SILCA 250KM insulation boards

Application

To protect the fabric of a building against the risk fire when used to protect combustible and non-combustible walls against high temperatures and long term damage when forming an enclosure or wall covering to protect against the generated heat from a heating appliance.

Processing the boards

The boards can be processed using standard woodworking tools or machinery, e.g. handsaw, jigsaw, circular saw or wet saw. Although the boards are physiologically harmless due to the fine dust created when working with Silca 250KM we recommend using tools with dust collection, a suitable mask or in an environment with a dust extraction system. All Fixings should be countersunk or finish flush to the surface of the board.

Construction

When building a structure where more than one panel is required the joints should be staggered (as brickwork) where possible this will give added stability. It may also be necessary to affix back supports or braces across some joints using suitable sized strips of Silca 250KM board to give added strength and support. The strips of Silca board should overlap the sections that require bracing and be attached to the back of the board using the correct adhesive and secured in place by screwing through the front face into the strips using non-corrosive dry wall large thread screws.

Silcacon First coat/ Primer

- Diluted with clean water ratio 1-2, 1-3 applied using a brush, hand spray or roller.
- Used to treat the surface of Silca 250KM boards prior to applying lime plaster/smoothing lime plaster.
- Also applied to contact surfaces when bonding boards together.

Description	Product code
1 ltr	CON_ ST_00000001
5 ltr	CON_ ST_00000002

Silcadur-HTI Absorption solution

- This is used to seal the board facings within any formed chamber around a heating appliance, apply using a brush, hand spray or roller. NOTE: This is not suitable for using as a primer on exterior surfaces.
- Only use inside the heating chamber to treat the surface of Silca 250KM insulation boards to reduce dust and it also adds some strength to the surface of the board.

Description	Product code
1 ltr	IMP_ST_00000002
5 ltr	IMP_HTI_ST_ 00000001

Silcadur – HFS Adhesive

- Premixed, apply using a trowel, scraper or similar suitable method to be applied evenly on face that is being applied to wall.
- Before applying the adhesive the boards need to be moistened with water using a sponge or other suitable method. It is recommended that additional suitable non-corrosive wall fastenings are also used to secure the board to the wall.
- This adhesive is used for glueing Silca 250KM insulation boards onto any non-combustible or combustible flat smooth wall or to bond boards together when used to protect an adjacent wall/ceiling

Description	Product code
6.5 kg tub	KLE_HFS_ST_00000001
900g tubular bag	KLE_HFS_ST_00000002

Silcacon Adhesive/Glue

- Used to bond Silca 250KM insulation boards applied in the construction where protection of an adjacent wall is not required.
- Mix with clean water to form a smooth non-runny workable mortar and apply using a trowel, scraper or similar suitable method.
- A high-quality adhesive mortar which is ready for use after mixing with clean water to bond Silca 250KM insulation boards together.
- The surface of the board should be treated with primer before applying the adhesive/glue, the boards are then secured together using non-corrosive dry wall large thread screws.

Description	Product code
7.5 kg bag	CON_KLE_ST_00000001

Silcatex-SE Fibreglass Mesh

- Used with Silcacon lime plaster to reinforce the Silca 250KM insulation board.

Description	Product code
50mtr x 1mtr roll (mesh 4mm x 4mm)	GIT_SE_ST_00000001
10mtr x 1mtr mesh (4mm x 4mm)	GIT_SE_ST_00000002

Silcacon Lime Plaster

» Used to plaster over the surface of Silca 250KM insulation boards, you can apply one or two coats and used with Silcatex-SE Fibreglass mesh it will provide reinforcement.

» Silca 250KM boards should to be primed with First Coat Primer prior to application.

Description	Product code
30 kg bag	CON_KPU_ST_00000001

Silcacon Smoothing Lime Mortar

» Used to plaster over the surface of Silca 250KM insulation boards, you can apply one or two coats and used with Silcatex-SE Fibreglass mesh it will provide reinforcement.

» Silca 250KM boards should to be primed with First Coat Primer prior to application.

Description	Product code
30 kg bag	CON_KGL_ST_00000001

Silcawool 120 Paper Self-Adhesive Tape

» Applied onto the supporting frame on an inset appliance to allow for expansion between the appliance and the board.

Description	Product code
10,000mm x 50mm x 5mm roll	STR_120_ST_00000053

SILCA 250 KM insulation board installation instructions

The following method is used when constructing an appliance chamber and outer structure to form a chimney breast/enclosure for use with an inset heating appliance.

