

Spartherm Wood Fire Specification and Installation Guide



1.0 PRODUCT DESCRIPTION

Spartherm Wood Fires are designed as a built-in appliance encased in a self-supporting, sealed enclosure of Skamotec 225 calcium silicate board. They use a triple cased flue system to remove combustion gases from the building. Air for combustion is taken from an external space, or where required, internally.

Spartherm Wood Fires are convection fires with central heating capabilities, supplying heat in two forms: radiant heat from the glass and convected heat from the chimney cavity. Air is drawn in at the base of the cavity, rising up and around the appliance. Heated air is vented from the Skamotec cavity through hot air vents located at the top of the cavity. The cavity can be easily finished or overlaid with most non-combustible materials.

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2.0 KEY PRODUCT FEATURES

	Large <i>Varia ASh-P8</i>	X-Large <i>Varia Bh-P7</i>	Double Sided <i>Varia A-FDh-P8</i>	Left and Right Corner <i>Varia 2L 80h-P7</i> <i>Varia 2R 80h-P7</i>
Door Type	Lift Door	Lift Door	Lift and Swing Door	Lift Door
Aeration	Variable	Fixed	Variable	Fixed
Output (Ave)	14kw	16kw	20kw	14.5kw
Output (Peak)	21kw	24kw	28kw	24kw
Weight	264kg	398kg	365kg	312kg
Cavity Dimensions (mm)*	2400H x 1145W x 695D	2400H x 1370W x 790D	2400H x 1250W x 712D	2400H x 1160W x 740D
Viewing Area (mm)	729W x 372H	1003W x 525H	878W x 440H	898W x 508W x 514H
Flue Damper	Yes	Yes	Yes	Yes
Flue/Casing Dia. (mm)	150/200/250	200/250/300	200/250/300	150/200/250
Hearth Size (mm)	1360W x 475D	1570W x 700D	1280W x 630D	1650W x 1260W x 560D

*Cavity dimension includes a double layer of Skamotec Enclosure Board to the back and sides of the cavity.

3.0 DESIGN CONSIDERATIONS

3.1 Cavity Information

- The cavity encasing the **Spartherm Wood Fire** must be constructed entirely from Skamotec 225 and no substitutes are allowed. The Skamotec cavity does not require structural support but where medium or heavyweight linings wall linings are to be overlaid of the Skamotec 225 cavity, additional structural support may be required. Combustible or heat sensitive materials must not be used within the construction of the Skamotec cavity.
- All joints are to be lapped, and mechanically fixed using 10g x 75mm screws and a continuous bead of Skamolex adhesive. Sheet joints are back blocked using a continuous segment of Skamotec 225 (forming a 100mm overlap) and glue/mechanical fixings.
- Where the cavity is against a combustible material, a double layer (2 x 40mm sheets) of Skamotec is to be used. The outer layer can be structurally supported by the combustible material.
- Joints between double layers of Skamotec sheets must be staggered or offset by at least 150mm.
- Maintain a 5mm gap between the Spartherm door frame and the Skamotec 225, for expansion and contraction.
- All Skamotec surfaces to be fixed with adhesive including joints, **must be pre-primed** using Mapei Primer G or Skamol Enclosure Primer, following the prescribed method for each product. Remove dust prior to application of the primer.
- Skamotec sheets should be handled with care. Do not use damaged or cracked sheets.
- The fireplace must be installed onto a non-combustible base that is suitably engineered to support the weight of the appliance. Suitable seismic restraint must be provided by screwing or bolting the four feet of the fireplace securely into the base.

3.2 Cavity Clearances

- Cavity clearances are built into the overall design of the Spartherm Wood Fire system and in the creation of the Skamotec enclosure. This is to allow air flow around the appliance, for expansion and contraction during operation and to reduce the surface temperature of the enclosure.
- Minimum cavity clearances are specific to each Spartherm. These allow for installation of the requisite components of the fire and cavity.

3.3 Hearth

- An insulating hearth conforming to the specific size requirements must be installed unless the floor is made entirely from a non-combustible material. *Refer to previous page*
- The hearth must be constructed from, and finished in, a non-combustible material.

3.4 Mantel

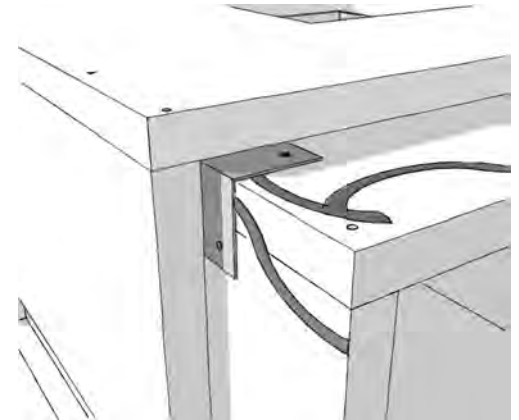
- Ensure clearances to combustible materials are maintained when building a mantel or shelves above the Spartherm Wood Fire. *Refer to requisite Spartherm Wood Fire detail sheet*
- Elevated temperatures on the wall or in the air above the Spartherm Wood Fire can cause degradation, discoloration or damage to decorative items, televisions, or other electronic components.

