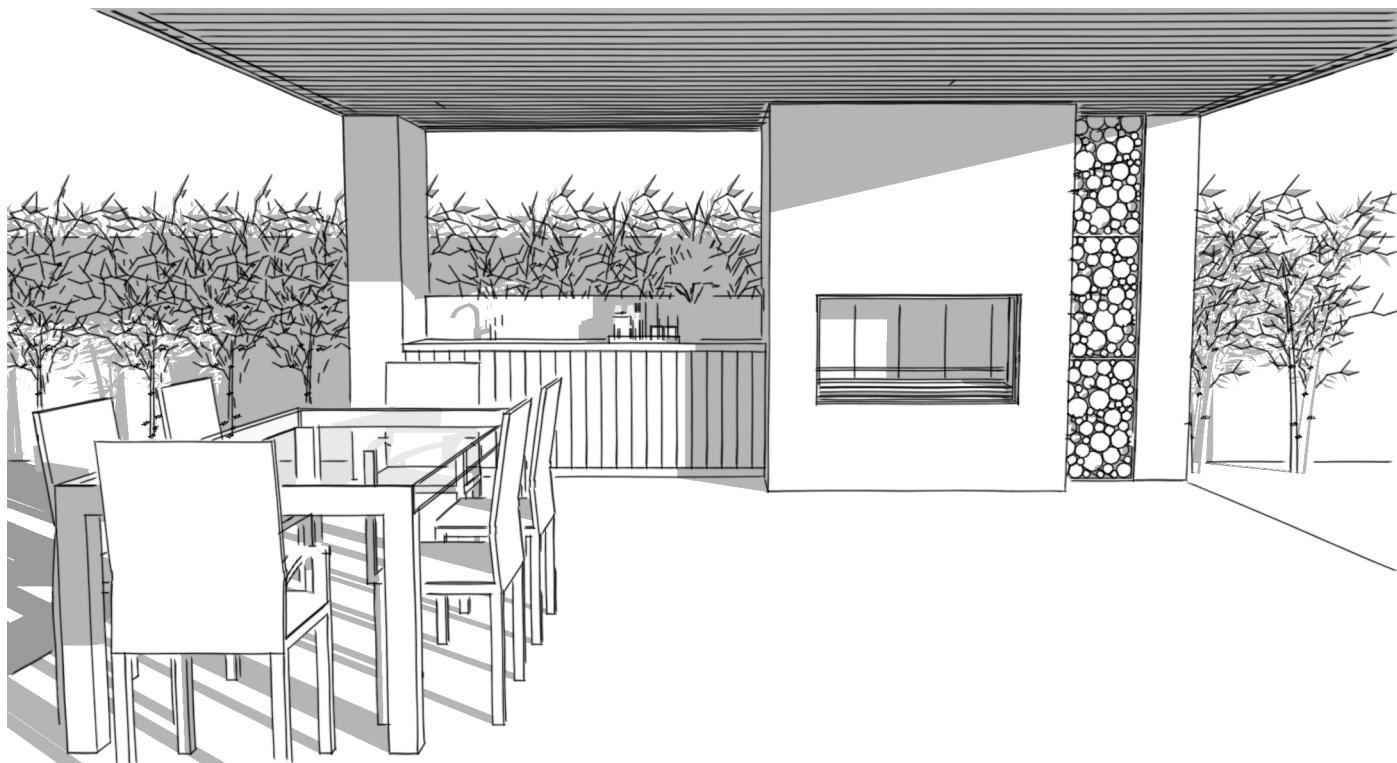


## ***EK Series - Timber Cavity Installation with AAC Panel Heat Cell***



### **1.0 PRODUCT DESCRIPTION**

The EK Series Fireplace is an outdoor cooking wood fire with the ability to seamlessly transform from a cooking appliance into a fireplace for entertainment. This Design Guide is to assist with the specification and installation of the **EK Series Outdoor Fireplace Kitchen** into a combustibile structure using an **AAC Panel Heat Cell**. The AAC Heat cell will insulate the fireplace from the combustibile structure.

[www.escea.com/ek-series](http://www.escea.com/ek-series)

### **2.0 MAIN FEATURES**

The Fireplace comes equipped with everything you need to achieve a smoky meat lover's feast.

**Professional Grilling** – 13-point adjustable height grills and an ember generator let you cook your food at the perfect temperature, for that flame grilled smoky flavour. \*

**Built to Last** – with a double layer of 4mm Steel, air cooled fluted Stainless-Steel back plates and 25mm thick fire bricks lining the base, the firebox is protected from the extreme heat of the fire ensuring it will stand the test of time and the elements.

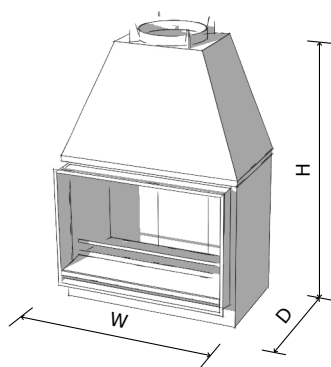
**Inside, Out** – the EK Series features new technology that allows the fire to be attached to the home, for greater indoor-outdoor flow.

**AAC Heat Cell** – using the insulating properties of Aerated Concrete, the heat cell will allow the fireplace to be safely installed into a timber framed building. Lightweight construction will reduce the structural complexity of the fireplace specification.

