

INSTALLATION MANUAL  
THERMALUX

**Firepower**

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## 1. Introduction

Insert stove installation is made quick, straightforward and safe by using Thermalux.

Thermalux is a calcium silicate board which is ideal for building in insert stoves, creating false chimney breasts and a multitude of other uses where heat is involved. Thermalux has very high insulating properties and is completely fireproof and is also extremely easy to work with. Normally 50mm thick sheets will be specified for most applications. These sheets are 1,200mm x 1,200mm.

Thermalux does not require you to build any frame or studwork. Simply place the stove on its non combustible hearth, assemble the sides and front, cut out the holes for the vents and in front of the stove window and then just push in the vent grilles and stove frame. It is now ready for plastering.

Installing double sided feature fires is equally straightforward and even installing an insert stove into an existing fireplace is made simple. The Thermalux can be used to take care of all the closing in and where an existing fireplace is on an outside wall, Thermalux is also utilised to insulate the chamber so that heat is not lost to the outside.

Where the flue pipe runs up from the stove it just goes through a tight fitting hole in the top sheet, ensuring that the heat cannot spread upwards to the floor above.

Thermalux can be worked like wood. It can be cut with a panel or circular saw and screwed back to masonry without needing to pre-drill it. It can also be fixed to itself using drywall screws by pre-drilling the sheet to be fixed. Cartridges of Thermalux glue needs to be used to fix the sheets together.

## 2. Safety

Thermalux is made from calcium silicate and whilst not a harmful substance the dust should not be breathed in as it can cause irritation. Ideally work in a well ventilated space. Consider cutting or preparing the sheets outside.

Wear a good respirator and gloves. If using power tools such as a circular saw make sure that you use dust extraction/bags. Use a vacuum to clean up dust and mess.

## 3. Preparing Thermalux for use

The primer needs to be diluted up to five parts water to one part primer (5:1) before use. Coverage is approximately 175ml/m<sup>2</sup> once diluted, or 35 ml/m<sup>2</sup> before dilution. 250 ml will do five 1200mm x 1200mm sheets. It is advisable to use a decorator's roller to apply the Thermalux Suction Control Primer, but it can also be applied with a brush if necessary.

Thermalux is very absorbent and so any surface that needs to be glued or plastered needs to be primed with diluted Thermalux Suction Control Primer prior to installation. This will avoid the plaster crazing due to the water being absorbed too quickly by the Thermalux.

When the sheets have been cut down to size with ordinary wood working tools, they need to be laid on a flat level surface. Any dust must be removed and two coats of diluted Thermalux Suction Control Primer applied to the face due to be plastered and on any edge to be glued. It will take 2 or more coats to fully prime the sheets.

## 4. General methods

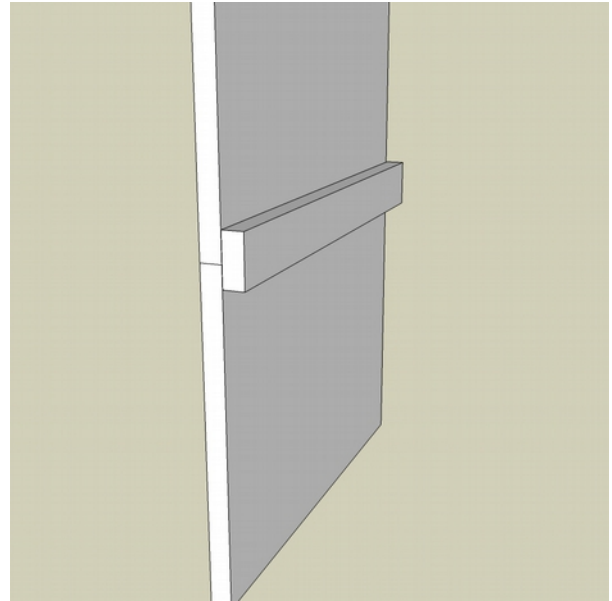
### 4.i Glue & screw – then remove the screws once the glue is dry

Each surface being joined together to form the structure should have glue applied and then screwed to hold. Once the glue has dried remove the screws. Removing the screws is especially important on any sheets attaching to combustible materials like the rear wall or the ceiling. The reason for this is that because the screws are metal they are a potential place where heat could be transferred through to the material behind.

Be sure to put the screws in from the edge of boards to avoid cracking the edge of the sheets.

### 4.ii Joining two sheets

When joining two sheets end to end apply a bead of glue to each surface being joined. Use a lap joint with the joiner strip overlapping at least 51mm over each sheet being joined as pictured. Glue and screw to hold it in place and remove the screws once the glue has dried.



## 5. Making a new chamber or chimney breast

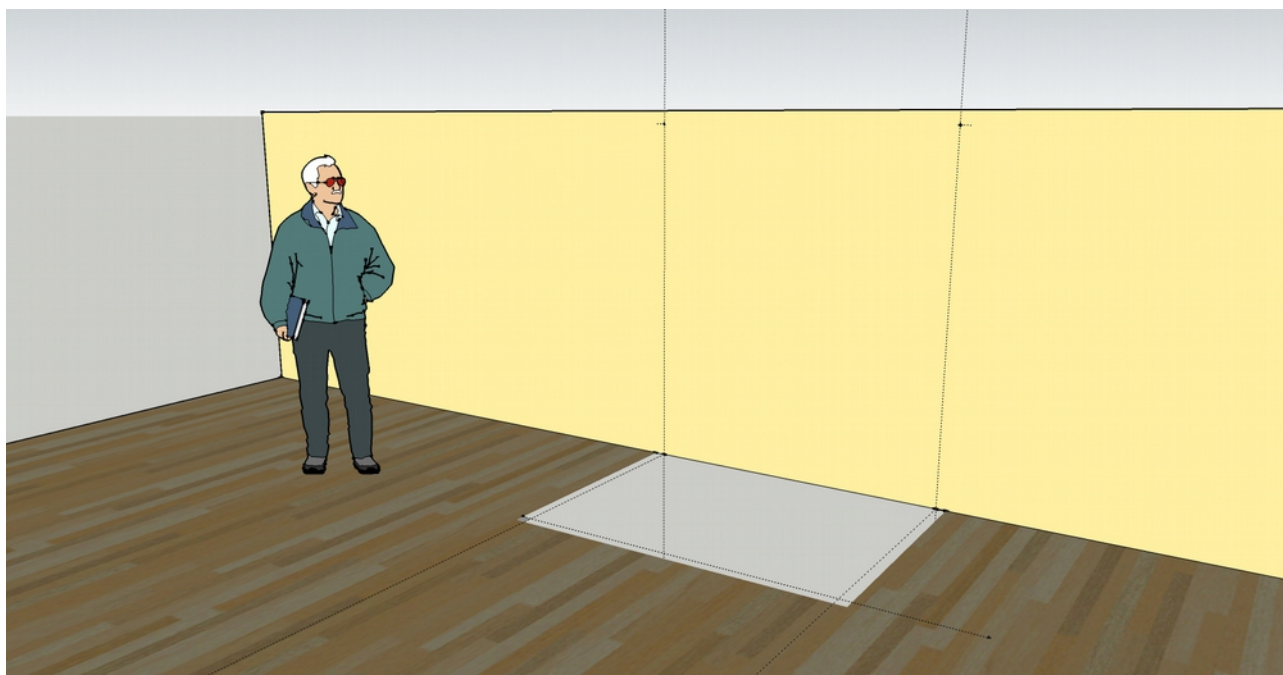
Ventilation should be made according to the specific stove instructions with air intakes at the bottom and air out at the top. This reduces the air temperature inside the enclosure which is key to protecting a combustible wall from overheating but also allows warmth to spread into the room.