3.5 Combustion Air Intake

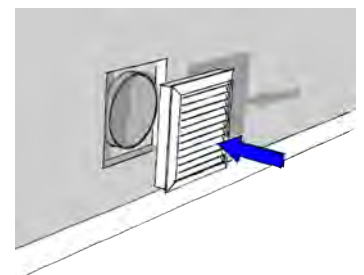
- Combustion air intake vent directly to the appliance = **minimum open area of 177cm²**.
- It is recommended to take combustion air from an external space. It may be taken from an internal space, but a resupply of air will be required back into the room from where air is taken, complying with AS/NZS2918.
- When using external combustion intake do not draw air from garage spaces, attic spaces, basements, or above the roof where other heating appliances, fans and chimneys exhaust or utilise air. Ensure that the run of pipe is short and as unrestricted as possible. Use rigid smooth walled pipe where possible with maximum bends in the pipe of two.
- Intake vents must be constructed entirely from non-combustible materials and must not be easily obstructed or closed.
- Insulation may be required where condensation may form on the outside of the pipe.
- External vents need to be protected from the ingress of vermin or any foreign matter.

3.6 Convection Air Intake

- Convection air intake needs to be considered early for the optimum design intent to be achieved. This will allow distribution of heat off the fire.
- Spartherm have minimum open vent area requirements and do not restrict designers to specific vent options. **Minimum open area requirements for the intake vent = 540cm²**.
- Locate vents no higher than **300mm** from the base of the fire.
- Ensure that any vent cannot be easily obstructed.



*Lapped corner with flashing in place



*Combustion intake vent shown externally

3.0 DESIGN CONSIDERATIONS cont.

3.7 Convection Air Outlet

- There are two different convection air venting options, **Ducted** and **Non-Ducted**. Early planning will ensure that the heated convection will allow for distribution of the air to the room and/or other spaces.
- Outlets must be placed in the permissible discharge zone – minimum **400mm** down from a combustible ceiling and **500mm** up from the top of the appliance.
- Vent discharge air may be very hot and present a fire or heat damage risk. Ensure to comply with the minimum distance to combustibles when locating heat sensitive decorative materials or finishes.
- When distributing convection air away from the room the fire is located return air may be required to equalize pressure between the spaces.
- Ensure the vent locations are balanced to optimise heat distribution and ensure that outlets cannot be blocked or restricted.
- Use only suitably rated and approved semi rigid aluminium flexible ducting and discharge vents. We do not recommend the use of floor vents.
- The convection air vent should only be in contact with a heat resistant wall lining, minimum 10mm thick.

3.8 Non-Ducted Vent Outlet

- Must have an **open surface area of a minimum 880cm²** in total, cut into the Skamotec cavity and finished with a decorative grille if desired.

3.9 Ducted Vent Outlets

- The determined size of the ducted and non-ducted **open surface area must always be a minimum of 880cm²**.
- This option has aluminium flexible ducting connected from the spigots on top of the appliance, to the opening in the Skamotec cavity. Ducting can be attached to all four or a decreasing number of these spigots to control the discharge of heated convected air from the Skamotec cavity. If the number of ducted vents is increased, then the non-ducted vented open area requirement is reduced accordingly. *Refer to Spartherm Install Manual*
- Ducting may be transferred to other rooms adjacent to the fire only through a fully sealed Skamotec cavity for the duct's entire length. This ducting must have a continual rise of 3deg, to a maximum length of 7m, with no dips. Fully support ducting to not impede air flow.

3.10 Flue Damper

- A flue damper, for controlling smoke spillage when lighting or stoking the fire, is required. The location of the **flue damper control lever** and shaft must be considered and planned for during design stage. The control lever generally fixes to the side of the Skamotec cavity and must be incorporated into any adjacent structure or finish.



*Flue Damper Control Lever

3.11 Flue System

- The system requires a sufficient supply of combustion air to support the combustion in the firebox and to replace the exhaust leaving the appliance.
- **Minimum flue length is 4.2m**, measured from the top of the fire. Design the flue system with the least amount of restriction possible. Flue systems that are too short or with complex offsets can have adverse effects on flue draught.
- The flue system comprises of an inner SS flue from the fire, a minimum 25mm air gap, and two galvanised MS casings with a minimum 25mm air gap between each casing. This is capped with a casing cover and the flue cowl to match appropriate flue size. **Maintain a minimum 25mm gap** from the outer casing to any combustible material.
- Any flue system used on this Spartherm Wood Fire must comply with AS/NZS2918.
- A roof penetration will be required and is to be flashed as required by the relevant Building Code.