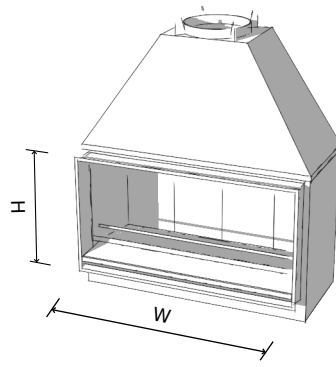
*\*EK1250 and EK1550 only. EK950 comes with the adjustable grill plate only.*

**The Installation of the EK Series Fire must be installed strictly in accordance with the EK Series Installation Manual #630451**

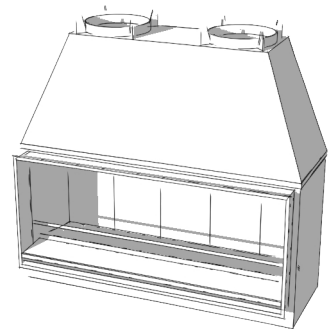
### 3.0 PRODUCT DETAILS



**EK950**



**EK1250**



**EK1550**

	<b>EK950</b>	<b>EK1250</b>	<b>EK1550</b>
<b>Fireplace Dimensions:</b>	997W x 1543H x 655D	1296W x 1543H x 655D	1596W x 1543H x 655D
<b>Viewable Area (opening):</b>	948W x 666H	1247W x 666H	1547W x 666H
<b>AAC Heat Cell Dimensions (minimum):</b>	1260W x 1700H x 896D	1560W x 1700H x 896D	1860W x 1700H x 896D
<b>Combustible Cavity Dimensions (minimum):</b>	1320W x 1800H x 930D	1620W x 1800H x 930D	1920W x 1800H x 930D
<i>All Dimensions in mm</i>			

### 4.0 DESIGN CONSIDERATIONS

#### 4.1 Combustible Cavity Design ☐

- If the **EK Series Fireplace** is installed into a combustible structure (e.g. timber framed building) the Fireplace must be installed into an **AAC Panel Heat Cell**. This does not include the chimney chase.
  - Minimum clearance from the AAC back panel to adjacent combustible material = **34mm**
  - Minimum clearance from the AAC side panel to adjacent combustible material = **30mm**

#### 4.2 AAC Cavity Design ☐

- AAC panels, **75mm thick**, are used to construct a Heat Cell around the Fireplace. Minimum AAC Heat Cell dimensions will include clearances between the Fireplace and AAC Panels.
  - Minimum clearance from back of the appliance to adjacent AAC Panel = **130mm**
  - Minimum clearance from side of the appliance to adjacent AAC Panel = **57mm**
- AAC Panels are to meet the minimum thermal resistance – **R-Value = 0.59m²K/W.**
- AAC Panels are mechanical and adhesive fixed following the AAC Panel manufacturers methods. Ensure joints are sealed between AAC panels.
- The opening of the fireplace must be recessed into the front AAC Panel opening by **35mm**.
- Allow for a min. 5mm clearance around the opening of the fireplace to adjacent AAC Panel edges. The addition of a flashing may warrant a larger gap.

#### 4.3 External Clearances ☐

- For **optimum working height** it is recommended to install the Fireplace at **790mm from FL** to the base of the opening.
- Vertical clearance (from the opening) to a heat sensitive ceiling or roof above: **850mm** (for EK950 or EK1250) and **1500mm** (EK1550).
- Horizontal clearance (from the opening) to a heat sensitive side wall: **650mm** (EK950 or EK1250) or **1000mm** (EK1550)
- Keep any heat sensitive material (e.g. walls, furniture) clear in front of the opening, **2000mm**.

#### 4.4 **Hearth** □

- A **Hearth** or **Heat Resistant Floor Protector** will be required when the fire is at **790mm or above** from floor level to the Fireplace opening. Hearth sizes (measured from the fireplace opening):
  - 1348mm W x 300mm D (EK950)
  - 1647mm W x 300mm D (EK1250)
  - 1947mm W x 300mm D (EK1550)
- When the Fireplace is installed **below 790mm** from floor level to Fireplace opening, a 1000mm deep, **heat resistant** and **non-combustible**, hearth surface and structure in front of the fireplace can be installed strictly in accordance with AS/NZS2918 or the entire floor is fully non-combustible or heat resistant.

#### 4.5 **Mantel** □

- Must be fully **heat-resistant** and **non-combustible**.

#### 4.6 **Fireplace Platform** □

- The Fireplace must be installed onto a **non-combustible platform**, suitably designed to take the load of the Fireplace, Flue and AAC Panel Heat Cell. If the platform is constructed of a combustible material, the platform must be insulated from the fireplace, using 75mm thick AAC Panels.
- The platform must not inhibit air flow through the vents into the AAC Panel Heat Cell.

#### 4.7 **Seismic Restraint** □

- The fireplace must be fixed through the base of the appliance into the platform that supports it, not the insulating material.

#### 4.8 **Combustible Cavity Venting** □

- Air vents can be any size or shape, provided that the total combined open surface area is a minimum of **35300mm<sup>2</sup>** (for EK950 and EK1250) and **70600mm<sup>2</sup>** (for EK1550). *Note: a 150mm Ø hole = 17671mm<sup>2</sup>*
- Vents can be on the sides, back or front of the cavity. Vent air must come from an external space and not the building cladding cavity.
- Vents can be no higher than **300mm** above the base of the fireplace.

