

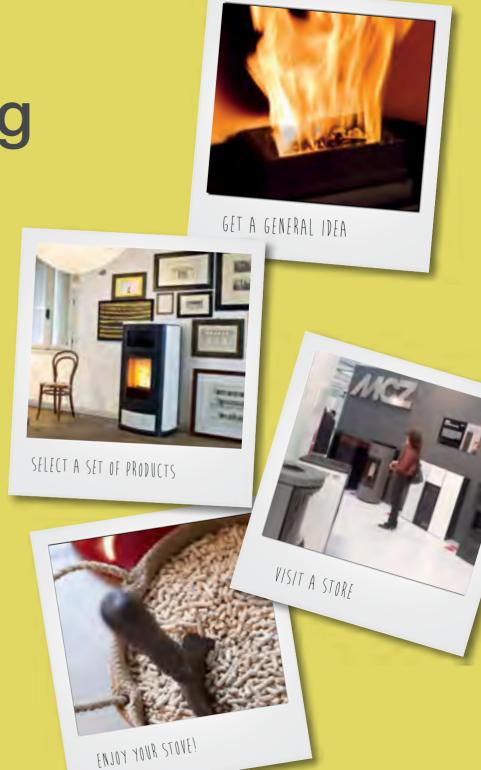
Are you thinking about buying a pellet stove?

Good!

THE PELLET STOVE IS ONE OF THE BEST ENVIRONMENTALLY-FRIENDLY ALTERNATIVES YOU COULD CHOOSE TO HEAT YOUR HOME AS WELL AS TO SAVE ON BILLS.

TO HELP YOU CHOOSE THE RIGHT PRODUCT AND GUIDE YOU THROUGH THE WIDE RANGE OF OFFERS AVAILABLE ON THE MARKET, HERE IS A 4 POINT GUIDE.

FROM A GENERAL OVERVIEW TO VISITING THE STORE, WE WILL HELP YOU CONSIDER ALL THE ASPECTS YOU NEED TO WEIGH UP TO MAKE AN INFORMED CHOICE.



Here are the steps to follow.

STEP 1

GET A GENERAL IDEA

- HOW MANY ROOMS DO YOU WANT TO HEAT?
 Think about the space that your stove will be heating.
- HOW POWERFUL DOES
 THE STOVE NEED TO BE?
 Calculate how much heat
 you need.
- IS THERE A FLUE?
 Remember that you will need a flue anyway.
- WHERE ARE YOU GOING
 TO PUT THE STOVE?
 A few things to remember
 when choosing the best
 location.

STEP 2

SELECT A SET OF PRODUCTS

WHAT IS THERMAL POWER?

Evaluate the products based on how much heat they produce.

HOW DO THE PRODUCTS PERFORM?

Evaluate products based on how much heat they generate from the pellets.

- WHAT ARE EMISSIONS?
 Choose modern products,
 with low levels of emissions.
- WHAT ARE THE MAIN
 CERTIFICATIONS?
 Consider certified products
 to ensure their quality.

STEP 3

VISIT A STORE

- IS IT EASY TO USE?

 Test how easy the product is to use.
- HOW DOES IT WORK?

 Look at the flame it produces. And how quiet is the fan.
- ASK FOR A DETAILED SURVEY.

Contact an expert to assess all the technical aspects and to ensure perfect installation.

STEP 4

ENJOY YOUR STOVE!

- WHAT KIND OF PELLET SHOULD YOU USE?
 You should select quality pellets because they give better product performance.
- WHAT DO YOU HAVE TO DO? Routine maintenance is simple and quick.
- WHAT DOES A
 TECHNICIAN HAVE TO DO?
 Contact him for yearly
 maintenance.



Have a general idea

IRST OF ALL, ASK YOURSELF, WHAT DO YOU WANT TO HEAT WITH YOUR STOVE. SOME KEY ASPECTS NEED TO BE CONSIDERED.

- _ HOW many rooms do you want to heat HOW powerful does the stove need to be
- _ Is there a flue already
- WHERE do you want to put the stove

How many rooms do you want to heat?

WITH A STOVE YOU
CAN ALSO HEAT THE
WATER FOR A SHOWER (hydro stove
with domestic water
supply kit coupled
with a storage system)







_NATURAL CONVECTION STOVE.

The heated body of the stove radiates heat, slowly warming the surrounding environment, with less dust and less noise.



_FORCED VENTILATION STOVE.

The heat is pushed outwards by a fan and the hot air spreads very quickly, reaching quite a distance.



_DUCTED AIR STOVE WITH FORCED VENTILATION.

it distributes hot air through pipes in the wall and diffusers.



