Boiler sizing worksheet

Assess the dwelling shape

A. Simple rectangular dwelling
Use worksheet alone.

B. Extension and loft conversions
Use worksheet and add on radiators sizes in section 7.

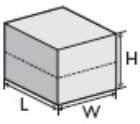
C. Non-rectangular dwelling
Divide into sections and repeat calculations.

1. Take three measurements (in metres)

Length ____ Room height ____

Width ____ Number of floors ____

2. Calculate TOTAL external wall area



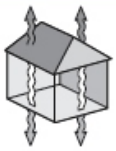
(Width ____ X No of ext walls ____ =) + (Length ____ X No of ext walls ____ =) = ____ X Room height ____ X No of floors ____ = Total ext. wall area m² ____ A

3. Calculate wall and window heat losses

Total ext. wall area A X Table 1 ____ = Window area ____ X Table 2 ____ = ____ A Window heat loss

Total ext. wall area A - Window area ____ = Wall area ____ X Table 3 ____ = ____ B Wall heat loss

4. Calculate floor and roof heat losses



Length ____ X Width ____ = Roof area ____ X Table 4 ____ = ____ C Roof heat loss

Length ____ X Width ____ = Floor area F X 0.7 = ____ D Floor heat loss

5. Add up fabric heat losses

A + B + C + D = ____ X Table 5 ____ = ____ E Total fabric heat loss (W)

6. Calculate ventilation heat loss

Floor area F X Room height ____ X No of floors ____ = Volume ____ X 0.25 X Table 5 ____ = ____ F

Ventilation heat loss (W)

7. Calculate boiler output (in kW)

E + F = ____ + Water heating (W) 2000 = ____ + Add in any extension ____ = Divide by 1000 to get kW ____ **BOILER OUTPUT**

From separate worksheet or radiators sizes

Worksheet _____

Date _____

Sheet _____ of _____

Name _____

Address _____

_____

_____

Type of dwelling _____

Table 1 Window Factors

Detached	0.17
Semi-detached	0.2
Mid terrace	0.25
Flat	0.25

Table 2 Window U-Values

Double glazed wood/plastic	3.0
Double glazed metal frames	4.2
Single glazed wood/plastic	4.7
Single glazed metal frames	5.8

Table 3 Wall U-Values

Filled cavity wall	0.45
Unfilled cavity wall	1.6
Solid wall 220 mm	2.1

Table 4 Roof U-Values

Pitched < 50 mm insul.	2.6
Pitched 50-75 mm insul.	0.99
Pitched > 75 mm insul.	0.44
Flat uninsulated	2.0
Flat 50 mm insul.	0.54

Table 5 Location Factors

North & Midlands	29
Northern Ireland	26.5
Scotland	28.5
South East & Wales	27
South West	25