#### 4.9 **AAC Cavity Venting** □

- The **AAC Heat Cell requires venting** to provide fresh air into, and heated air out, of the Heat Cell. The vent open area minimum is **24000mm<sup>2</sup>** (for EK950 and EK1250) and **48000mm<sup>2</sup>** (for EK1550). These will be at the base of the AAC Heat Cell. *Note: a 110 x 110mm hole = 12100mm<sup>2</sup>*
- Venting of the AAC heat cell is through the **inner flue casing** and the flue casing cover, via the Dropbox.

#### 4.10 **Finishing** □

- When attached to the main envelope of the building the installation must comply with local **Building Code Requirements** for weathertightness. This is not the responsibility of Escea.
- Ensure that any drained cavity requirements are met; tanking or sill trays may be required.
- Claddings or finishes applied to the front of the AAC cavity must be **heat resistant** or **non-combustible**. Claddings to the side or back surface of the combustible cavity structure can be a combustible material.
- Flashings or other protection may be required for the recessed edges of the AAC Panel and cladding around the opening of the Fireplace. These recessed surfaces may be exposed to high levels of heat during operation and should be suitably designed to accommodate this exposure.

#### 4.11 **AAC Heat Cell Flue Dropbox** □

- A **Heat Cell Flue Dropbox** (575 x 575 x 77mm with 395mm Ø centre hole) is an integral part of the Combustible Cavity Installation Method, supporting the flue and casings, and as a transition piece to seal the AAC Heat Cell.
- A spacer bracket is fitted to the 350mm Ø flue to support the Dropbox. Correct height alignment is essential.

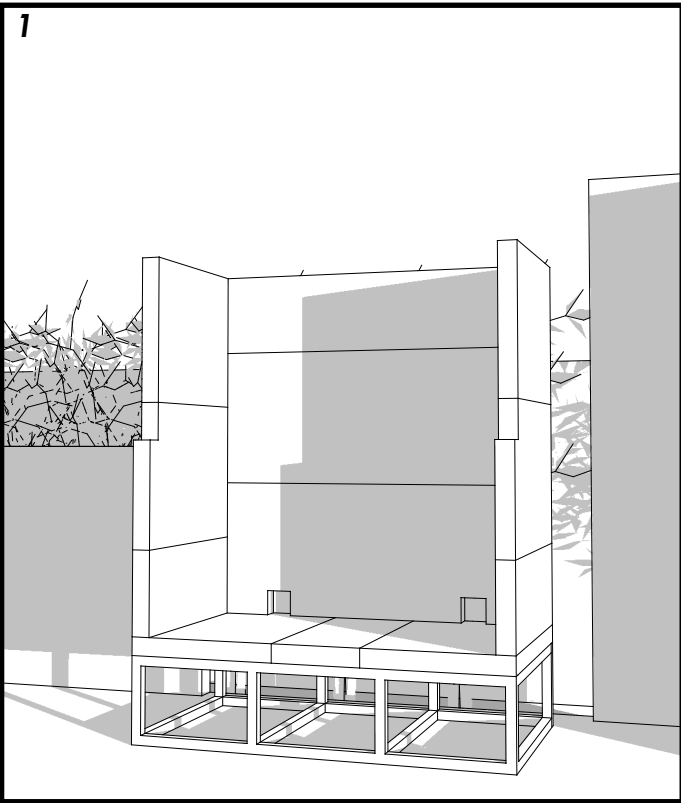
#### 4.12 **Flue** □

- This EK Series Fireplace uses a double cased **350-400-450mm Ø flue system** with a 650mm Ø Anti-Down Draught Cowl and Casing Cover. The EK950 and EK1250 have a single flue, while the EK1550 has a twin flue.
- Refer to **Sec. 7** for Flue Specifications.

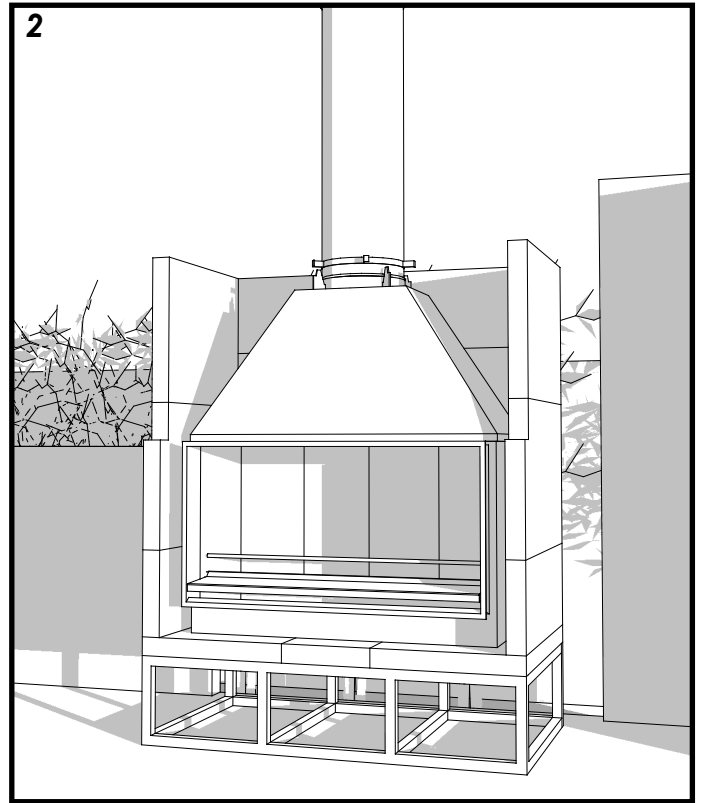
#### 4.13 **Compliance** □

- The design and installation of the EK Series Outdoor Fireplace Kitchen within a timber framed cavity and AAC Panel Heat Cell must comply with this Design Guide, the EK Series Installation Manual #630451 and AS/NZS2918.