Be sure to keep a minimum 50mm gap between the stove body and the chamber walls and a 5mm minimum gap to the frame of the stove to allow for expansion of the metal.

### 5.i Hearth

There should be either a constructional hearth or 12mm hearth depending on the type and model of stove. Check manufacturer's instructions. Even if the stove is raised then a hearth will still need to be provided inside the enclosure and coming out from the front face of the enclosure in line with Document J. Refer to the Firepower Hearth Recommendations guide for more detail.

(as you can see Stan Lee has come to oversee the job!)



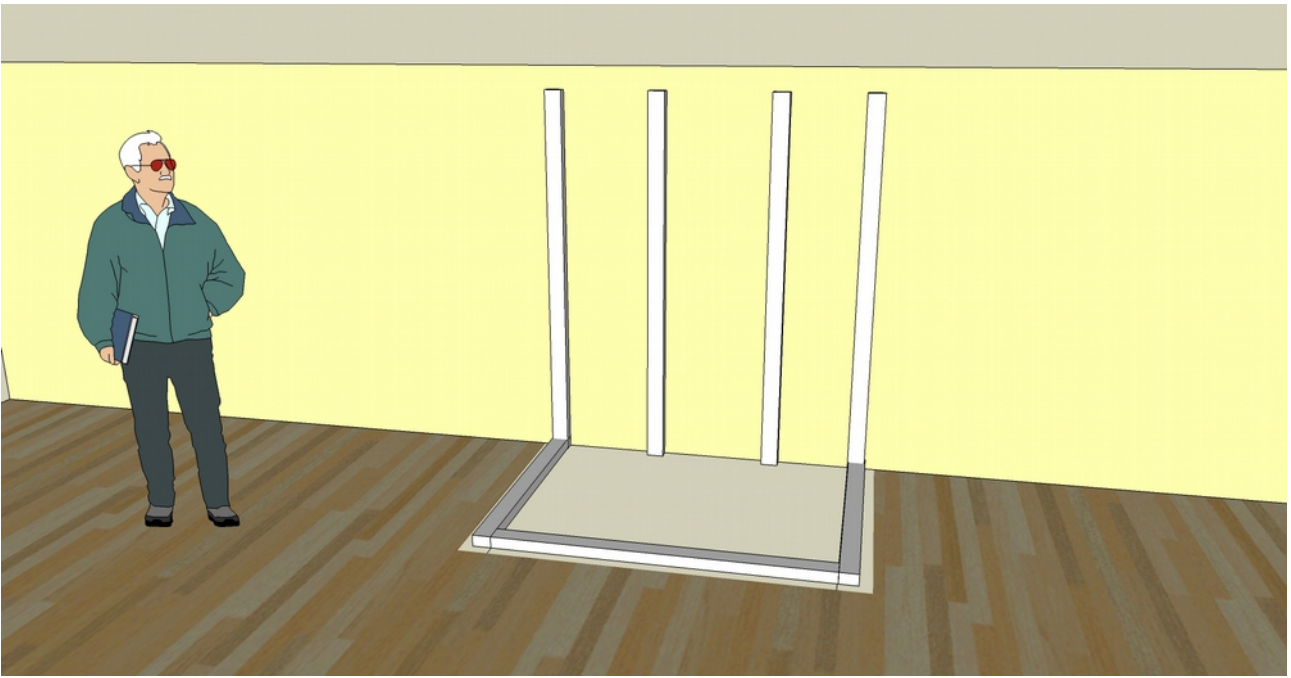
### 5.ii Base & Rear support battens

Strips of Thermalux, approx 50mm x 50mm are used throughout as a support framework to glue and screw the main boards to. You do not have to create your chamber in this exact order – these instructions are as a helpful guide only.

All battens should be glued and screwed into place, and then the screws removed once the glue has dried.

Lay your base battens out, 50mm in from the finished faces of your enclosure and glue and screw them into place. You may wish to place your front batten only after you have positioned the stove into place.

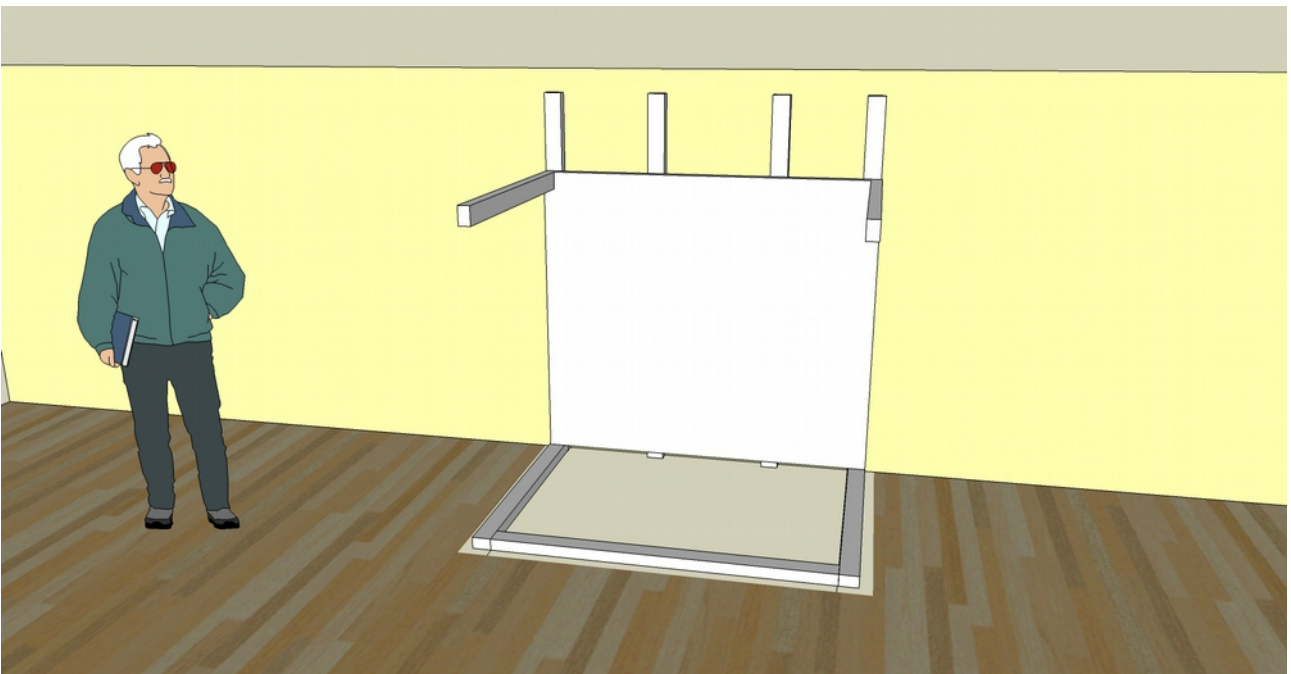
If the rear wall is combustible then run rear spacer and support battens up the wall behind and screw and glue into place. Remove the screws once the glue is dry. Finish 50mm shy of the ceiling as you will be putting a covering sheet of Thermalux on the ceiling to protect it from heat. If the rear wall is non-combustible then just install the two vertical side battens to form the rear edges of your chamber.