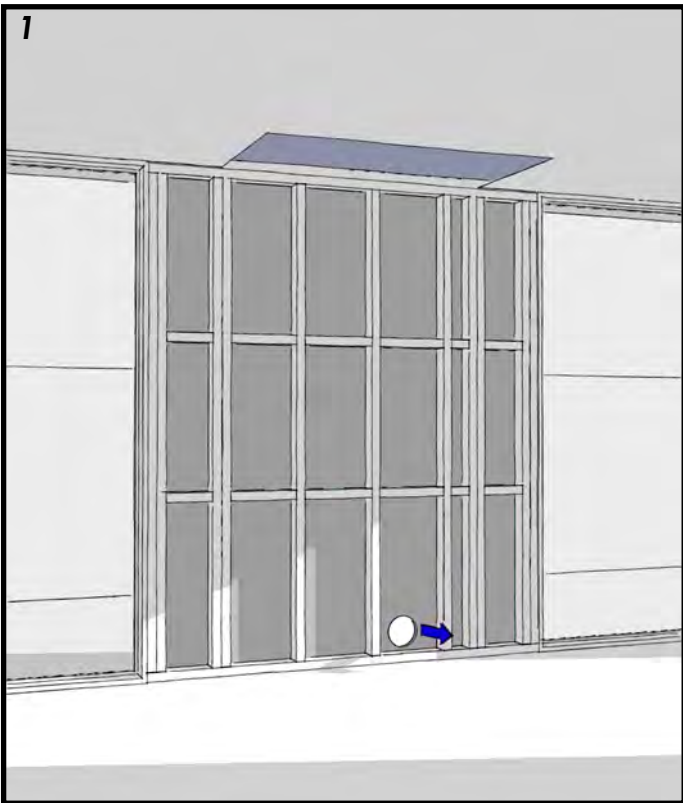
3.12 Dropbox

- The flue **dropbox** kit is specifically designed for this appliance providing a means to incorporate a triple skinned flue installation, and seal the hot air within the cavity. Two sizes are available for a 150 or 200mm dia. flue.
- Seal the junction between the telescopic sliding sections of the dropbox using a high temp RTV Sealant.
- The supplied metal structural framing above the cavity will support the dropbox and take the load of the triple skinned flue system. This must be fixed to the structure of the home and not the Skamotec cavity. Maintain a **10mm air gap** between the dropbox and the supplied steel framing.
- The interface between the dropbox and Skamotec top (inside the cavity) is to be sealed with the supplied **cavity closure bracket**. Seal the junctions between the bracket, dropbox and Skamotec top with a high temp RTV Sealant.

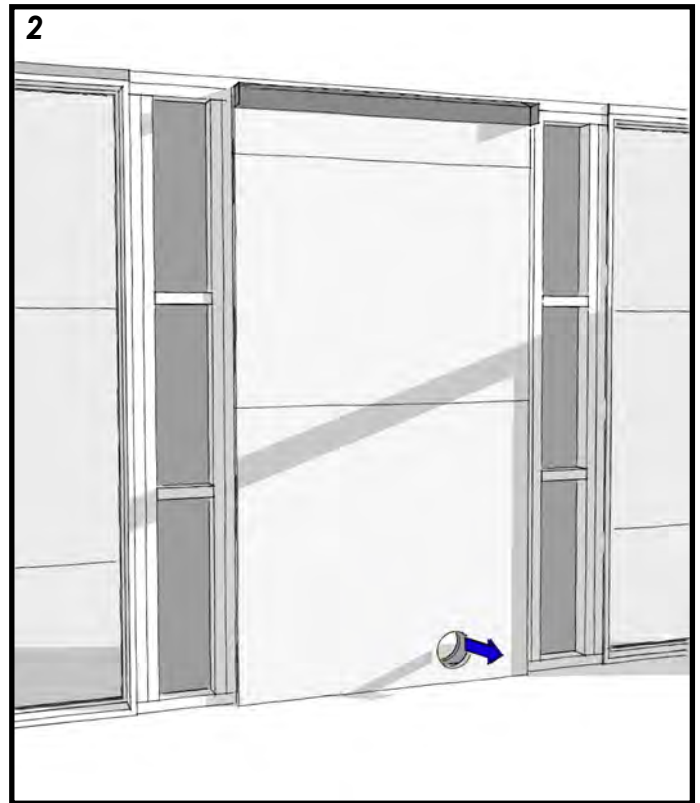
3.13 Finishes

- Skamotec 225 can be finished with standard gypsum-based plaster products, trowel applied render products, or porcelain or stone tiles. The Skamotec enclosure may be clad in a suitable non-combustible or heat resistant material. **Ensure material suitability** prior to specification.
- Where possible avoid creating joints between Skamotec sheets around the opening, directly above the fire or adjacent to convection air outlets.
- Electrical cables and components must not be placed in close proximity to the Spartherm Wood Fire. Treat as a combustible material.