HYDRO STOVES.

 These are integrated with the existing heating system, heating the water for the radiators or the underfloor heating system.



_HYDRO STOVE WITH FORCED VENTILATION.

Heats the room with a fan and can heat, even simultaneously, the water for the radiators or the underfloor heating system.

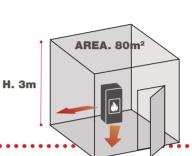
How powerful should the stove be?

To understand how powerful the stove should be, you need to calculate how much heat you need (your "calorific needs"). This depends on:

WOULD YOU LIKE A
PRACTICAL EXAMPLE TO
CALCULATE THE POWER OF
YOUR STOVE? YOU CAN
FIND IT AT THE END OF
THIS GUIDE, IN THE 'MORE
INFORMATION' SECTION.

THE VOLUME, OR HOW MUCH SPACE, YOU NEED TO HEAT

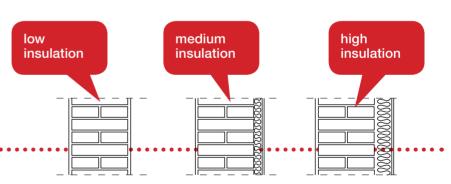
Obviously the larger the room, the more powerful the stove needs to be.



volume 240 m³

HOW WELL INSULATED YOUR HOME IS

If the house is well insulated, you won't need a lot of power to heat it.



WHERE YOUR HOME IS

Lakes or streams may increase heat loss

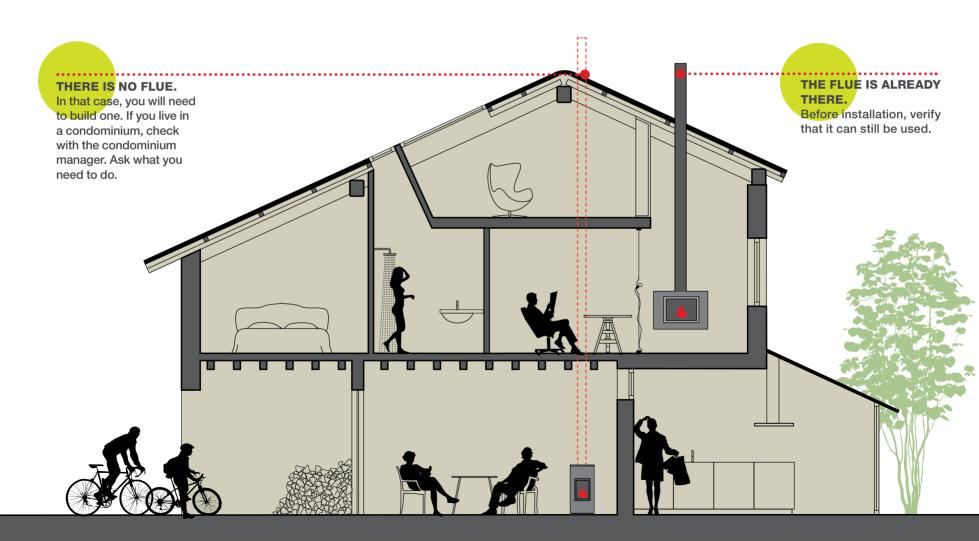






Do you have a flue?

If you plan on installing a stove, you have to take into account that a flue (which needs to go to the roof) is absolutely necessary. Discharging smoke directly through the wall, without a flue, is not recommended by any manufacturer: it affects the proper functioning of the stove, whether pellet or wood. In many countries, such as Italy and Germany, this type of installation is also prohibited by law.



Where do you want to put the stove

At least 5 cm away from wall

At least 12 cm diameter of air inlet

Just a few simple steps to choose the right location.

The air inlet is needed to ensure good oxygenation in the room. If this is a **SEALED** stove, fresh air for combustion is drawn from outside and the air inlet is no longer needed.

Minimum room volume 30 m³

NOT near curtains

Electrical socket close by

TUBE



Select a set of products

OW THAT YOU HAVE DEFINED YOUR NEEDS, YOU ARE READY TO COLLECT SOME MATERIAL AND SELECT SOME STOVES THAT SEEM INTERESTING. THE WEBSITES AND BROCHURES OF THE LARGEST MANUFACTURERS ARE OFTEN FILLED WITH TECHNICAL INFORMATION. WE WILL LEARN HOW TO DECIPHER IT PROPERLY.

_ WHAT is thermal power

_ WHAT is performance

WHAT are emissions

WHAT are certifications

What is thermal power?

The useful thermal power is a value expressed in kW (kilowatts) and indicates the heat generated from the stove and transferred to the environment. It may seem trivial but don't automatically think that a stove with the highest thermal power is the best. Everything depends on the space that the stove needs to heat.