### 5.iii Rear protection sheet

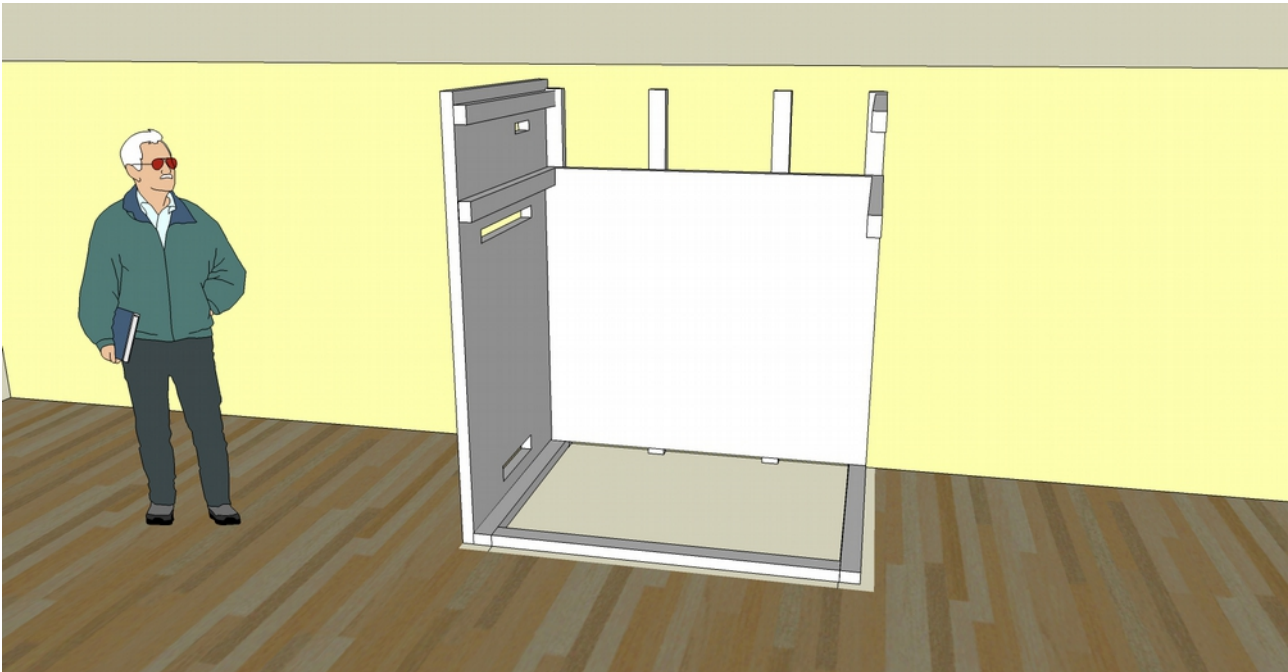
Fix the rear protection sheet into position, glueing and screwing to the battens. Choose screws which will not penetrate right through the two layers of 50mm Thermalux to the wall behind and try to avoid screws or other metal fixings directly behind the stove.

Note that the rear sheet has a 50mm air gap at the bottom to allow air to flow up and behind it. It is important that this gap is maintained because the airflow protects the rear wall from overheating.



#### 5.iv Side walls

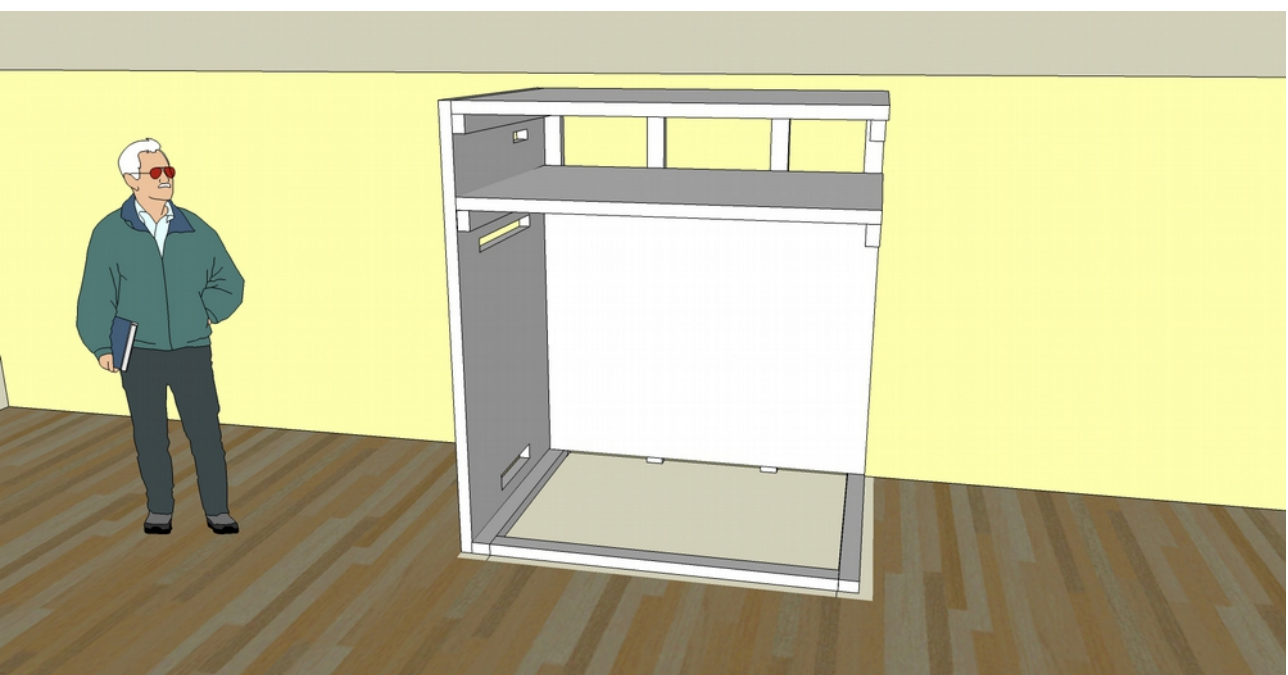
Place your side walls into position and screw and glue into place. Holes for the vents can be cut once the chamber is assembled, you do not have to cut them into the sheet first.