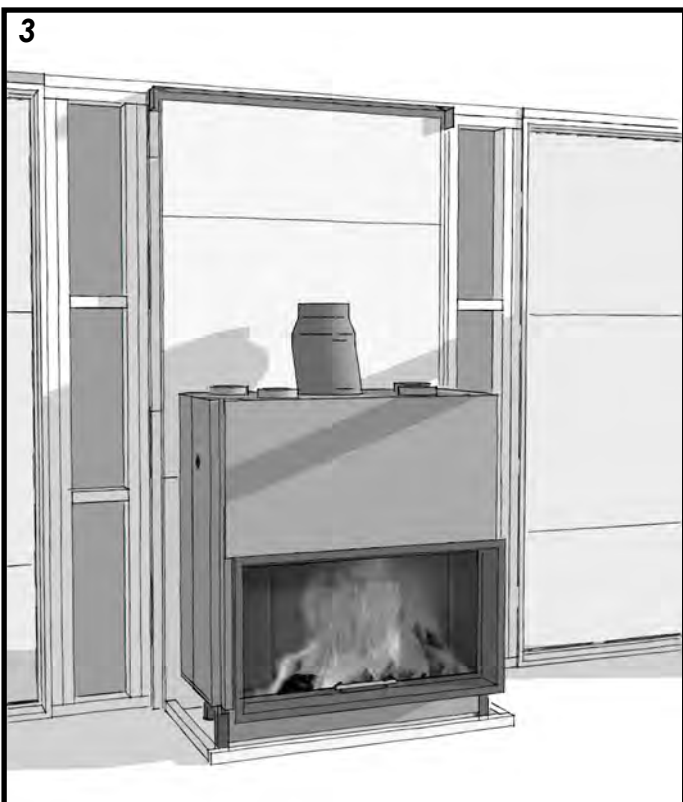
5.0 CONSTRUCTION METHOD



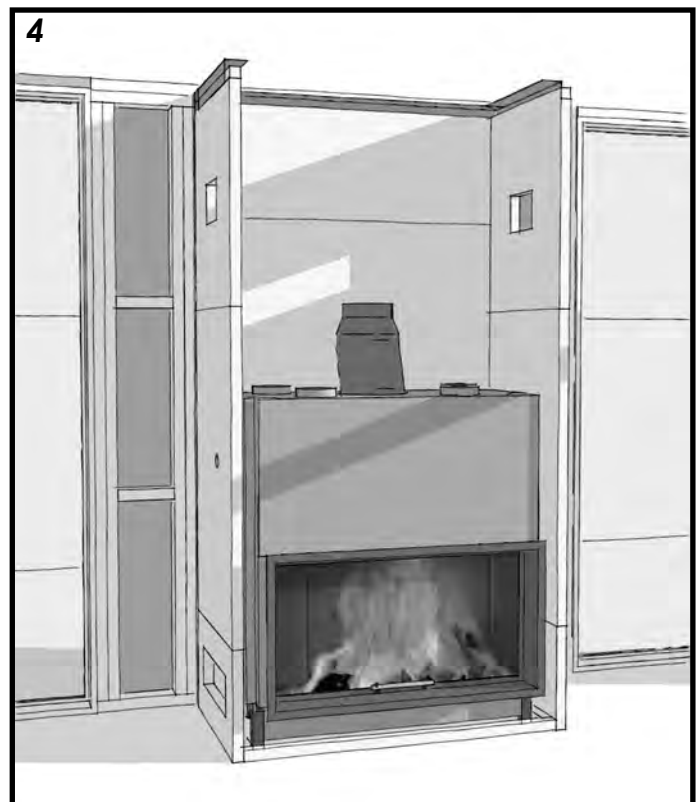
- + Blank space ready for Skamotec chimney cavity.
- + The wall can be lined or unlined.



- + Fit first layer of Skamotec with hole aligned for the externally located combustion air intake.
- + Fix rear metal flashing to back panel.
- + Back panel will be 40mm down from overall cavity height

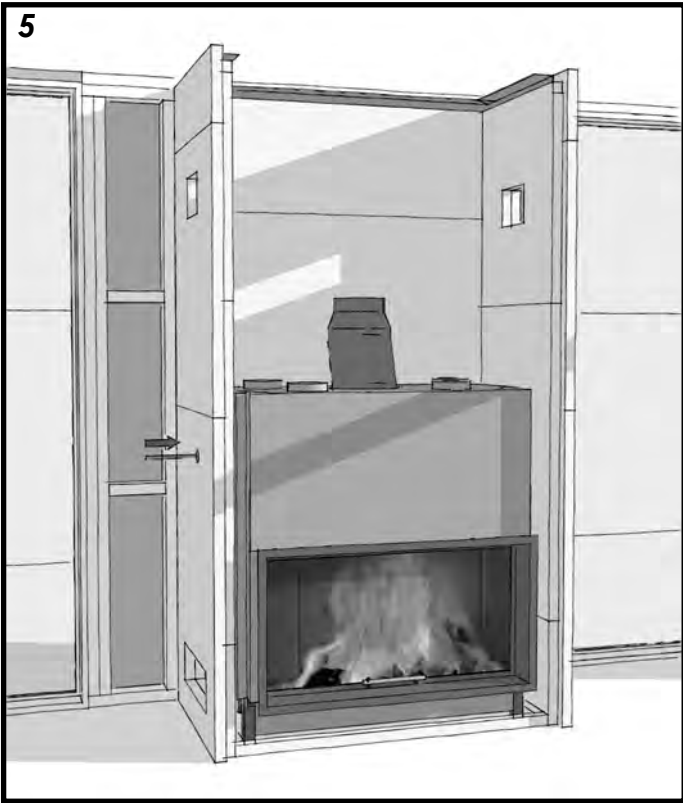


- + Locate inner back panel inside flashing and 80mm down from the overall cavity height. Glue and screw to back panel.
- + Install fire in final position and fix to floor.
- + Add battens to floor for side and front panel fixing.

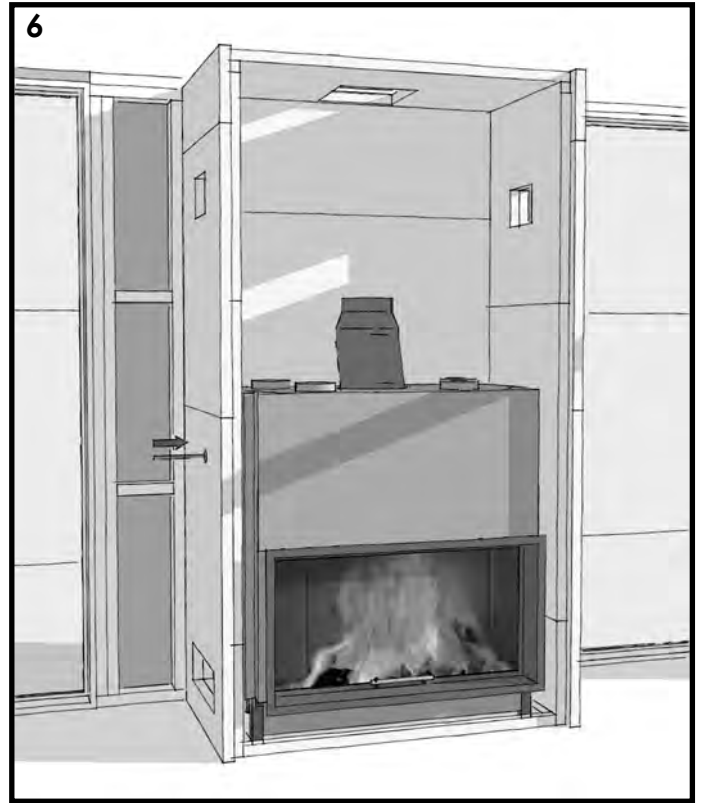


- + Install inner side panels and side flashings behind panels.
- + Lap joint onto the inner back panel for fixing.
- + Cut vent holes in final locations.