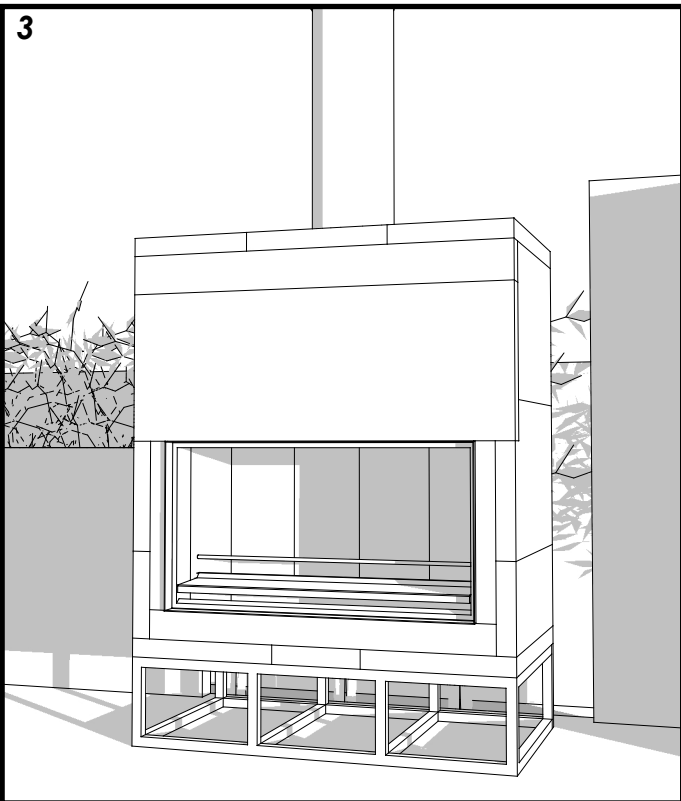
## 5.0 CONSTRUCTION METHOD



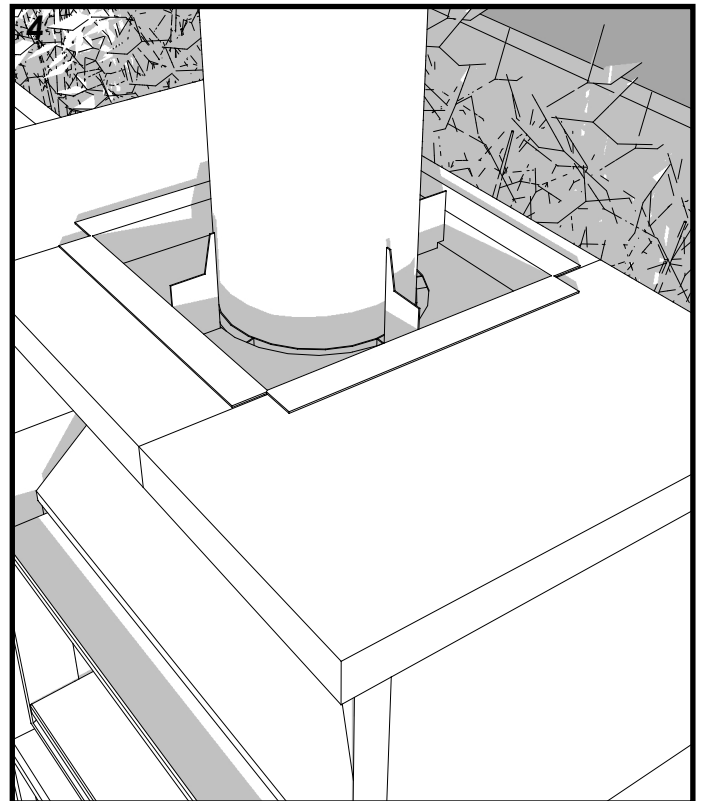
1  
Platform base located and fixed to floor.  
AAC Panel base layer, back and side panel added and fixed. AAC Cavity venting cut out.



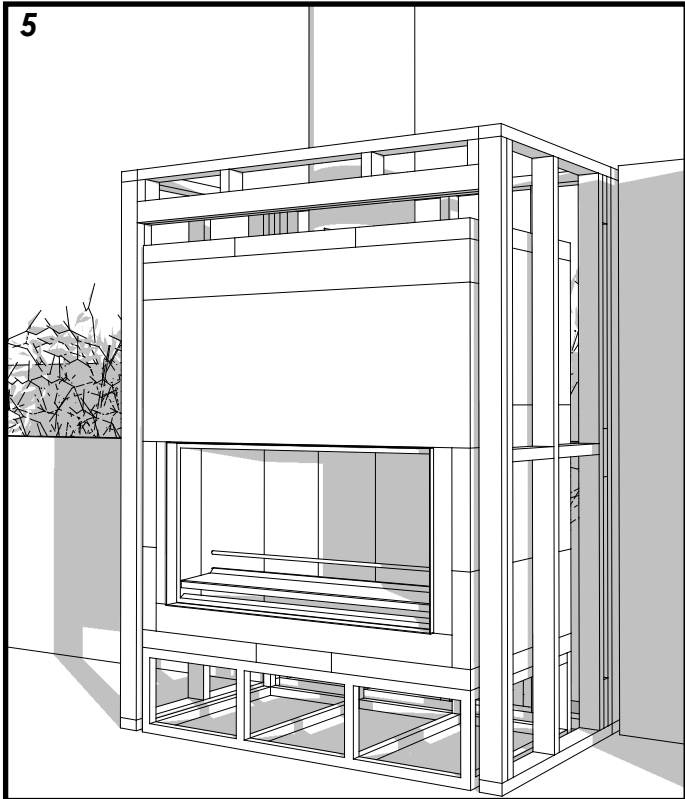
2  
Fireplace installed with Gather sealed and fixed in place.  
Flue located and sealed/fixed in place with dropbox support bracket located at the correct height.  
Seismic restraint (where required) added through to platform.