Non-Burnable Adjacent Walls Less Than 200mm Thick with a Density of Not Less Than 1200kg/m³

» The wall and ceiling will require a minimum protection of 100mm of Silca 250 KM insulation board.

» Appliance manufacturers instructions for protection will apply if they are greater than the minimum requirements.

» Example a 40mm board is firstly glued to a smooth finished wall with Silcadur-HFS adhesive, all vertical and horizontal seams are also joined using Silcadur-HFS adhesive; It is recommended additional suitable non-corrosive wall fastenings are also used to secure the board to the wall.

» The 60mm panel that will form the rear of the appliance chamber is sized and glued to the 40mm board using Siladur-HFS adhesive and secured in place using suitable non-corrosive dry wall large threaded screws giving a total board thickness of 100mm.

» The top of the rear board is used to locate and support the roof of the chamber, all seams/joints should be joined and panel fixed in place using Silcadur-HFS adhesive and non-corrosive dry wall large threaded screws. (see Fig. 1)

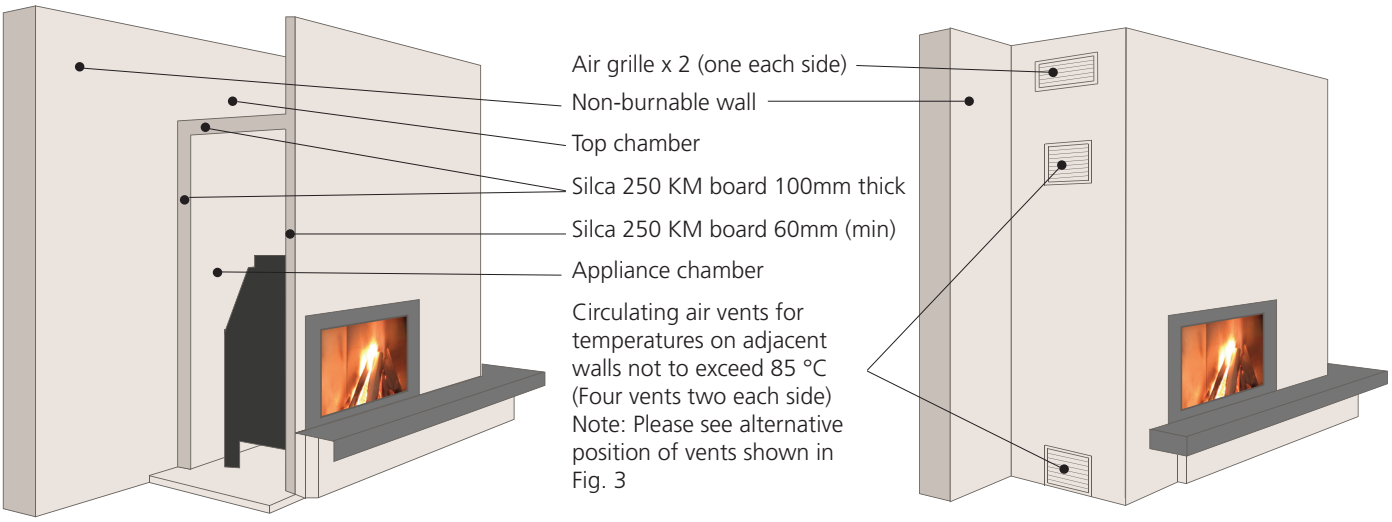

Fig 1. Non-burnable adjacent walls less than 200mm thick with a density of not less than 1200 kg/m³

Adjacent Walls either Non-Insulated or Insulated Built out of Burnable Building Materials

» Two Silca Boards will be required with a minimum total thickness of 100mm.

» Appliance manufactures instructions for protection will apply if they are greater than the minimum requirements.

» A 40mm board is glued to a smooth finished wall using Silcadur-HFS adhesive; all vertical and horizontal seams are also joined using Silcadur-HFS adhesive.
It is recommended that additional suitable non-corrosive wall fastenings are also used to secure the board to the wall.

» A minimum air gap of 50mm with active airflow is required between the two boards to form back ventilation.

» The airflow between the two boards is introduced at the lowest point and is expelled at the most upper point on both sides (see Fig 2). A minimum of 50mm x 50mm is required for each airway.

» The air gap is created by attaching vertically batten strips of Silca 250KM board x 60mm wide (min) to the 40mm board already fitted. The battens should finish short of the floor and finished ceiling by 50mm.

