

GENERAL GUIDES
HEAT SHIELDING STOVES

Firepower

Table of Contents

Heat shielding stoves and other appliances.....	1
1. Method 1: using insulation board.....	1
i. Method 1 requirements:.....	1
Method 1: Where the stove is parallel, or no more than 30° to the wall.....	2
Method 1: Where the stove is at an angle of more than 30° to the wall.....	2
2. Method 2: using a metal shield.....	3
i. Method 2 requirements:.....	3
Method 2: Where the stove is parallel, or no more than 30° to the wall.....	4
Method 2: Where the stove is at an angle of more than 30° to the wall.....	4

Heat shielding stoves and other appliances

Document J gives some guidance on heat shielding flue pipes but says nothing about heat shielding stoves and other appliances. Luckily BS EN 8511:2002, and BS EN 8303:2018, have some really useful guidance.

The guidance here is ONLY for 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.

There are two methods, the first uses insulation boards and an air gap. The air gap can be open or sealed.

The second method uses a metal shield with an air gap that is open at the top and bottom and this applies **only to stoves of 7kW or less**. This allows for air flow behind the board which carries heat away from the gap keeping the wall behind cool.

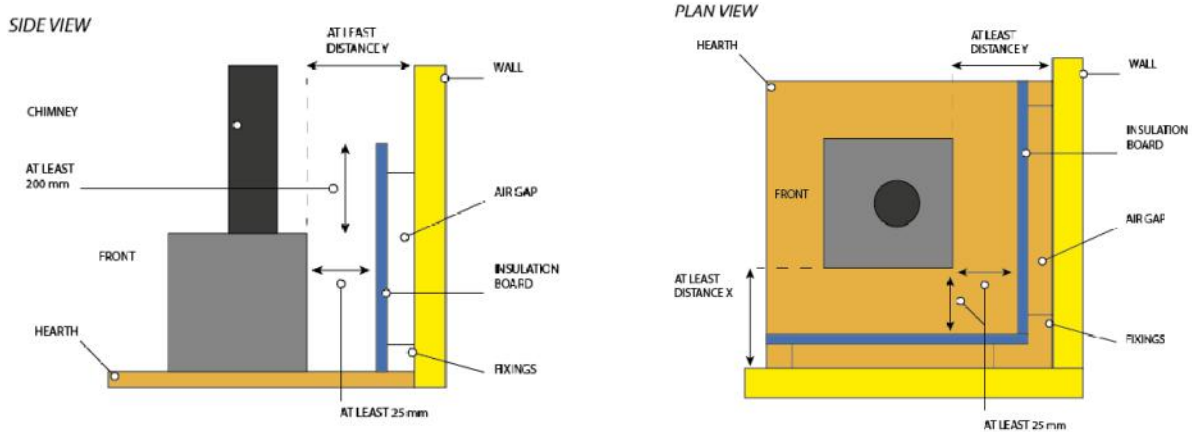
1. Method 1: using insulation board

i. Method 1 requirements:

- A suitable non-combustible board is attached to the walls to the rear and sides.
- A minimum air gap is maintained behind the board.
- 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 appliance.
- Fixings should be at the edges and non combustible. Bear in mind that you may get heat transfer through metal fixings – in which case make the board wider than required and then only place the fixings at the edges.
- Spacers should be non combustible.
- 25mm Thermalux sheets are an ideal material to use, use the middle row (thermal conductivity of no more than 0.18 W/m-K) from the tables.

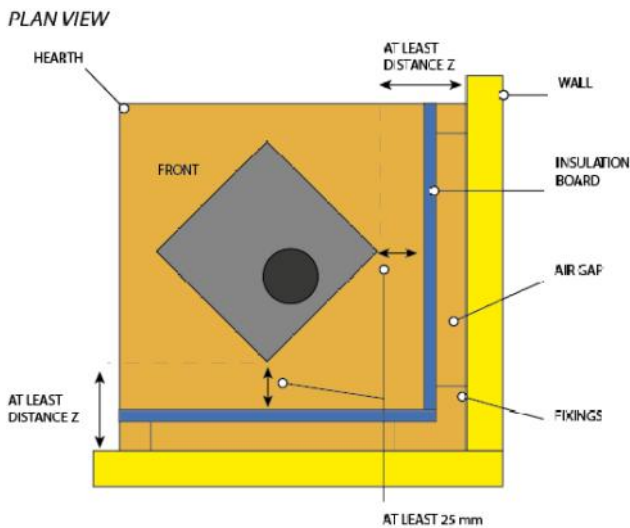
The relevant distances and measurements are shown in the following table and 3 diagrams. First I show what to do where the stove is flat to the rear wall or at no more than 30° angle to it, then what to do where the stove is at an angle to wall greater than 30°.