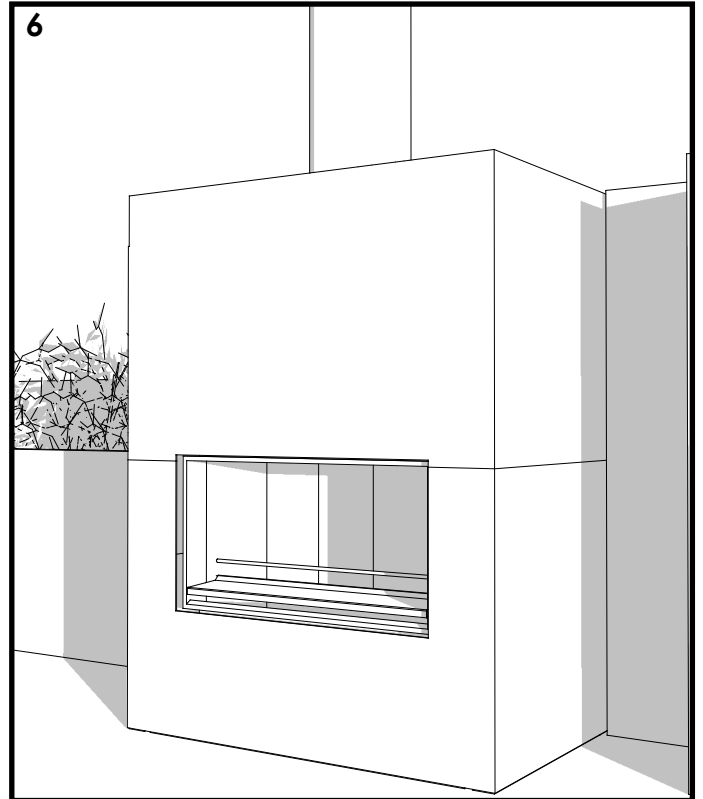
3  
AAC top and front panels added and fixed.  
Top panel cut for dropbox installation.



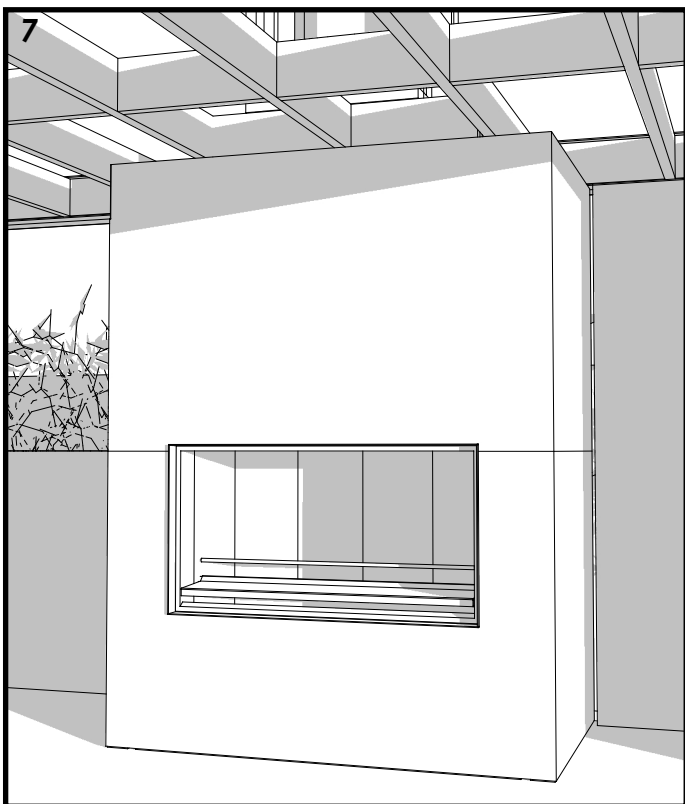
4  
Dropbox is installed into square hole at the top of the AAC Heat Cell. This assists in ventilation of the cavity.  
Seal and fix to AAC Panel.  
Outer flue casings installed onto dropbox



