

Security: checks and maintenance, legal obligations

The control and maintenance of appliances and systems fueled by solid fuel is required by art. 8 of DM 37/2008 and only for thermal plants also by art. 7 of DPR 74/2013.

The person in charge (coinciding in domestic installations with the occupant) must observe the instructions defined by the installer and/or maintenance technician based on specific technical standards and the instructions of the manufacturer of the various components of the system.

These terms regarding heating systems must be reported in the installation booklet, in a specific document in all other cases.

Who can check and maintain the systems?

The maintenance operations must be entrusted to qualified companies registered with the Chamber of Commerce, the only ones which at the end of the intervention can release the paper control report to be attached to the installation booklet, if contemplated, and which provide to the recording of the data in the regional regional electronic cadastre CIRCE.

Checks and documents, which are the most important ones?

The evaluation of the installation room suitability's for the appliances, the verification of the functionality of the vent and the smoke system reduce the risk of carbon monoxide poisoning and of fire.

The fundamental document for each installation is the declaration of compliance with the rule of the art (DM 37/2008), released in the case of new installation or modification of a system by the installer. In case of heating systems, the installer also provides for the registration of the system in the regional telematic cadastre CIRCE.

RELY ON YOUR INSTALLER OR MAINTENANCE MANAGER

A proper combustion has the following benefits:

- ✓ **fuel savings** (reduces waste by up to 10%)
- ✓ **reduction of carbon monoxide formation:** which can put people's lives at risk
- ✓ **increase in the duration of the installation:** the reduction of the content of unburnt substances in the fumes limits the corrosion inside the chimney and of the boiler.
- ✓ **reduction of pollutants and carbon dioxide emitted into the atmosphere** (about 2 quintals less per year for an average family), contributing to the improvement of local air quality and limiting the global warming of the planet.

Remember also that under the "Nuovo Accordo di Bacino Padano" there are restrictions on the use of these types of systems:

From 09/12/2017

- ban on installing generators with an emissive performance class lower than 3 stars *
- ban on using generators with an emissive performance class lower than 2 stars*

From 31/12/2019

- ban on installing generators with an emissive performance class lower than 4 stars
- ban on using generators with an emissive performance class lower than 3 stars*

*according to the D.M. 186/2017

upon reaching the first alert level*

ban on using domestic biomass wood generators (in the presence of an alternative heating system) with energy and emissive performances that do not respect the values foreseen at least for the 3 star class.

upon reaching the second alert level**

ban on using domestic biomass wood generators (in the presence of an alternative heating system) with energy and emissive performances that do not respect the values foreseen at least for the 4 star class.

*4 consecutive days of touching the limit of 50 micrograms per cubic meter of PM10's concentration.

**10 consecutive days of touching the limit value.

The safety of domestic wood pellet and cippato installations

Indications for a correct use of thermal power installations not exceeding 35 kW

"Open" and "closed" fireplace appliances

A solid fuel powered appliance is:

an "open fireplace" if it is not provided with a device for closing space where the combustion develops.

a "closed fireplace" if the space where the combustion develops is closed compared to the environment where the appliance is installed. It can be sealed compartment if it draws the combustion air from an external environment compared to the installation room through an intake duct: it is therefore less dangerous.

Both these types of appliances, if not sealed compartment, use and consume the oxygen in the room where they are installed. This is why the room must always be equipped with a ventilation system that guarantees the exchange of air. They also discharge the fumes outside through a chimney, which must be of certain efficiency to avoid their return to the environment. Direct wall discharge is prohibited: combustion products must be discharged via the roof.

Can these appliances be installed in any room?

NO! "Open" or "closed" fireplace appliances, not sealed compartment, must **NEVER** be installed in rooms with volumes less than 15m³, **in bathrooms, in bedrooms** (or in studios), **in garages** or in any room where dangerous operating conditions can occur. They are also prohibited in rooms where there are other open-chamber appliances; if the other is a gas appliance, the prohibition also applies to connected rooms.

Room ventilation how is it done?

The easiest system to guarantee constant air exchange in rooms where there is a non-sealed compartment appliance is a hole in the wall. The hole must never be obstructed (open windows are not valid) and with a proper section to the characteristics of the appliance, it must be protected by grids and positioned on an external wall, never on condominium stairwells or other rooms for common use. Alternatively, and according to precise indications of the technical standards, it is possible to use adjacent rooms connected to an external wall. It is forbidden to take the combustion air from impound lots, bathrooms and bedrooms.

The smoke duct (connection to the chimney): is it necessary just a simple flexible pipe?



NO! Being a fundamental part of the system that carries fumes also containing harmful substances outside the room, it must have suitable characteristics, to lead them at the chimney, contributing to its "draught";

It is necessary that:

- ✓ diameter, changes in direction, joints and length respect precise indications
- ✓ it is well implanted and free from cracks
- ✓ it is positioned away from flammable materials, is insulated in the event of passage through living rooms or unheated rooms or if it is outdoor,
- ✓ the material complies with EC regulations, suitable for fuel systems.

The UNI 10683 standard is the reference for this type of solid fuel systems and provides indications for their safe use.

The monoxide: is it possible to limit the risk?

Carbon monoxide is the most dangerous substance that develops during non-optimal combustion. Odorless and colorless gas, is highly dangerous even in very low concentrations if breathed for long periods of time; immediately fatal if significant amounts are present.

The maintenance of the appliance, the proper ventilation of the rooms and the good draught of the chimney are essential to avoid a bad combustion and the formation of carbon monoxide.

How to avoid the risk of fire

These systems are characterized by very high operating temperatures, so it is easy to start a fire from contact with the surfaces of the system, if certain precautions are not taken.

It is necessary to:

- ✓ use materials that are certified for reaction to fire
- ✓ verify compliance with certain safety distances from combustible materials (walls, floors, carpets, curtains, furniture, sofas, etc.) using, if occurred, additional protection systems.
- ✓ have chimney maintenance performed regularly by qualified staff, because deposits of combustion residues inside the chimney can catch fire if not removed periodically.
- ✓ check that the adjacent and lateral walls where the system is located are made of non-combustible material.
- ✓ have the smoke duct and the flue insulated performed, where necessary.
- ✓ use only certified pellet compliant to class A1 of the UNI EN ISO 17225-2 or dry natural wood and NEVER garbage (plastic, packaging, polystyrene, treated wood, newspapers)