#### 5.v Ceiling protection and Mid horizontal sheet to form the top chamber

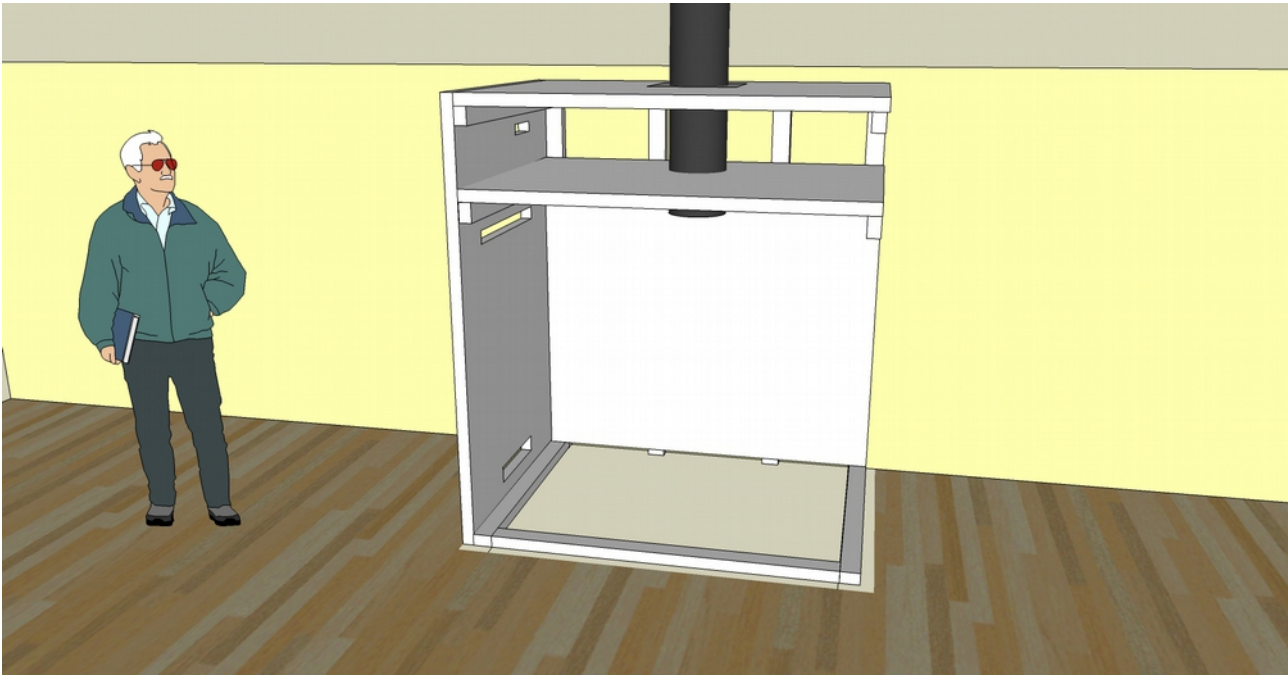
Place the ceiling protection sheet into position and glue. You may wish to push the ceiling sheet into position and then fix the side support battens into place. You may wish to cut the hole for the firestop spacer beforehand – remember that if using a ventilated firestop that the airflow through it's vents should not be blocked – ie the hole needs to be cut big enough for the firestop.

Fix the mid horizontal sheet into position. Note that this is pushed up against the rear spacer battens and so has a 50mm gap from the rear wall so that air can flow up behind the rear sheet and into the top chamber.