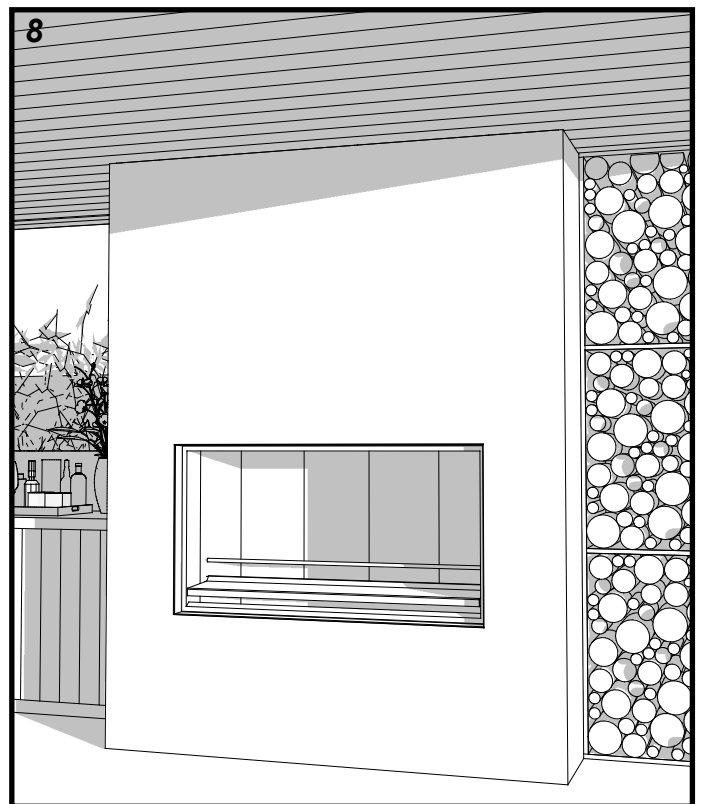
5 Framing in place meeting minimum combustible cavity sizes and design intent.



6 Wall wrap or underlay fixed. Combustible cavity venting located



7 Roof structure in place and with chimney chase built. Flashings installed to fireplace opening where required.



8 Finishes or claddings applied. Flue system completed with casing cowl and cowl. Fireplace is complete and finishes applied to the area.

## 6.0 LIMITATIONS

- This fire is intended for outdoor use only as a cooking/heating appliance.
- This fireplace is intended to be a built-in appliance within a chimney cavity, it is not intended to be exposed to moisture for extended periods of time.
- No modification of the fireplace or flue system is allowed. (This excludes flue offsets and bends in accordance with AS/NZS2918)
- This fireplace must be operated with a flue.
- The fireplace, flue system and chimney cavity construction must comply with this Design Guide, the EK Series Installation Manual #630451, Local and National Building Codes and any relevant Statutory Regulations including AS/NZS2918.
- Shortcomings in the fireplace and flue installation are the responsibility of the Installer. Escea will not be accountable for such failings or their consequences.
- Claddings, linings or surface finishes around the fireplace may be exposed to smoke damage, discoloration, damage or degradation due to overloading, thermal stress or expansion and contraction. Consideration must be given to suitable material selection above and around the opening of the fireplace for continued and safe use of the selected material.
- Precautions for specification and use must be taken in abnormally corrosive environments (e.g. exposed coastal areas).
- Overloading or thermal stress may accelerate rust or degradation of the fireplace. Follow the recommended loading guidelines.

## 7.0 FLUE SPECIFICATIONS

### 7.1 System

The flue system consists of a **350-400-450mm Ø flue** and **twIn casings**. This is a requirement for compliance, safety and AAC cavity ventilation.

The flue terminal uses a **350mm-650mm Ø casing cover** and a **650mm ODØ anti-down draught cowl**.

A top spacer bracket supports the casing cover and enforces the minimum air gap between casings. Additional Spacer brackets fit between casings to maintain the minimum air gap.

A 575mm square dropbox is installed into the AAC top panel. The dropbox acts as a transition adaptor, supporting the load of flue casings and providing an air venting pathway from the AAC heat cell.

A 350mm Ø flue dropbox support bracket is fixed to the flue. This takes the load of the dropbox and casings above.

### 7.2 Flue Flashing and Roof Penetration

Two options for flue penetration: through a chimney chase structure or flashing through the roof. **See page 7**

#### Option A – Chimney Chase Structure

- This involves the construction of a timber framed structure extending through the roof line terminating with a chimney cap flashing.
- A minimum 50mm gap must be maintained between the outer casing and any combustible materials.
- The chimney cap should incorporate a 550mm Ø casing finishing at the casing cover. Minimum height is **380mm**.
- An insulating board (minimum 9mm Promina, Eterpan or equivalent) must be installed between timber framing and chimney cap flashing. This will reduce downward heat transfer from the chimney cap into the timber framing.
- Chimney cap flashing must comply with the relevant Building Code requirements for durability and weathertightness.
- The chimney chase structure can be in contact with adjacent combustible materials.

#### Option B – Flashing through the Roof

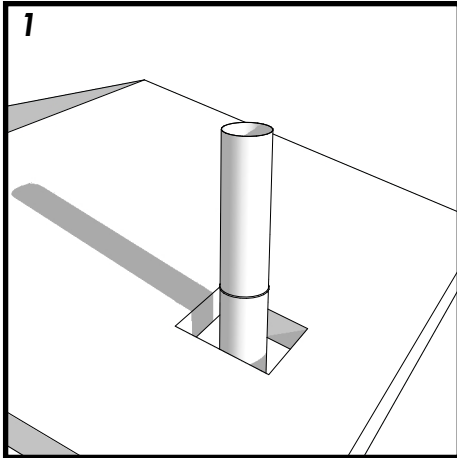
- This involves the timber framed cavity terminating at the underside of the roof line, and incorporating the use of a custom roof or rubber boot flashing to the roof/flue junction.
- The outer flue casing is a GAL MS 550mm Ø casing and its length will be installation dependent.
- Outer 450mm Casing must have a **50mm clearance** to any combustible material.
- The roof flashing must meet the outer 550mm Ø casing with a tight seal. This can be custom made or an EPDM boot flashing (dektite or similar).

