Buying & Installation Guide

Choosing the right stove, cooker or boiler

Heating Power:
All modern heating appliances are rated in Kilowatts (KW). This is a measure of the heat energy they produce, in most cases this is the maximum achievable, in the same way as the MPG's given for new cars. You need to work out the number of KWs a room or space requires to heat and then look for an appliance which is suitable to keep the space at a comfortable temperature.

There is a view that you simply take the metric volume (M^3) of the room or building you want to heat and divide it by 14 to get the number of KW required by a heater. We have found and believe that this is a little crude and if applied rigidly often under estimates the KW requirement.

To try and quantify your requirements into a heat output there are a number of factors we think you should consider, none of which are overly complicated. To start with you need to ask yourself a few questions.

For Stove or Cooker which DOES NOT have a boiler.

1. What do I want from my new stove or cooker?
    A. Mainly a homely look and feel, heating second
    B. Heating the room only, doors closed to other rooms.
    C. Heating surrounding rooms as well by having internal doors open when possible.

2. How well insulated is the room / home? (there is a more detailed guide below to help)?
    A. Very Good: Modern House
    B. Good: Renovated Art Deco Home
    C. Poor: Victorian Farm House
    D. Very Poor: Crofters Cottage

3. How large is the room?

Measure the average width, length and height of the room in metres or feet.

To start working out what appliance is best suited in terms of heat output you will need to start with your answers to question 3.

Multiply the three values

For example:

Metres	3.7m width x 4.9m length x 2.4m height	= 43.5 cubic metres
Feet	12'-0" width x 16'-0" length x 8'-0" height	= 1536 cubic feet

To convert from cubic feet to cubic metres, divide the number of cubic feet by 35.3

1536/35.3 = 43.5 M^3

Now you will need to review your answers to questions 1 and 2. If both answers are A then you will need a smaller output, if both answers are C then you will need a larger output. To try and quantify this we have put together a handy table below:

Example Room

Question 1: B (room only heating)

Question 2: C (solid walled)

Look up value from table = 9 >>

Required output = volume (m^3) / look up value

Calculation: 43.5/9 = **4.8KW**

Question 1	Question 2	Lookup Value
A	A	**20**
A	B	**18**
A	C	**14**
A	D	**9**
B	A	**18**
B	B	**14**
B	C	**9**
B	D	**5**
C	A	**14**
C	B	**9**
C	C	**5**
C	D	**3**

So now you should have a value for the amount of heat output in KWs for your new appliance. It is unlikely that the figure will match exactly that of a stove or cooker so we would suggest that you round it up to the nearest whole number and look at appliances with this capacity or up to 30% more.

Why round up? As with a car you will not consistently get the maximum MPG or KW output that the manufacture claims, so allow for a bit more.

Therefore for our example room we would round up the calculated value (4.8) to give a required range
Of between **5 - 7KW**

For a Stove, or Cooker with a boiler or a Freestanding Boiler

1. Will this be the only source of heat in the house?
   A. Yes
   B. No, we have another boiler or solar heat which will not be run at the same time.
   C. No, we have another boiler or solar heat that we will run at the same time.
   D. No, we will use another room heater, i.e. an Aga or stove in one or more rooms.

2. How well insulated is the room/home?
   A. Very Good: Modern House
   B. Good: Renovated Art Deco Home
   C. Poorly: Victorian House
   D. Very Poor: Crofters cottage

3. How large is the building?
   Measure the size of all rooms and hallways, width, length and height in metres.

To start working out what appliance is best suited in terms of heat output you will need to start with your answers to question 3.

If your house has two or more floors just use the volume of the ground floor and multiply by the number of floors

Example House – 2 Floors

Ground Floor

Hall	1.8m width x 6.1m length x 2.4m height	= 26.4M^3 (960 cubic feet)
Kitchen	3.7m width x 6.1m length x 2.4m height	= 54.2M^3 (1920 cubic feet)
Sitting Room	3.7m width x 4.9m length x 2.4m height	= 43.5M^3 (1536 cubic feet)
Cloakroom	1.2m width x 3.7m length x 2.4m height	= 10.7M^3 (384 cubic feet)
Ground Floor Total:		= 134.8M^3 (4800 cubic feet)
House Total:		**= 269.6M^3 (9600 cubic feet)**

Now you need to look at your answer for question 2 and apply the following factor:

Example House , Victorian with solid wall

Look up value from table = 9 >>

Question 2	Lookup Value
A	**18**
B	**14**
C	**9**
D	**5**

Then using the answers for both questions 2 and 3 calculate the total KW of heat required by dividing answer 3 by answer 2

Example House

Question 2: Insulation C = 9

Question 3: Volume 269.6M^3

Calculation: 269.6 / 9 = 29.96KW

You should now have a value for the amount of heat in KW you need. If you wish to heat water as well add 1KW per cylinder. You now need to look at your answer for question 1, this will determine how many KW you need from a boiler.
Answers A or B mean that the boiler will need to provide all of the heating to the house.