Method 1: Where the stove is parallel, or no more than 30° to the wall



INSULATION BOARD		MINIMUM AIR GAP	MINIMUM DISTANCE BETWEEN APPLIANCE BODY AND COMBUSTIBLE SURROUNDING STRUCTURE IN mm	
THERMAL CONDUCTIVITY W/m-K	MINIMUM THICKNESS Mm	mm	TO THE SIDES X	TO THE REAR Y
No more than 0.286	6	34	110	120
No more than 0.18	25	20	110	120

Method 1: Where the stove is at an angle of more than 30° to the wall



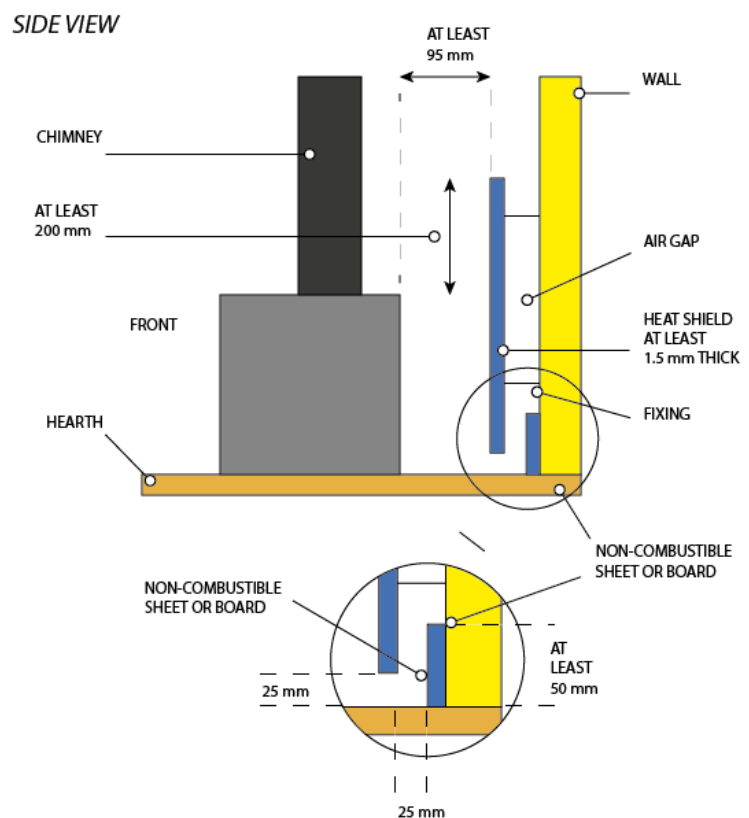
Thermalux insulation sheets are ideal for heat shielding. Treat them as if they have a thermal conductivity of no more than 0.18 – so pick the middle row in the tables shown.

INSULATION BOARD		MINIMUM AIR GAP	MINIMUM DISTANCE BETWEEN APPLIANCE BODY AND COMBUSTIBLE SURROUNDING STRUCTURE IN mm
THERMAL CONDUCTIVITY W/m-K	MINIMUM THICKNESS Mm	mm	SIDES AND REAR Z
No more than 0.286	6	34	70