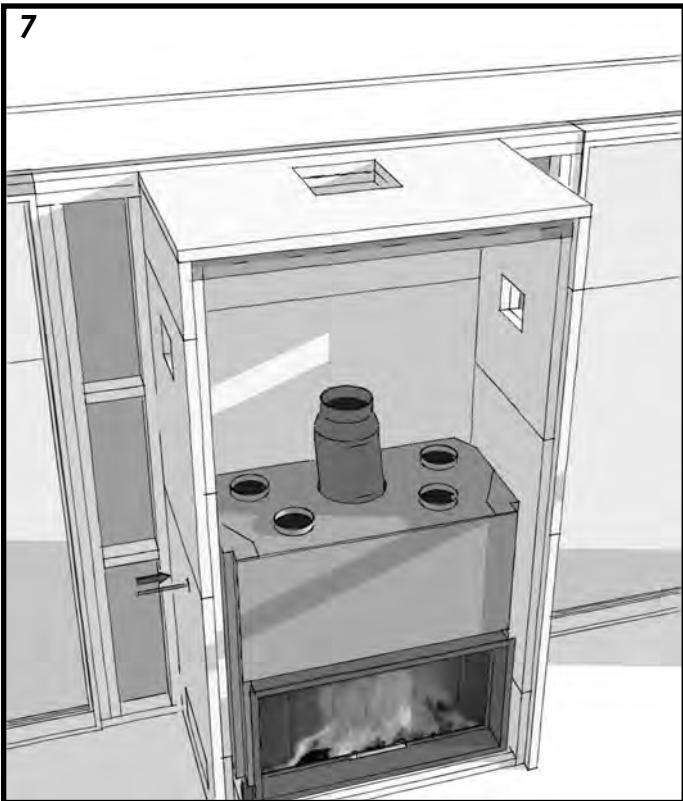
4.0 CONSTRUCTION METHOD cont.



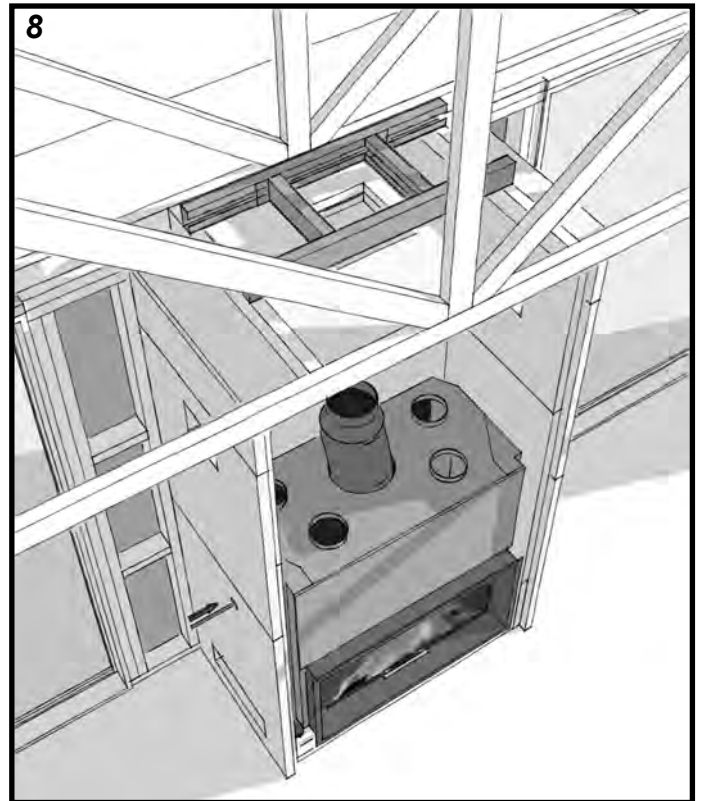
- + Fix outer side panels by screwing and gluing to inner panels.
- + Locate vent holes where required.
- + Cut out hole in appliance and panels for the flue damper shaft.



- + Install Inner top panel and locate hole for dropbox.

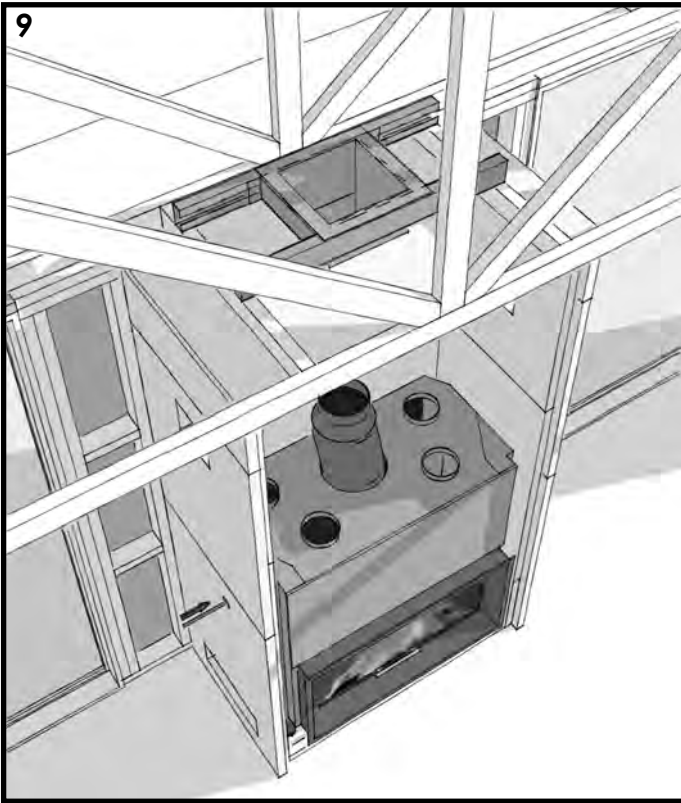


- + Install front flashing at the top of the cavity.
- + Fit in place outer top panel with corresponding dropbox cut out.