For B this is not all of the time, but when it's running you will expect it to be on its own.

For answer C you will need to make an assumption on how much heat each source will produce and hence make a subtraction from the total.

For answer D you will need to either subtract the know KW value of the appliance or make an assumption based on if it heats the room it's in or more if and then deduct these rooms from the total KW required.

Example House

29.96KW heating requirement + 1 KW for a single hot water cylinder = **31KW Total Heat Requirement**

Question 1 = D: there is a stove in one room producing 7KW

Therefore Boiler heat output required: 31KW -7KW = 254W

In this example you should look at a heating appliance with boiler producing between 24 – 32KW.

Insulation Guide

Level Of Insulation	Factors				Example of House
	Floor	Walls	Windows	Roof / Loft	
Very Good	Insulated floor	Insulated cavity wall 2 or less external walls	Double glazed or better	Thick insulation	House built in the last 5 years
Good	Raised wooden or insulated solid floor	Cavity wall or secondary fit insulation, 2 or less external walls	Double glazed	Thick insulation	Renovated Art Deco House
Poorly insulated	Solid floor, wood or carpet	Solid 2 or less external walls	Single or secondary double glazing	Some insulation	Victorian Farm House
Very Poor	Solid stone or tile	Solid more than 2 external walls	Single glazed some gaps	No insulation	Crofters cottage

Conversion Tables:

Feet	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Metres	0.3	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.7	3.1	3.4	3.7	4.0	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6

BTU	3,415	17,075	20,490	23,905	27,320	30,735	34,150	51,225	68,300	85,375	102,450	119,525	136,600
KW	1	5	6	7	8	9	10	15	20	25	30	35	40

10 steps to a Piping Hot Stove

We have put this document together to help you through the process of choosing and installing a stove. This document should be used in conjunction with both the manufacturer's product manual and Building Regulations documents. Any installation must be inspected and certified in compliance with the relevant Building Regulations before it is used.

1. **Measure:**

The fireplace	Allow space for air flow and cleaning access
Volume of room to be heated	Combined with insulation of the room will give the KW
Length of chimney	Best method is to use a brush and rodding kit and round up

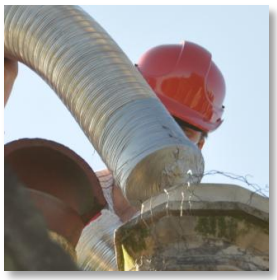
2. **Choose stove and order fitting kit**
   We will help you make sure you have everything you need.

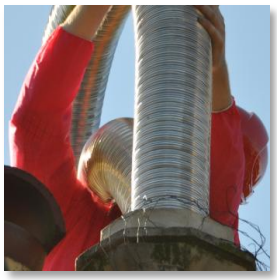
3. **Clear and Protect**
   Installing a stove can be dirty, take the time protect both yourself and the room where the appliance is being installed to minimise the mess!


4. **Clean the chimney**
   Old soot in the chimney can corrode the liner from the outside, so make sure it's clean! Sealing the fireplace opening and having only a small access area will reduce dust. Check there's only soot in the fireplace, other debris can indicate structural damage to the chimney and will need further investigation.


5. **Insert the liner**
   You can either lift or lower the liner, whichever method you use make sure the arrow points up. Fit a cone to the front of the liner and a long rope to the cone.


Fit the liner



6. Offer up the liner and cut

Remove the cone and fit the flexi liner to the rigid adapter. Use self tapping stainless steel screws, seal with fire cement, inside and out.


Move the flue inner until the adpter is at the height for the stove to fit. Then mark the top of the liner, lift out further by about a foot and cut off the excess, as you have marked. Remember measure twice, cut once.


Fit the suspending cowl. Smaller diameter clamp first


7. Close off the bottom of the chimney

Fit steel brackets to support the closure plate. Only use steel fittings, self tapping direct screws, no plastic Rawl plugs.

Measure and cut the steel plate, you will need to insulate above the plate. Seal the edges of the plate to make it air tight. To finish off, paint with heat resistant paint.

8. Fit the air vent and Carbon Monoxide alarm

An air vent ensures the stove has enough air and draws well.


CO alarm makes sure you are safe from carbon monoxide.


9. Insert the stove and install flue pipe

You will need to use fire cement to seal any joints or gaps. Wipe any excess off with a damp cloth, you're almost done!

10. Test and Certify.

Smoke test: Warm chimney, Light smoke pellet, let smoke fill the flue pipe, Close top of flue to stop smoke escaping, check for smoke leaks at the bottom and top of the installation. Fix all leaks.

Sit back, enjoy