



Biomass combustion technical standards

The technical standards that relate to the combustion of biomass fuel in New Zealand are in many ways driven by safety and the aim to reduce emissions to air and meet the aims of the [National Environmental Standard for Air Quality](#).

Standards that fit with these aims include the following:

Boiler system scoping and conceptual design

[SNZ PAS 5311:2001 Biomass boiler systems for small and medium heat loads](#) provides best practice guidance to support the adoption of low-emission biomass boiler systems in commercial, institutional, and industrial heat applications.

This PAS provides advice and information on biomass boiler systems for small to medium heat loads (50 kW to 2 MW) providing hot water below 100°C. Within this document, a biomass boiler system is one fuelled by wood chip, wood briquettes, wood pellets, or other biomass.

The PAS provides both technical and non-technical guidance on: evaluating heat demand and energy efficiency; generic site requirements; greenhouse gas and local particulate emissions; fuel quality, supply, reception, storage, and handling; operation and maintenance; system efficiency; seasonal efficiency; regulatory and non-regulatory health and safety aspects; and consenting.

Best practice guidance

The Bioenergy Association publishes best practice Technical Guides, Information sheets and Technical Notes which are published on the website www.usewoodfuel.org.nz A full list of the publications relevant to solid biofuels are in [Information Sheet IS11b](#)

Wood Energy Knowledge Centre

The Bioenergy Association hosts the [Wood Energy Knowledge Centre](#) which is a searchable library of documents held by the association and available to members and the public.

Fuel and its use

The international (ISO) standards are overseen by the [technical committee ISO 238](#) whose scope is: Standardisation of terminology, specifications and classes, quality assurance, sampling and sample preparation, and test methods and safety aspects in the field of raw and processed materials originating from arboriculture, agriculture, aquaculture, horticulture and forestry to be used as a source for solid biofuels.

The current international standards for solid biofuels are set out in Technical Note [TNSB32](#).

Equipment design and construction

- **Residential Use Scale: *Approved Equipment/Appliances*** - The Ministry for the Environment has tested and developed a list of approved wood burners. The emissions associated with these burners are significantly lower relative to older burners and open fires. Access the list and further details [here](#).

It's worth noting that even with a high-quality appliance, poor quality fuel will lead to poor quality emissions.

- **Commercial/Industrial Use Scale:**

Boiler safety - [Approved Code of Practice - Design, safe operation, maintenance and servicing of boilers](#)

Air Quality Thresholds – At the larger end of the equipment scale, approvals are related to emissions but in the form of a consent.

Equipment Tuning – While there are no standards for equipment tuning (rather there is a Guideline), the aims of the guide are in part to unify the standard to which boilers are tuned.

Find out more [here](#).

- **Fuel Quality Standards:** There are industry developed and led standards - the Bioenergy Association's Solid Biofuel Classification Guidelines set out the characteristics that wood fuel users should seek out when buying fuel. For a SAMPLE copy of these guidelines see [here](#).
- **Technical Standards:** The Bioenergy Association Executive Officer is on the joint New Zealand / Australian Standards Committee for residential heating so if you have technical matters relating to standards contact him on executive@bioenergy.org.nz
- **Installer Training / Approval Standards:** While there are no specific installations standards, large scale equipment suppliers will generally be trained by the product developer on how to install the kit.

At the residential level installers are also able to undertake installation courses and become approved, for example, [BANZ Wood Pellet Heater Installer Course and the Wood Pellet Boiler Operation Course](#).