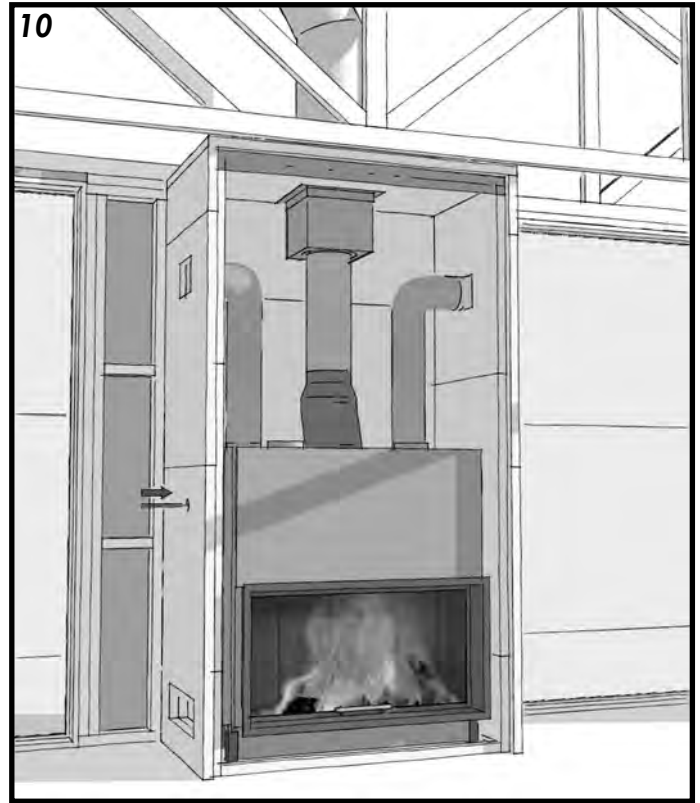


- + If not already complete, install supplied dropbox metal framework onto the building structure (wall or roof).

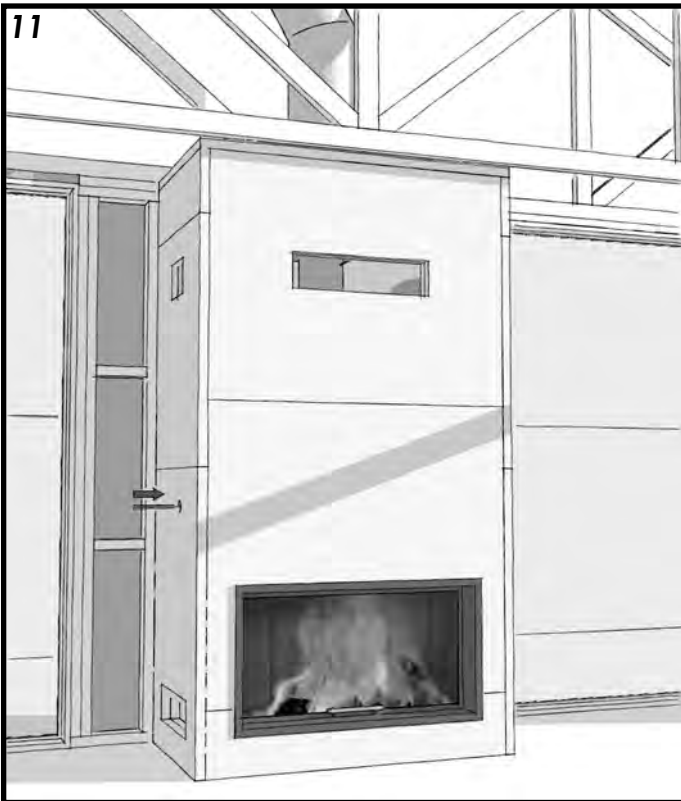
4.0 CONSTRUCTION METHOD cont.



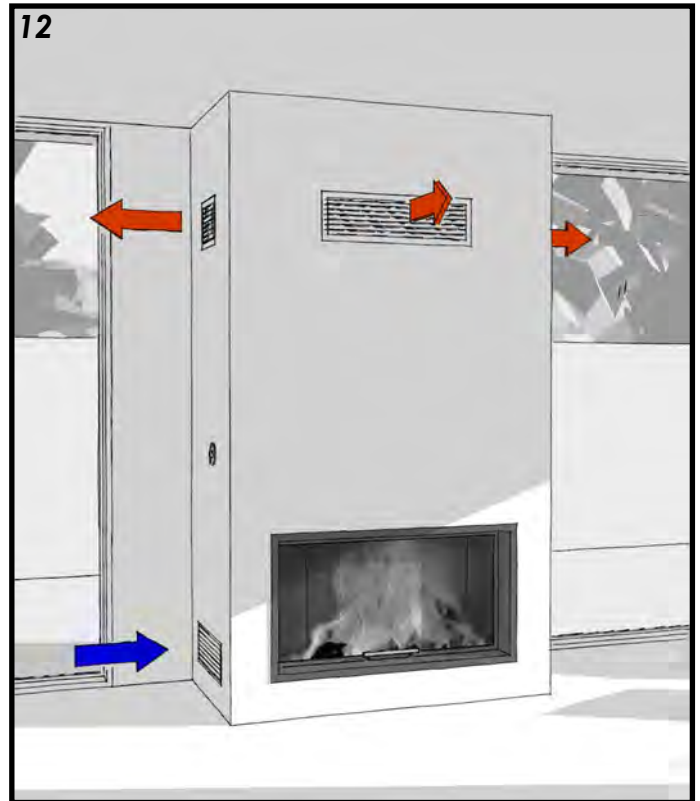
- + Cut down dropbox to correct size allowing for 600mm of exposed flue within the cavity.
- + Fix dropbox into preformed support structure. allow for a 10mm minimum gap between framework and dropbox sides.