### 7.3 Terminal Location Compliance

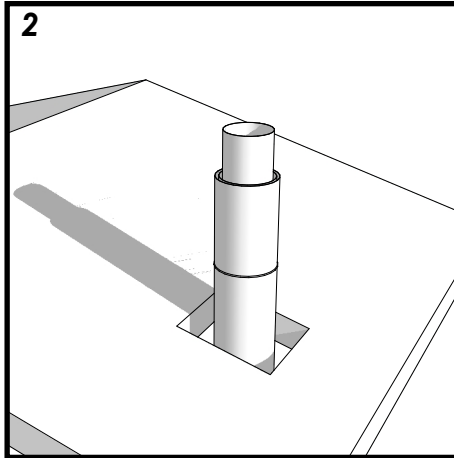
Flue termination must be located in accordance with AS/NZS2918 External Requirements.



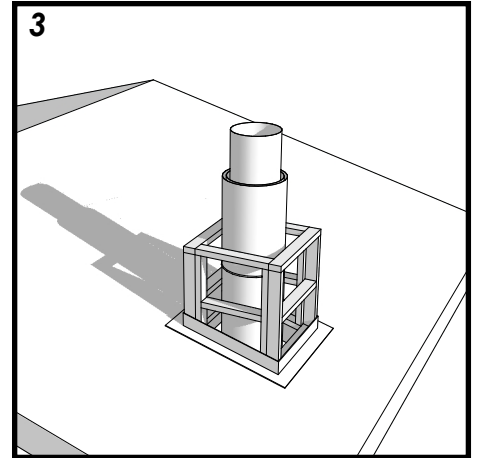
## OPTION A - Flashing with Chimney Chase Structure



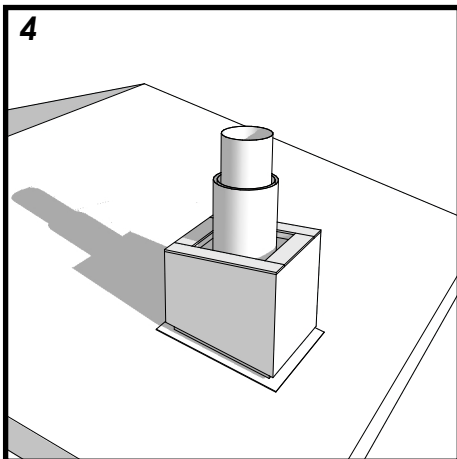
1  
350mm Ø flue fixed to the fire and passing through the dropbox.



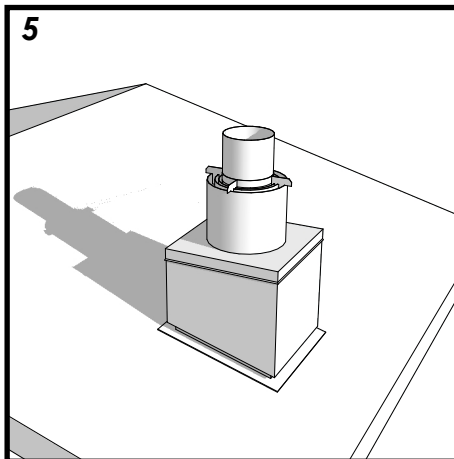
2  
400mm and 450mm Ø casings installed onto the dropbox. Spacers added to maintain air gaps.



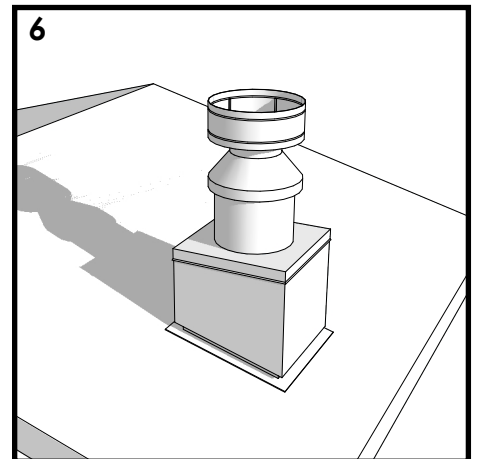
3  
Framing to form chimney chase above roof line. Flashings added to roof (where required).



4  
Cladding and finishes applied. Insulation board (10mm min.) added to the top of the framing and cladding.

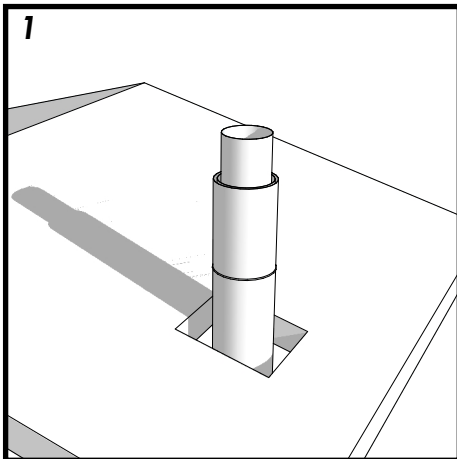


5  
Chimney cap flashing with 550mm Ø outer casing. Min Height 380mm. Spider bracket fixed to flue to maintain air gaps and support casing cover.