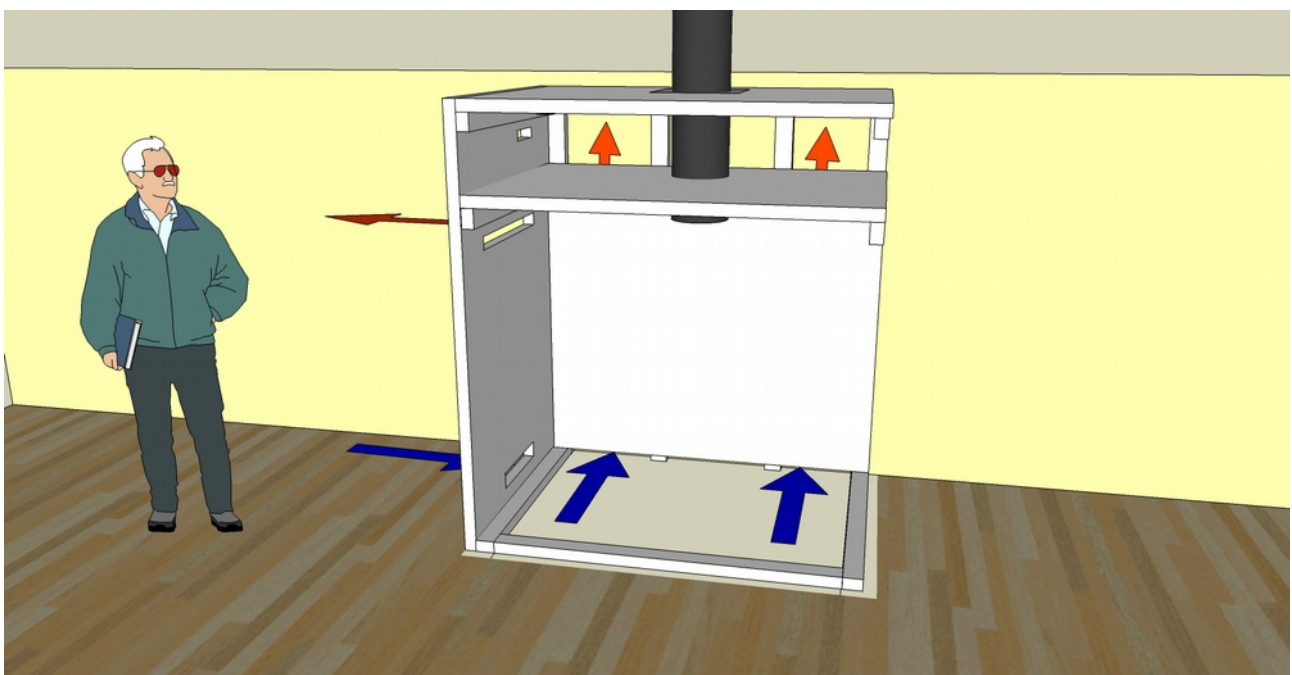
### 5.vi Twin wall chimney

The twin wall chimney runs through both horizontal sheets with a firestop spacer in the ceiling protection sheet. Cut a hole 5mm larger than the OD of the twin-wall in the mid-horizontal sheet to allow for expansion. Fill the gap with a suitable high temperature silicone sealant once the twin-wall is finally fixed in place.



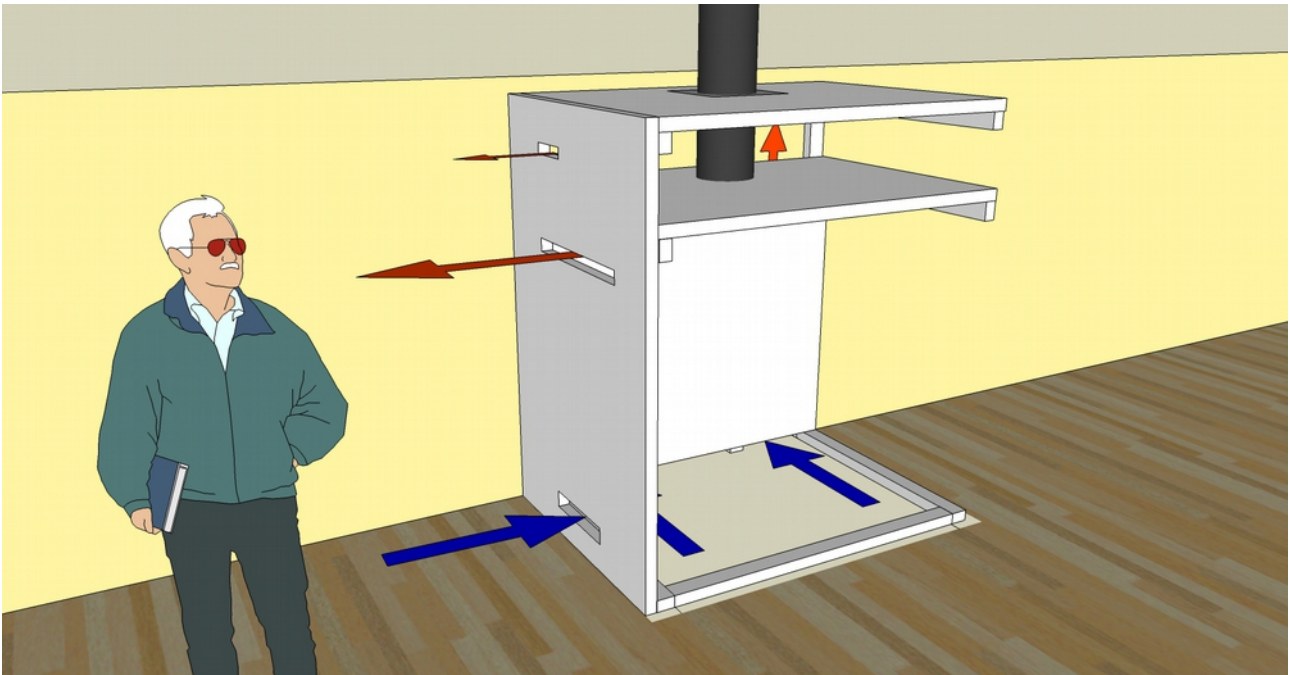
### 5.vii Ventilation air flow

You have now made two chambers, the lower one will rise to a higher temperature than the top. There are small vents in the top chamber to allow the rear ventilation air back out into the room and to supply air to the ventilated firestop for the twin wall. These vents must be larger than the free area of the vents in the firestop spacer. Warm air from the top chamber can also flow out into the room from the smaller vents on each side of the top chamber. You can see how the air will flow in the picture. Cool air enters at the bottom of the rear sheet and comes out into the top chamber, helping to keep the combustible wall behind cool.





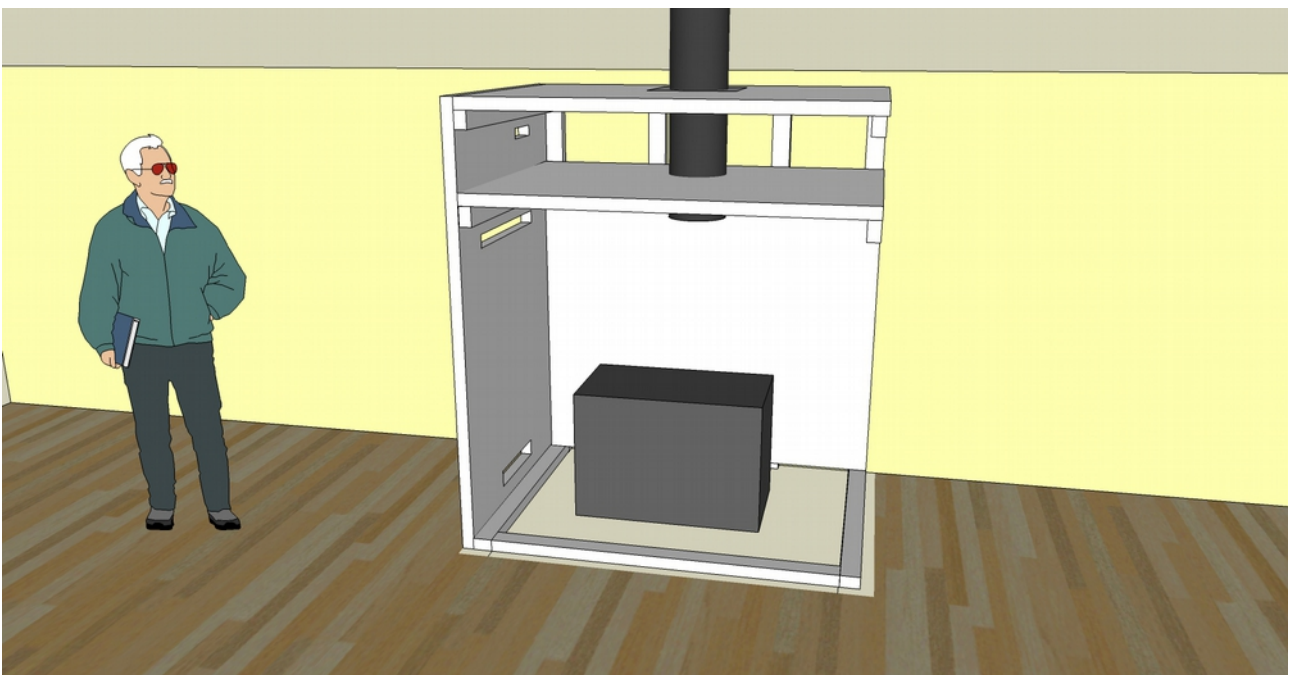
Air flows into the lower chamber, is warmed by the stove, and then allowed back out into the room. Follow manufacturer's recommendations for vent sizing – vents should generally be on both sides of the chamber and the upper vent should be larger than the lower vent to allow for the expansion of the air once it has warmed.