- + Install flue into appliance and to required height.
- + Install outer casings into the dropbox and complete remaining flue components.
- + If ducted vents are used, fix ducting to fire and to selected vents.

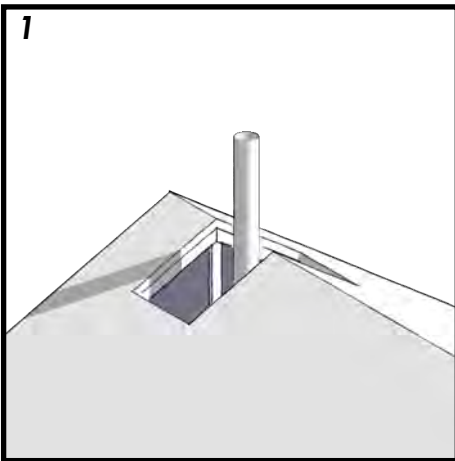


- + Fit front panel, inner and then outer if a double layer is required.
- + Back blocking to sheet joints where no double layer is used.

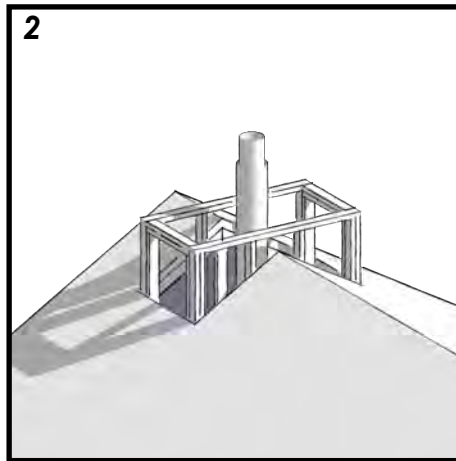


- + Apply finishes and install vent grilles (where used).
- + Cut down flue damper control shaft and fix control lever to the cavity.
- + Spartherm Wood Fire Installation is complete.

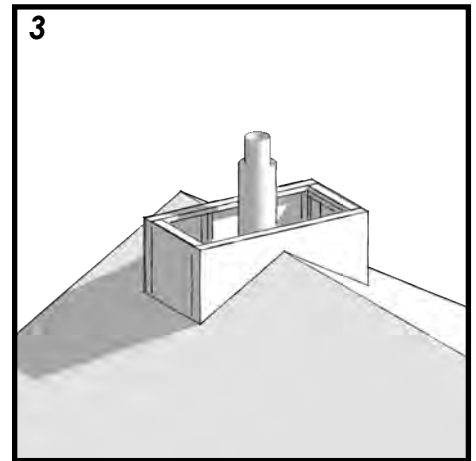
5.0 FLUE - FULL HEIGHT CHIMNEY CHASE OR CAVITY



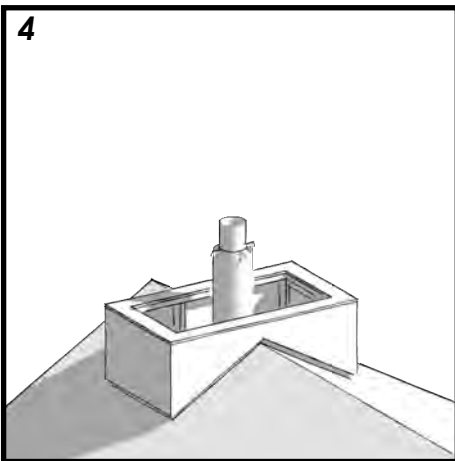
- + Flue fixed to the fire and passing through the dropbox.
- + Flue will extend above casing finish height



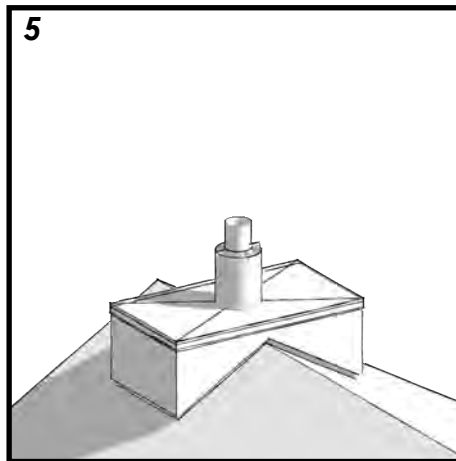
- + First flue casing installed into the dropbox. Spacers added to maintain air gaps.
- + Framing to form chimney chase above roof line.



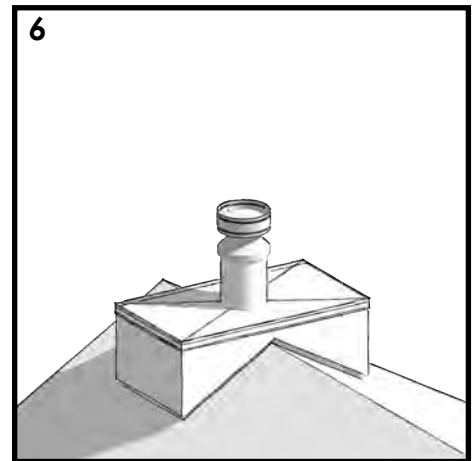
- + Second flue casing in place to final height.
- + Ensure to maintain a 25mm gap to combustible materials.



- + Cladding and finishes applied.
- + Insulation board (10mm min.) added to the top of the framing and cladding.
- + Spider bracket fixed to flue to maintain air gaps and support casing cover.

