

## Thinking of Installing a Wood Pellet Boiler?

Here are some important points you should consider.

- ▶ Capacity of boiler
- ▶ Space required
- ▶ Wood pellet store
- ▶ Vehicle access

This design guide presents only the "rules of thumb" figures. You must consult with your boiler manufacturer for actual figures



### 1. Capacity of Boiler

#### 1.1 Approximate Capacity of Boiler For Your Property.

To work out the approximate capacity of wood pellet boiler for your property you can use the equation below.

Floor Space (m<sup>2</sup>) ÷ 30 (Well insulated property) = Boiler size (kW)

Floor Space (m<sup>2</sup>) ÷ 10 (Poorly insulated property) = Boiler size (kW)

**Example: Boiler for a newly built 4 bedroom home**  
Floor space 288m<sup>2</sup> ÷ 30 ≅ 10 kW Boiler

### 2. Space Required

#### 2.1 Typical Floor Space Required for a Pellet Boiler.

For boiler up to 100 kW, the typical floor space required is approximately 2m x 2.5m.

#### 2.2 Installing a Flue

You will need to install a flue for your pellet boiler. This flue must conform to standard regulations, you should contact your local environmental health officer for approval. Consideration should be given to the location and height of the flue and the direction of the prevailing wind.

#### 2.3 Routine Maintenance

Ash will need to be removed from your boiler on a regular basis, and this is a factor that should be considered when you are planning to install your wood pellet boiler as suitable access will be required.

**1 Tonne of pellets = 5-20kg of ash (depending on the quality of the pellets)**

### 3. Wood pellet store

#### 3.1 Size

Please use the equation below to work out the minimum size of wood pellet store you will require. You should store enough pellets to last you at least a month and a half of heat.

Boiler Capacity (kW) ÷ 5 = size of fuel store in m<sup>3</sup>

Conversion to Tonnes = m<sup>3</sup> x bulk density t/m<sup>3</sup>

**Example: Minimum store size for a 10 kW Boiler**  
10 kW ÷ 5 = 2m<sup>3</sup> size of store  
Conversion to tonnes  
2 x 0.6 = 1.2 tonnes

**Wood pellet info**  
Bulk Density – 0.6t/m<sup>3</sup>  
Energy Density – 4.7 kWh/t

Please note a small blown delivery works out more expensive per tonne of pellets, as the delivery charge is the same for 1 tonne or 10 tonnes. Therefore we would recommend you maximise your store where possible.

## 3.2 Design

Pellets can be stored in a variety of ways depending on the requirements and restrictions of the site. Here are some important points you should consider to help you find the right store for your requirements:

- ▶ Your pellet store should not be ventilated, as pellets can absorb air humidity.
- ▶ You should have external access to your store, including practical means for removing pellets.
- ▶ Make sure you have a safe and practicable way of pouring bagged pellets in the store, even if the store is designed for bulk delivery.
- ▶ We recommend your pellet store is on the ground floor with easy vehicle access.

If receiving bulk deliveries you should also consider:

- ▶ Installing an impact protection mat to reduce the degradation of the pellets during delivery.
- ▶ Install Storz 110A inlet and exhaust points with caps.
- ▶ The inlet and exhaust should be no higher than 1.5m unless you install a secure platform.
- ▶ Bends in the pipe work should be minimal and should have at least 500mm radius.
- ▶ Installation of vertical pipes should be minimised; due to the greater delivery pressure required, which causes degradation of the pellets.

## 4 Vehicle Access

### 4.1 Bagged or Bulk?

When designing your wood pellet installation you must consider how you will receive your pellets.

Will you be taking a bagged or a bulk (blown) delivery? Both types of deliveries have important points that should be considered.

**Bagged delivery** – minimum delivery is one pallet which is approximately 1 tonne in weight (80 to 100 bags). The bags are delivered by a 3rd party haulier and delivery is classed as a kerbside (delivery made to the kerb at the end of your driveway)

**Bulk (blown) delivery** – Pellets are blown directly into the pellet store from a pneumatic tanker along a flexible hose. The maximum distance recommended from:

- a) The tanker to your store is 15m,
- b) The tanker to the flange is 7.5m

Up to 30m can be accommodated but the longer the distance the greater the degradation that will occur.

### 4.2 Vehicle dimensions

**Minimum Clearance:**

Width	4m
Height	5m
Length	12m
Wall to wall turning circle	20m

**Vehicle weights**

Payload	16 tonnes
Gross vehicle weight GVW	26 tonnes

If your installation does not comply with our recommendations, we may not be able to deliver.

