	Type BP10D ²	n.a.

Notes:

¹ Other colours, including RAL colour matching, available subject to quantity.

² Backer BP 10D comprises polyethylene foam, 1m x 10mm Ø, which is compressed within the 6mm joint to maintain a consistent 6mm deep bead of

Table 8. Fixings requirements

Product	Fixings per board	Fixings per sq.m.
Soffit Liner 1200 x 600mm	6No.	8.3No.

Note: Fixings are available in boxes of 100No.

4051.14 Estimating quantities

Table 9. Sealant requirements

Product		
SAR/1090 or SAR/LM	310ml	380ml
Linear metres available from a cartridge	8.6m	10.5m
Number of cartridges required:	= 36 x length (m) / 310	= 36 x length (m) / 380

Table 10. Profile range

Profile Type	Ordering Code	Length	Thickness	Width	Dim 'x'
Shadow Line T Joint	T 32	3m	1.5mm	32mm	-
	L 1010	2m	1mm	-	10mm
Shadow Line L Joint	L 1717	3m	1mm	-	17mm
	L 2525	2m or 4m	1.5mm	-	25mm
	L 3232	2m or 4m	1.5mm	-	32mm
External Corner	X 016P	2.45m or 3m	2mm	50mm	6.5mm
	X 018P	2.45m or 3m	2mm	50mm	8.5mm

Note: All of the above profiles are available in either white or black.



4051.15 Material Safety Data – Nexus, Conrock and Plain mineral wool insulation

1. COMPANY

Siderise Insulation Ltd,
Address as below.

2. COMPOSITION

Inert vitreous silicate mineral wool bonded with a thermosetting phenolic resin which has been urea extended. Up to 0.25% of mineral oil.

3. HAZARD IDENTIFICATION

May cause transient skin irritation. High dust levels may irritate the throat. The fibres from which NEXUS is made are classified as irritant (Xi:R38) under the CHIP Regs 1998.

4. FIRST AID MEASURES

Eyes: If irritation occurs wash eyes with water. If symptoms persist seek medical advice.

Skin: If irritation occurs wash under running water prior to washing with soap and water.

5. FIRE FIGHTING MEASURES

The products are generally non-combustible and do not pose a fire hazard. However, some packaging materials may burn.

a) Suitable extinguishing media: water, foam, carbon dioxide or dry powder.

b) Unsuitable extinguishing media: none.

c) Products of combustion: carbon dioxide, carbon dioxide and some trace gases.

d) Observe normal fire fighting procedures.

6. ACCIDENTAL RELEASE MEASURES

No special measures required.

7. HANDLING AND STORAGE

Avoid unnecessary handling of product. Carry board materials on edge as opposed to flat to maintain shape. Store in original packaging in a dry place.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Maximum Exposure Limit (MEL) 5mg/m³, 8 hour weighted average. Ensure good general ventilation. Local exhaust ventilation may be required if the method of use produced dust levels in excess of the MEL. Respiratory protection: If the MEL cannot be met, disposable face masks complying with BS/EN149 FFP1 or FFP2 should be used and are suitable for most applications.

Hand protection: Not normally required but industrial gloves can be worn.

Eye protection: When working with product above head height, eye protection is advised.

Skin protection: No special requirement other than loose clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: vitreous mineral wool supplied in the form of lamella boards.

Melting point: above 1000°C.

Solubility: insoluble in water and generally chemically inert.

10. STABILITY AND REACTIVITY

No special physical conditions need to be avoided.

No restrictions regarding incompatible materials.

Above 230°C, some binder degradation may occur for a short while, leading to the evolution of small quantities of carbon dioxide, carbon monoxide and other trace gases.

11. TOXICOLOGICAL EFFECTS

The base fibres are not classified as a carcinogen by the E.C. Directive 97/69/EC.

12. ECOLOGICAL INFORMATION

Stable product with no known adverse environmental effects.

13. DISPOSAL CONSIDERATIONS

No special precautions.

14. TRANSPORT INFORMATION

No special precautions.

15. REGULATORY INFORMATION

No special labelling required.

Mineral wool products are not classified under CHIP as hazardous, but are regulated as a man-made mineral fibre (MMMMF) under the Control of Substances Hazardous to Health Regulations (COSHH) with a MEL of 5mg/m³ (gravimetric).

16. OTHER INFORMATION

Health and Safety Executive Guidance Note EH46 - Man-made Mineral Fibres.

E.C. Directive 97/69/EC,

This material safety data does not constitute an assessment of workplace risk. No warranty expressed or implied is hereby made. This information reflects typical values and is not a product specification.