» The distance between the battens should be no more than 400mm apart, please ensure that the battens are placed to ensure that any vertical joint sits in the middle area of the vertical batten. Apply the battens starting from the outermost edges working inwardly. Fix in place using Silcadur-HFS Adhesive/Glue and suitable non-corrosive dry wall large thread screws.

» Apply the 60mm board (see method 1 & 2) across the battens fix in place using Silcadur-HFS Adhesive/Glue (apply the adhesive to the vertical and horizontal seams as well as the area in contact with the batten) and suitable non-corrosive dry wall large thread screws.

Method 1. The 60mm board forms the rear wall of the appliance chamber it will therefore be necessary to fit the 60mm panel in two sections, this will allow for the roof of the chamber to sit on top of the first panel, fix in place using Silcadur-HFS adhesive and non-corrosive dry wall large thread screws, or

Method 2. Cut and mount a suitable horizontal batten to support the roof of the chamber, fix in place using Silcadur-HFS adhesive and non-corrosive dry wall large thread screws.

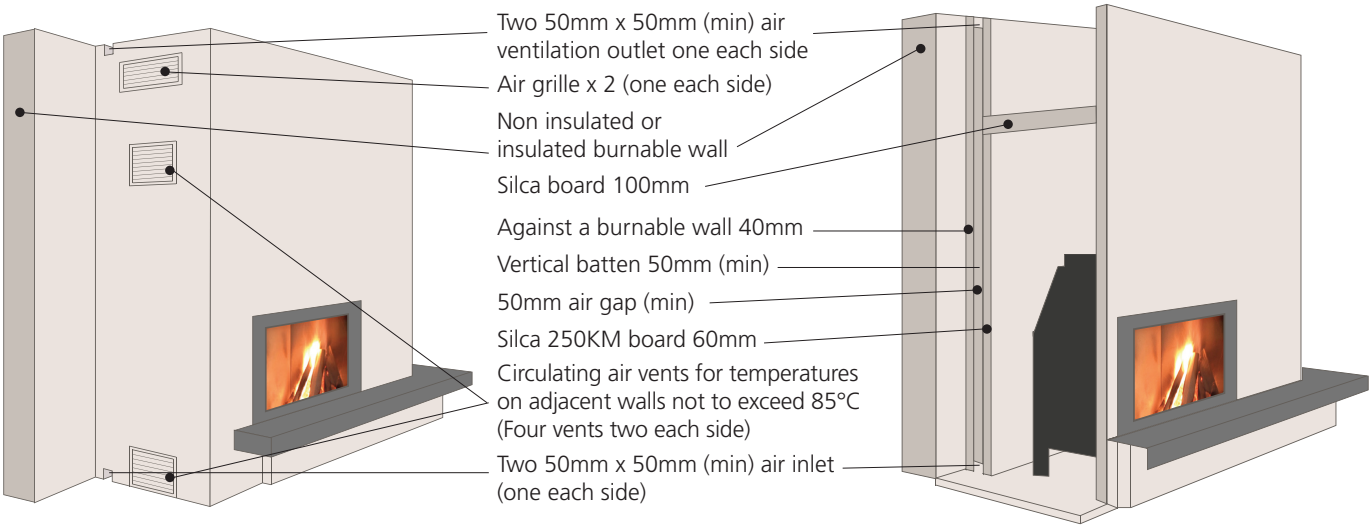

Fig 2. SILCA 250 KM insulation board built agains a non-insulated or insulated burnable wall

Chambers for solid fuel appliances

built out of Silca 250 KM insulation boards (see Fig. 3)

» Please see relevant instructions depending on type of wall protection required

» This should be a minimum of 1200mm above the hearth and at least 300mm above the appliance.

» Manufacturer's instructions should be followed for the minimum height of chamber above the appliance if greater than 300mm.