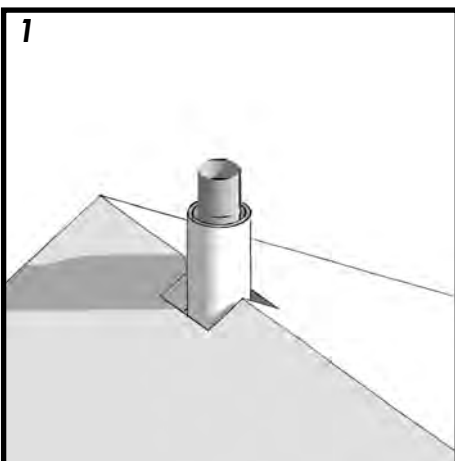


- + Chimney cap flashing with third casing to form an upstand. Min. height from cowl to cap flashing is 600mm.
- + Additional casing is required to vent the chimney cavity.

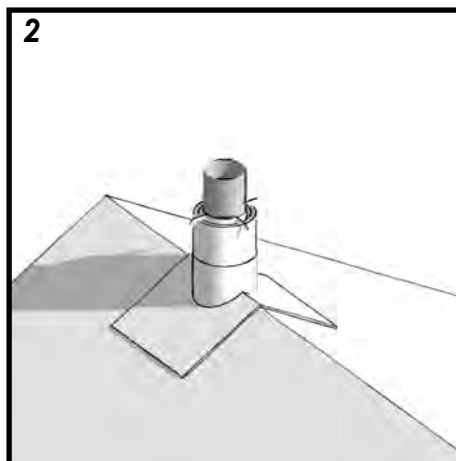


- + Casing cover and Cowl fitted to the flue.
- + Flue system is complete.

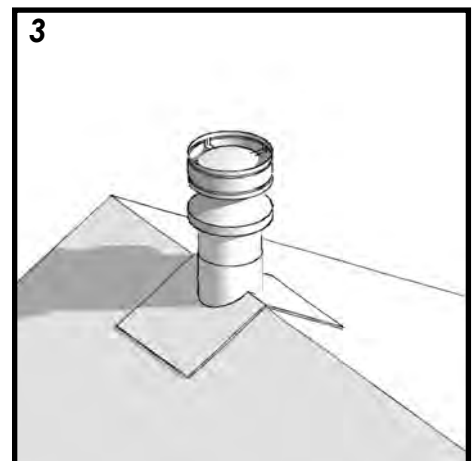
6.0 FLUE - ROOF PENETRATION



- + Flue fixed to the fire and passing through the dropbox.
- + Outer casings installed onto the dropbox.
- + Spacers added to maintain air gaps.



- + Flue flashing fitted with roof soaker flashing where required.
- + Spider bracket fixed to flue to maintain air gaps and support casing cover.



- + Casing cover and Cowl fitted to the flue.
- + Flue system is complete.

6.0 LIMITATIONS, HEALTH AND SAFETY

- Failure to follow this **Design Guide** and the **Spartherm Installation Manual #630359**, could result in death, serious bodily injury, and/or property damage. Failure to follow these instructions may also void your fire insurance and/or warranty.
- The images and diagrams are a visual guide to accompany the written instructions and should be read in conjunction with each other. All images and diagrams in this guide are for illustrative purposes only.
- This Spartherm Wood Fire and Flue system must be installed in accordance with **AS/NZS 2918** and any relevant Building Codes. **Spartherm Wood Fires must be installed by a Spartherm Approved Installer.**
- The Spartherm Wood Fire must be installed using only the building materials approved by the manufacturer. Inspect all parts prior to installation as cracked and broken components (e.g. glass panels or ceramic tiles) may render this installation unsafe.
- Take care when installing to prevent injury as this product is heavy. Installation will require a team or mechanically aided lift and placement.
- Wear the appropriate safety gear during installation. Sheet metal edges may be sharp.
- Due to high temperatures, the Spartherm Wood Fire should be located out of trafficable areas and away from furniture and draperies.
- Ensure clearances to combustible materials are maintained above the Spartherm Wood Fire. Elevated temperatures on the wall or in the air above the Spartherm Wood Fire can cause deformation, degradation or discolouration to decorations, Televisions or other electronic components.
- Ensure that a negative pressure environment is not created within the room the fire is located. Exhaust fans or Rangesoods, for example, can create a negative pressure environment and this could affect combustion of the fireplace or increase the possibility of smoke spillage.
- Do not operate without fully assembling all components.
- This Spartherm Wood Fire is designed to burn natural softwood only. Do not burn green or freshly cut wood, treated wood, coal, charcoal, coloured paper, cardboard, solvents or garbage.
- Operate only with the door tightly closed unless instructed otherwise. Do not slam shut or strike the Spartherm Wood Fire glass door.
- Do not overload or over fire the Spartherm Wood Fire and do not let the Spartherm Wood Fire become hot enough for any part to glow red.
- This Spartherm Wood Fire can be very hot when burning. Combustible materials placed too close to the fire can catch alight. Clothing or other flammable material should not be placed on or near the Spartherm Wood Fire.
- The Spartherm Wood Fire glass and/or screen will remain hot for an extended period of time after the fire is out.
- Your Spartherm Wood Fire requires periodic maintenance and cleaning. Failure to maintain your Spartherm Wood Fire may lead to smoke spillage into your home.
- The data plate for the Spartherm Wood Fire is located on the appliance (varies according to model) with an additional data plate provided loose which shall be adhered to the back of this Installation Manual upon completion.
- Any modification of the Spartherm Wood Fire that has not been approved in writing by the testing authority is considered to be in breach of any approval granted for compliance with AS/NZS 4012:2014 and AS/NZS 4013:2014.

7.0 STOKE FIREPLACE STUDIO LOCATIONS

AUCKLAND

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GENERAL CONSTRUCTION AND FINISHES SHOWN INDICATIVE ONLY

Due to ongoing product development, Escea reserves the right to change any specifications listed in this document without notice.