### 5.viii Stove

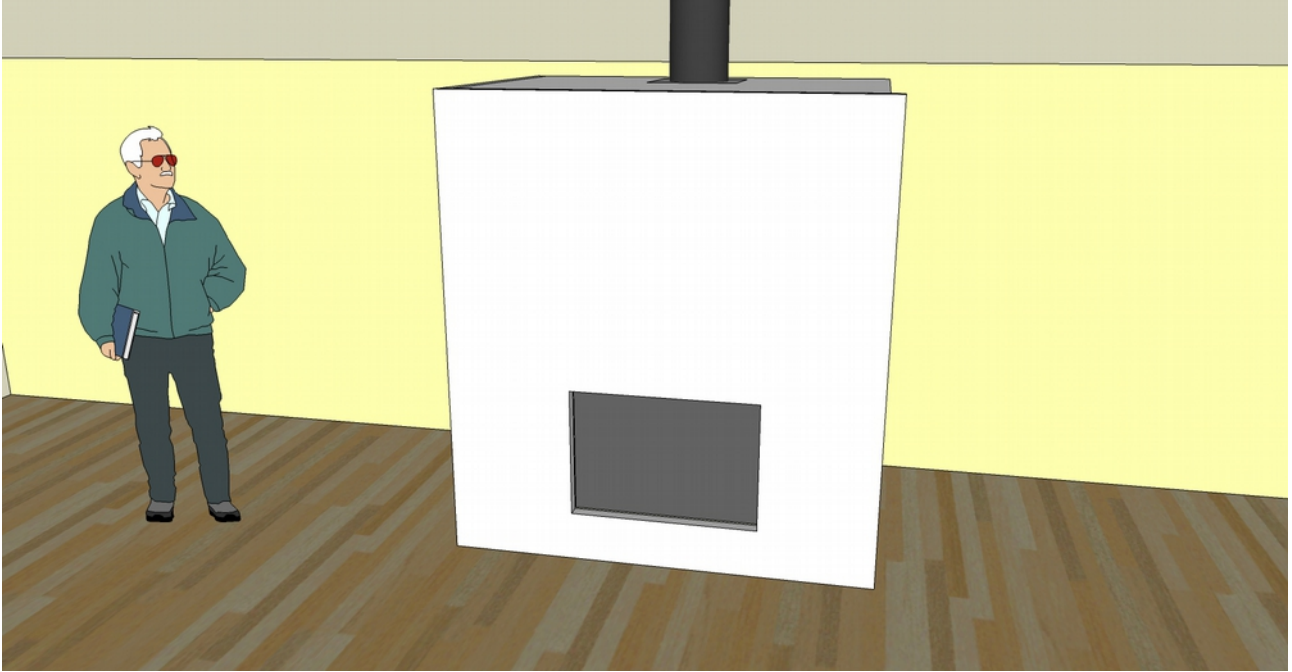
You may have placed the stove into position already. You can now put the stove into position and connect up to the chimney. You are likely to require a dogleg so that the twin does not end up far out into the room above.

When positioning the stove offer up the frame and make sure that it will line up well with the finished face of your chamber. The stove should have a minimum of 50mm air gap to the sides and back to allow for air flow. Follow manufacturer's recommendations.



## 5.ix Front sheet

By joining sheets you can now complete the chamber by adding the front and side walls. The hole for the frame and opening of the stove should include a gap of at least 5mm all round to allow for the expansion of the metal of the stove.



## 5.x Service access

Bear in mind that you may need to allow for service access. This might take the form of an insulated side access door. This is especially important if there are sensors or controls inside the chamber, or if the stove is a boiler model. Some models of stove require access to the chamber for servicing and sweeping. Refer to manufacturer's instructions.

## 6. Heat Shielding with 25mm Thermalux®

The guidance here only applies to stoves which have a tested distance to combustibles to the sides and rear of 700mm or less. For the rest you must follow manufacturer's recommendations and the distance to combustibles given in the lab test results.

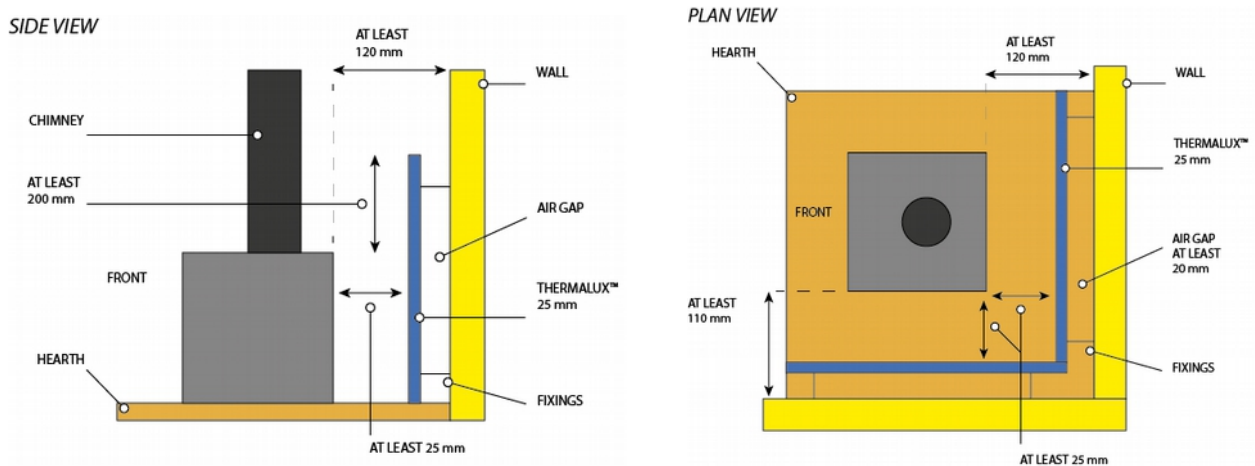
This method uses 25mm Thermalux® insulation boards with an air gap behind. The air gap can be open or sealed.