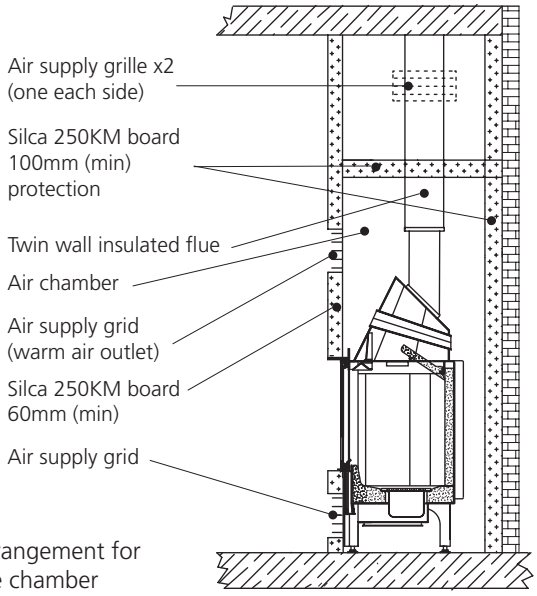

Fig 3. Example of appliance chamber, please see alternative arrangement for air circulation grilles now fitted to front wall of the appliance chamber

Top Chamber Built between the Appliance Chamber and the Ceiling

» The Top Chamber will require ventilation to disperse any build-up of heat and to provide adequate air for any ventilated fire stops that may be fitted.

» All Air Vents should be non-combustible, removable and be permanently open vented and a minimum of 400mm below ceiling to prevent decolouration and heat build-up on ceiling.

» When Solid Fire Stops or Ventilated Fire Stops are fitted on a twin wall chimney system, the minimum requirement will be Two Air vents with a total free area of 280cm^2.

» Fire Stops - In all cases please check with the manufacture of the fire stop for what amount of free air is required for the fire stop to function correctly, particularly when being used to cool the area within an enclosure.

» The total free area of the two air vents should be a minimum of the manufacturer's requirements.

Ventilation of the appliance chamber

» Adequate ventilation of the appliance chamber to disperse the heat build-up is required to prevent any adjacent wall temperatures exceeding 85 °C, please refer to manufacturer's instructions for air vent requirements.

» A way of achieving this would be to fit two air vents to the appliance chamber in the area above the appliance and a further two to be fitted in the area below the appliance (see Fig 1).

Air for Combustion

» Sufficient permanent air supply is required for the appliance to perform safely, efficiently and to enable the flue to work correctly for the removal of combustion gases to the outside atmosphere. Please follow Building Regulations and where appropriate manufacturer's instructions.

Clearances from appliance to appliance chamber inner face.

» A recommended air gap of 100mm is required from the rear of the appliance to the inner face of the rear chamber wall or to manufacturer's instructions.

» Manufacturer's instructions should be followed for clearances to side walls.

Top vertical flue exit and route

» For installations where the rear wall is classed as combustible or contains any combustible materials a vertical flue must be fitted.

Rear flue exit & route

» This is possible only when the rear wall is a solid brick construction or of non-combustible material.

» Please note that the connection to any twin wall flue should be made within the appliance chamber, where the twin wall flue passes through the ceiling of the appliance chamber we recommend a radial gap of between 3-5mm from the main body of the flue to allow for expansion.

» All local regulations, including those referring to National and European Standards need to be complied with when installing the appliance.

Free Standing Application (see Fig 4)

» Silca 250KM board can be used as wall protection for free standing stove applications, the board must be a minimum thickness of 50mm. When fitted direct to a combustible wall a minimum distance of 100mm clearance from the stove is required, manufacturer's instructions should be followed if they specify a greater distance than 100mm.

» The wall protection must be at least 1200mm high above the hearth level and at least 300mm above the height of the stove.

» Where a single wall flue is being used the distance to combustibles can be reduced to 1.5 times the diameter of the pipe but not less than 200mm.

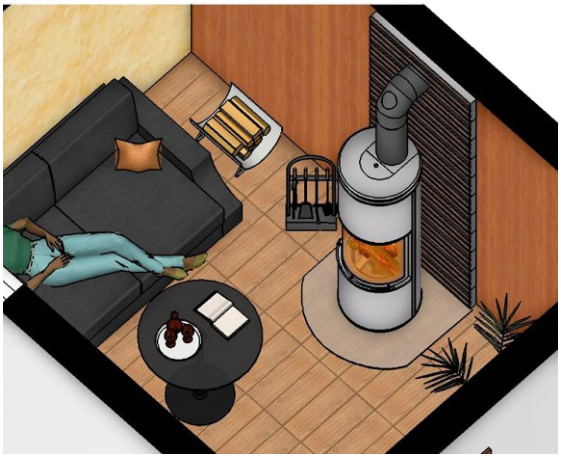

Fig 4. Free Standing Appliance

Docherty Group
Unit 15-16 Colthrop Business Park
Colthrop Lane, Thatcham, Berkshire, RG19 4NB
T: **01635 292 400** F: 01635 201 737 E: info@docherty.co.uk