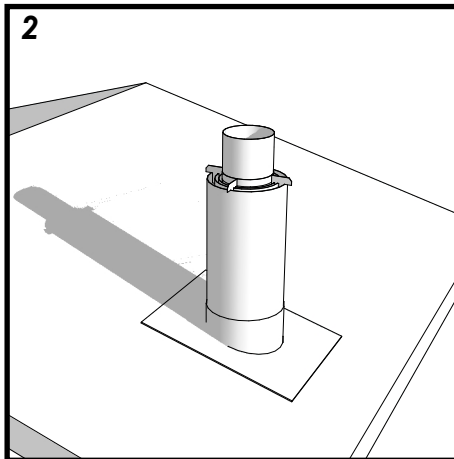


6  
Casing cover and Cowl fitted to the flue. Flue system is complete.

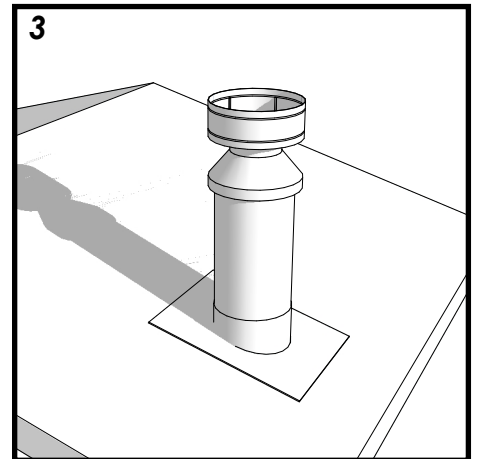
## OPTION B - Flashing through the Roof



1  
350mm Ø flue fixed to the fire and passing through the dropbox. 400mm and 450mm Ø casings installed onto the dropbox. Spacers added to maintain air gaps.



2  
550mm Ø outer casing fitted with required roof flashing. Spider bracket fixed to flue to maintain air gaps and support casing cover.



3  
Casing cover and Cowl fitted to the flue. Flue system is complete.

## 8.0 HEALTH AND SAFETY

- Failure to follow this Design Guide and the EK Series Installation Manual #630451, 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.
- Ensure correct installation as per this Design Guide and the EK Series Installation Manual.
- Take care when installing to prevent injury as this product is heavy. Installation will require a team or mechanically aided lift and placement.
- Surfaces of the fireplace may remain hot after use.
- Never leave a fire unattended.
- Do not overload the fireplace.
- Maintain and operate the fireplace in accordance with the EK Series Installation Manual #630451.
- Information on any known health risks of AAC products and safe handling procedures are on their packaging and/or the documentation provided with them. Please refer to these and the selected AAC Panel MSDS for further information.

## 9.0 TECHNICAL SPECIFICATIONS

<b>Model</b>	<b>EK950/EK1250 Open Fronted Cooking Fire</b>	<b>EK1550 Open Fronted Cooking Fire</b>
<b>Location</b>	Built-In Installation	Built-In Installation
<b>Fascia Style</b>	Frameless	Frameless
<b>Colour</b>	Metallic Black	Metallic Black
<b>Flue Kit</b>	Single 350-400-450mm dia Flue Kit	Twin 350-400-450mm dia Flue Kit
<b>Fuel Type</b>	Softwood/Charcoal Coals or Briquettes	Softwood/Charcoal Coals or Briquettes
<b>Extras</b>	Freestanding Kitset Enclosure Optional Weather Cover	Freestanding Kitset Enclosure Optional Weather Cover
<b>Flue System</b>	<b>914605</b> <b>EK950/EK1250 Open Fronted Cooking Fire</b>	<b>914605</b> <b>EK1550 Open Fronted Cooking Fire</b>
<b>Flue Location</b>	Roof or Chimney Cap	Roof or Chimney Cap
<b>Flue</b>	3x (1200mm L x 350mm dia) Stainless Steel	6x (1200mm L x 350mm dia) Stainless Steel
<b>Flue Casing</b>	3x (1200mm L x 400mm dia) GAL Steel 3x (1200mm L x 450mm dia) GAL Steel	6x (1200mm L x 400mm dia) GAL Steel 6x (1200mm L x 450mm dia) GAL Steel
<b>Cowl</b>	1x 350mm dia A.D.D Cowl - Stainless Steel	2x 350mm dia A.D.D Cowl - Stainless Steel
<b>Casing Cover</b>	1x 350-650mm Casing Cover - Stainless Steel	2x 350-650mm Casing Cover - Stainless Steel
<b>Flue Dropbox</b>	<b>914607</b> - 1x Flue Dropbox 575mm Sq x 77mm D with 1x 350-450mm dia Support Bracket	<b>914607</b> - 2x Flue Dropbox 575mm Sq x 77mm D with 2x 350-450mm dia Support Brackets
<b>Components</b>	1x 350-400mm dia Flue Casing Spacer 1x 400-450mm dia Flue Casing Spacer 1x 350-550mm dia Casing Cover Spider Bracket	2x 350-400mm dia Flue Casing Spacer 2x 400-450mm dia Flue Casing Spacer 2x 350-550mm dia Casing Cover Spider Bracket
<b>Flashings</b>	Rubber Boot or Custom Flashing	Rubber Boot or Custom Flashing

### MANUFACTURER & NZ DISTRIBUTOR

Escea Ltd  
17 Carnforth Street  
Green Island, Dunedin 9018  
New Zealand  
Ph +64 3 478 8220  
Email: info@escea.com

### AUSTRALIAN DISTRIBUTOR

Escea Ltd  
PO Box 176  
Pennant Hills, Sydney  
NSW 1715  
Australia  
Email: australia@escea.com  
WA Ph: 1800 730 140  
Rest of AU Ph: 1800 460 832

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