### 6.i Requirements

- The Thermalux® 25mm board is used as the insulation board and thin strips used to provide the fixings at the edges.
- Strips of Thermalux® provide a place for fixings as well as creating a 25mm air gap. If alternative fixings and spacers are used then the minimum air gap is 20mm.
- This air gap may be open or closed.
- The board has to extend at least as wide as the hearth, and at least 200mm above the stove/appliance.
- Fixings should be at the edges and non combustible. If using glue then make sure it can withstand 150°C and will not give out harmful fumes when hot.

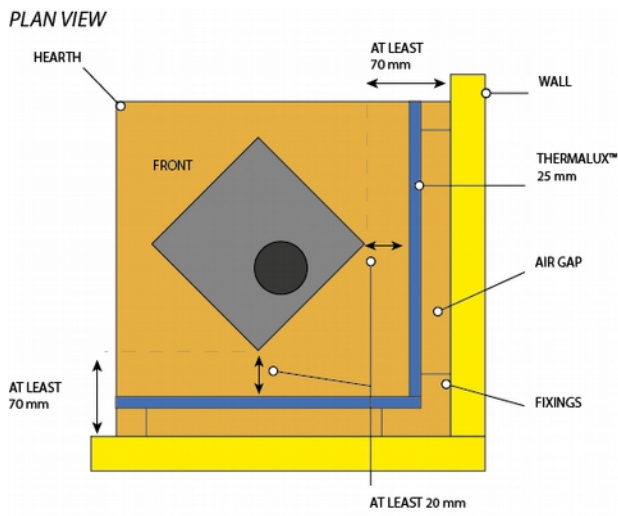
### 6.ii Heat shielding when the stove is parallel, or no more than 30° to the wall

Maintain a gap between the stove and the wall of at least 120mm to the back and 110mm to the sides.



### 6.iii Heat shielding when the stove is in a corner facing out

Maintain a gap between the back corners of the stove and the wall of at least 70mm, with a gap of at least 20mm between the stove and the Thermalux<sup>®</sup> board. Thermalux<sup>®</sup> 25mm used as both the board and spacer strips achieves the 70mm perfectly: 20mm(gap) + 25mm(board) + 25mm(strip/fixing) = 70mm.



## 7. Finishing

The skim finish plaster can be done with a plaster suitable for highly absorbent surfaces such as Thistle DuraFinish or UniFinish.

Remember to cover and protect the stove and to remove the frame. Remember to leave a 5mm gap between any parts of the front of the stove and the front Thermalux sheet, and between the frame and the front sheet. You may need to tidy plaster that might have closed off this gap.

## 8. In the trade?

We work via our network of registered Energy Centres, Showrooms, Engineers and Installers. We run specific training events for our more specialist products.

You gain access to a broad range of products which give an extra edge, either because they fill a niche in the market, allowing you to offer your clients something unique but also by making installation simpler, smoother, more elegant.

[info@firepower.co.uk](mailto:info@firepower.co.uk), +44(0) 844 332 0155

*Firepower, Flightway, Dunkeswell, Devon, EX14 4RD, UK, +44(0) 844 332 0155*

**Firepower**

## 9. THERMALUX Safety data sheet

Revision: 28-03-2017

Replaces: 13-10-2015

Version: 02.00/EU

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product use: Porous board insulation

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses: Insulation materials for Building, Marine and Off-shore applications. 1.3. Details of the supplier of the safety data sheet

Supplier: Firepower, Units 1-6 Flightway, Dunkeswell, Honiton EX14 4RD

[sales@firepower.co.uk](mailto:sales@firepower.co.uk)

0844 332 0155

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification (Regulation (EC) No 1272/2008):

The product shall not be classified as hazardous according to EU classification and labelling rules. Most serious harmful effects: Handling of the product causes risk of dust formation , which may irritate nose and throat. May cause slight irritation to the skin and eyes .

2.2. Label elements

The product shall not be classified as hazardous according to EU classification and labelling rules.

2.3. Other hazards

No assessment required, as the product contains inorganic matter only.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Registration number CAS/ EC No. Substance CLP-classification (Regulation (EC) No 1272/2008) w/w%

Note: Contains no substances subject to reporting requirements. Please see section 16 for the full text of H-phrases.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation: Seek fresh air, wash out mouth with water and blow nose thoroughly. Seek medical advice in case of persistent discomfort.

Ingestion: Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of persistent discomfort.

Skin: Remove contaminated clothing. Wash the skin thoroughly with water and continue washing for a long time. Seek medical advice in case of persistent discomfort .

Eyes Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.

Other information: When obtaining medical advice , show the safety data sheet or label.

4.2. Most important symptoms and effects, both acute and delayed

Handling of the product causes risk of dust formation , which may irritate nose and throat. May cause slight irritation to the skin and eyes .

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptoms. No special immediate treatment required.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

The product is not directly flammable. Choose extinguishing agents based on the surrounding fire. Use water or water mist to cool non-ignited stock. Unsuitable extinguishing media Do not use water stream, as it may spread the fire.

#### 5.2. Special hazards arising from the substance or mixture

The product is not directly flammable. Avoid inhalation of vapour and fumes – seek fresh air.

#### 5.3. Advice for firefighters

Move containers from danger area if it can be done without risk . Avoid inhalation of vapour and flue gases – seek fresh air. Wear Self-Contained Breathing Apparatus (SCBA) with chemical resistant gloves.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear safety goggles if there is a risk of dust contact with eyes .

For emergency responders: In addition to the above: Normal protective clothing equivalent to EN 469 is recommended.

#### 6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water.

#### 6.3. Methods and material for containment and cleaning up

Sweep up/collect spills for possible reuse or transfer to suitable waste containers .

#### 6.4. Reference to other sections

See section 8 for type of protective equipment. See section 13 for instructions on disposal.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Work processes where generation of dust may occur must be performed under effective process ventilation (e.g. local exhaust ventilation). Running water and eye wash equipment must be available. Wash hands before breaks , before using restroom facilities , and at the end of work.

#### 7.2. Conditions for safe storage, including any incompatibilities

The product should be stored safely, out of reach of children and away from food, animal feeding stuffs, medicines, etc.

#### 7.3. Specific end use(s) None.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Legal basis: Commission Directive 2000/39/EC (Occupational Exposure Limits).

Commission Directive 2009/161/EU. Contains no substances subject to reporting requirements .