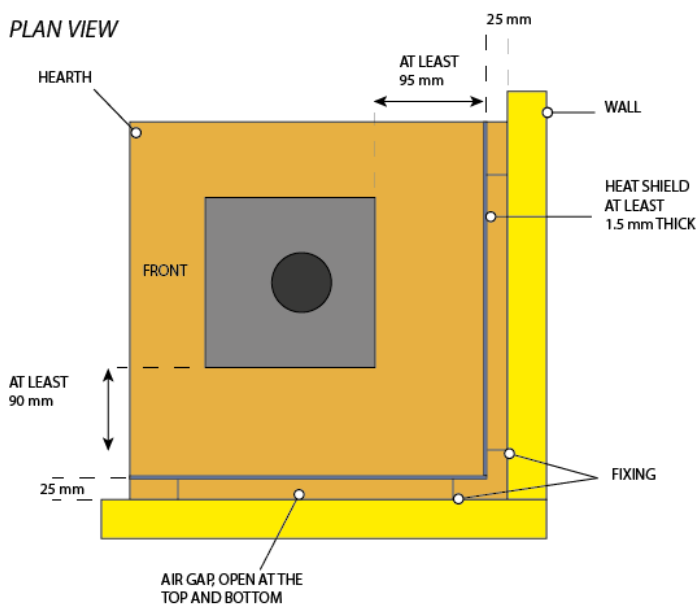
2. Method 2: using a metal shield

i. Method 2 requirements:

- ONLY for stoves of 7kW or less.
- A metal shield at least 1.5 mm thick is attached to the walls to the rear and sides.
- A minimum air gap of 25mm is maintained behind the sheet.
- An additional strip of either the metal shield or another suitable non combustible sheet should be fixed to the base of the wall and be at least 50mm high. This should be fixed at the edges using non-combustible fixings. If a glue is used it should be suitable for high temperatures up to 150° and not emit harmful fumes when hot.
- Whatever this strip is made of, the gap between the strip and the back of the heat shield must be maintained at 25mm.
- The board is raised up off the hearth by 25mm and is open at the top. The flow of air behind the sheet should be unobstructed – nothing, like a shelf, should be in the way above the sheet.
- The main heat shield has to extend at least as wide as the hearth, and at least 200mm above the appliance.
- Fixings should be at the edges and non combustible.
- Spacers should be non combustible.
- A suitable decorative finish, like tiles, can be applied to the heat shield as long as the minimum distances are maintained between the stove and the outer surface of the decorative finish.

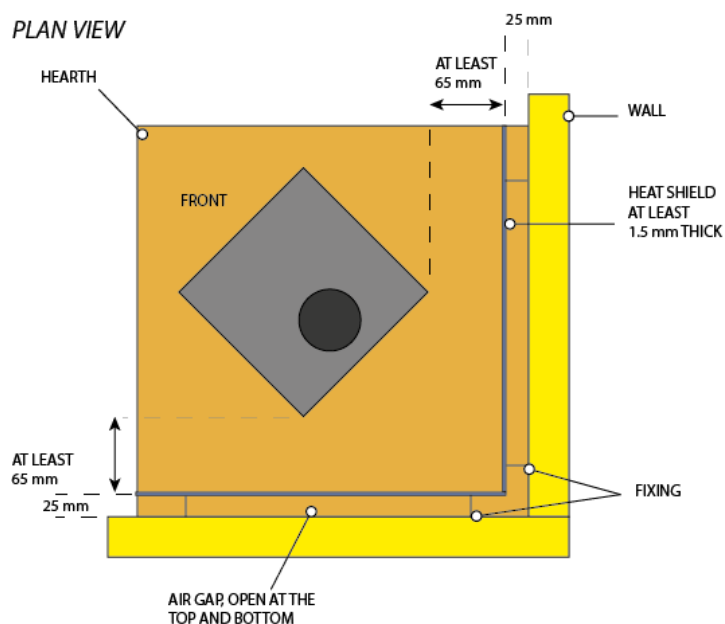


Method 2: Where the stove is parallel, or no more than 30° to the wall



Where the stove is parallel (or at no more than 30°) to the wall a gap of 90mm to the sides, and 95mm to the back should be maintained between the stove and heat shield.

Method 2: Where the stove is at an angle of more than 30° to the wall



Where the stove is at an angle of more than 30° to the wall a gap of at least 65mm should be maintained from the back corners of the stove to the sides and back heat shields.