#### 8.2. Exposure controls

Appropriate engineering controls: Wear the personal protective equipment specified below . Personal protective equipment, eye/face protection: Wear safety goggles if there is a risk of dust contact with eyes . Eye protection must conform to EN 166. Personal protective equipment.

Skin protection: Plastic or rubber gloves recommended. Personal protective equipment.

Respiratory protection: Wear respiratory protective equipment with P 2 filter when cutting the product. Respiratory protection must conform to one of the following standards : EN 136/140/145. Environmental exposure controls: Ensure compliance with local regulations for emissions .

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

State: Porous board

Colour: No data

Odour: No data

Odour threshold: No data

pH (solution for use): No data

pH (concentrate): No data

Melting point/freezing point: 1345 °C

Initial boiling point and boiling  
range:

No data

Flash point: No data

Evaporation rate: No data

Flammability (solid, gas): No data

Upper/lower flammability limits: No data

Upper/lower explosive limits: No data

Vapour pressure: No data

Vapour density: No data

Relative density: 2,30 - 2,90

Solubility: Solubility in water: Insoluble

Partition coefficient

n-octanol/water:

No data

Auto-ignition temperature: No data

Decomposition temperature: No data

Viscosity: No data

Explosive properties: No data

Oxidising properties: No data

9.2. Other information none.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Not reactive.

### 10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions .

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

None known.

### 10.5. Incompatible materials

None known.

### 10.6. Hazardous decomposition products

None known.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity - oral:

The product does not have to be classified . Test data are not available.

Acute toxicity - dermal: The product does not have to be classified . Test data are not available.



Acute toxicity - inhalation: The product does not have to be classified . Test data are not available.

Skin corrosion/irritation: May cause slight irritation. The product does not have to be classified . Test data are not available.

Serious eye damage/eye irritation: Dust may cause eye irritation. The product does not have to be classified . Test data are not available.

Respiratory sensitisation or skin sensitisation: The product does not have to be classified . Test data are not available.

Germ cell mutagenicity: The product does not have to be classified . Test data are not available.

Carcinogenic properties: The product does not have to be classified . Test data are not available.

Reproductive toxicity: The product does not have to be classified . Test data are not available.

Single STOT exposure: Inhalation of dust may cause irritation to the upper airways . The product does not have to be classified. Test data are not available.

Repeated STOT exposure: The product does not have to be classified . Test data are not available.

Aspiration hazard: The product does not have to be classified . Test data are not available.

Other toxicological effects: None known.

## SECTION 12: Ecological information

### 12.1. Toxicity

The product does not have to be classified . Test data are not available.

### 12.2. Persistence and degradability

Test data are not available.

### 12.3. Bioaccumulative potential

Test data are not available.

### 12.4. Mobility in soil

Test data are not available.

### 12.5. Results of PBT and vPvB assessment

No assessment required, as the product contains inorganic matter only.

### 12.6. Other adverse effects

None known.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Avoid discharge to drain or surface water. Contact the local authorities. EWC code: Depends on line of business and use , for instance 17 06 04 insulation materials other than those mentioned in 17 06 01 and 17 06 03

## SECTION 14: Transport information

The product is not covered by the rules for transport of dangerous goods .

### 14.1. UN number

### 14.2. UN proper shipping name

### 14.3. Transport hazard class(es)

### 14.4. Packing group

### 14.5. Environmental hazards

### 14.6. Special precautions for user

### 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Special provisions: None.

### 15.2. Chemical safety assessment

Chemical safety assessment has not been performed .

## SECTION 16: Other information

Changes have been made in the following sections:

1,9,16

Abbreviation explanations: PBT: Persistent, Bioaccumulative and Toxic, vPvB: Very Persistent and Very Bioaccumulative, STOT: Specific Target Organ Toxicity

Classification method: Calculation based on the hazards of the known components . H-phrases: No H-phrases. Training: A thorough knowledge of this safety data sheet should be a prerequisite condition .

Other information: This safety data sheet has been prepared for and applies to this product only . It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with 1907/2006/EC (REACH) as subsequently changed.

## 10. THERMALUX Data Sheet

Maximum surface temperature	°C	1000
	°F	1832
Bulk density, dry	kg/m <sup>3</sup>	225
	lbs/cu.ft.	14
Cold crushing strength (DS/EN ISO 8895:2006)	Mpa	2.6
	lbs/sq.in.	377
Modulus of rupture (EN 993-6: 1995)	Mpa	1.3
	lbs/sq.in.	189
Linear reheat shrinkage (EN 1094-6:1999)		
12h @ 950°C (1742°F)	%	1.0
Total porosity (EN 1094-4:1995)	%	91
Creep in compression (EN 993-9:1997)		
50 h @ 800°C (1472°F), load 0.1 Mpa (14.5 lbs./sq.in)	%	3.3
Permeability to gases (EN 993-4:1995)	nPm	0.7
Specific heat	KJ/(kg×K)	0.84
	BTU/(lb×°F)	0.2
Coefficient of reversible thermal expansion (BS 1902: section 5.3:1990)	X10 <sup>-6</sup> K <sup>-1</sup>	5.5
@ 20 - 750°C (68 - 1382°F)	X10 <sup>-6</sup> °F <sup>-1</sup>	3.1
Pyrometric cone equivalent (ASTM C24-09 (13) Orton cones)	°C	1349
	°F	2460
Thermal conductivity (ASTM C-182)		
	mean temp. @ 200°C	W/(m×K)
	@ 400°C	0.08
	@ 600°C	0.10
	@ 800°C	0.12
	@ 392°F	0.14
	@ 752°F	0.55
	@ 1112°F	0.69
	@ 1472°F	0.83
		0.97
Chemical analysis, typical	%	
Silica	SiO <sub>2</sub>	47
Alumina	Al <sub>2</sub> O <sub>3</sub>	0.2
Ferric oxide	Fe <sub>2</sub> O <sub>3</sub>	0.1
Magnesium oxide	MgO	0.4
Calcium oxide	CaO	42
Sodium oxide	Na <sub>2</sub> O	0.1
Potassium oxide	K <sub>2</sub> O	0.1
Loss on ignition @1025°C (1877°F)	LOI	9
Non-combustibility tests (EN 13501-1:2007 + A1:2009)		Class A2-s1,d0
HS Tariff number (Harmonized Commodity Description and Coding System)		6806.90.00
Colour		Grey

Data are average results of tests conducted under standard procedures and are subject to variation. Data contained in this data sheet are supplied in good faith as a technical service and are subject to change without notice. Misprint and errors excepted.

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www.firepower.co.uk, +44(0) 844 332 0155, [info@firepower.co.uk](mailto:info@firepower.co.uk)

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