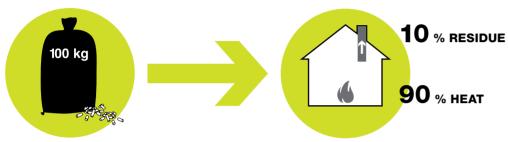
FROM 6 TO 11-12 KW, CAN HEAT FROM 140 TO 280 M³

HYDRO STOVES

FROM 12 TO 24 KW, CAN HEAT FROM 285 TO 580 M³

What is performance?

This is a value expressed as a percentage and indicates how much heat generated by combustion can be effectively dissipated. To understand this better, a stove with a performance of 90% uses 90 of the 100 kg of pellets burned for heating.



The performance lets you understand how much you can really save with the pellets. The best wood-burning products are unlikely to exceed a performance of 80% while the highest performing pellet stoves on the market now reach 90%. THIS MEANS THAT, WITH THE SAME AMOUNT OF FUEL, YOU GET MUCH MORE HEAT WITH PELLETS THAN YOU DO WITH WOOD.

What are emissions?

All combustion processes produce pollutants, some more than others. As for pellets and wood, the emissions are mainly carbon monoxide (CO) and the so-called "fine powders", associated mainly with obsolete equipment. MODERN STOVES AND FIREPLACES, ON THE OTHER HAND, HAVE PARTICULARLY LOW LEVELS OF EMISSIONS BECAUSE THEY GUARANTEE AS COMPLETE A COMBUSTION PROCESS AS POSSIBLE. The pellet fuel is said to be "green" because its CO2 impact is zero: the carbon dioxide emitted is equal to that absorbed by the system.

What are certifications for stoves?

The data sheets, that come with the product, will contain a series of stamps or marks that indicate the quality certificates awarded to the product. IN GENERAL, PRODUCTS THAT HAVE MORE THAN ONE CERTIFICATE OFFER GREATER QUALITY ASSURANCE, because they have successfully passed the tests carried out by independent and autonomous bodies in different countries. These institutions aim to protect consumers. They ensure that the data on the label, regarding performance, efficiency and characteristics, is accurate.



The performance of a stove and the level of emissions depend very much on the quality of pellets used.

DO YOU WANT TO KNOW WHICH CERTIFICATIONS ARE MOST WIDELY USED IN EUROPE? YOU CAN FIND THEM IN THE "MORE INFORMATION" SECTION AT THE END OF THIS GUIDE.

MCZ GROUP

VISIT A STORE



Visit a store

AVE YOU MANAGED TO SELECT A SET OF STOVES THAT SEEM RIGHT FOR YOU? NOW YOU NEED TO GO TO THE STORE. HERE ARE THREE SIMPLE TIPS WHEN TRYING THE PRODUCT, TO SEE IF IT REALLY IS THE ONE FOR YOU.

_ IS it easy to use?
_ HOW does it perform?
_ ASK for an inspection

MCZ GROUP VISIT A STORE

Is it easy to use?

How are pellets loaded?
Is the door easy and convenient to open? Are pellets loaded easily, straight from the bag or is a pallet needed?

How do you program the stove to automatically switch itself on and off? From the display, with a remote control or is there some other way? Does it sound easy and intuitive? Can you turn on or program the stove remotely?



PANEL



REMOTE CONTROL



SMARTPHONE



TABLET



What is the size of the pellet hopper?

Does it ensure you a fairly long operating time or do you need to load it often?

How is more frequent cleaning done? Is the airtight door easy to open and clean? Can the brazier and the ash pan be removed easily?

TRAY



MCZ GROUP VISIT A STORE

Ask for a detailed survey

Now that you have a clearer idea, it is important for you to request a visit from a specialised technician. Only a technician can confirm that the right conditions exist to ensure perfect installation and proper operation of the product. There are some aspects that would be difficult for you to evaluate alone, such as the effective calorific needs of your home and the most suitable path for ducts. Sometimes, a dealer can arrange for a staff member to perform the technical inspection. In other cases, the dealer will provide you with the name of an outside professional to contact.

The stove that you choose must be installed by an expert installer, and better still if they come recommended by the manufacturer.

Doing it by YOURSELF is absolutely not recommended because of serious safety concerns.



MCZ GROUP ENJOY YOUR STOVE!



Enjoy your stove!

HEN USED WITH CERTIFIED
OR QUALITY PELLETS AND INSTALLED
BY QUALIFIED PERSONNEL, YOUR STOVE
WILL REQUIRE LITTLE ATTENTION,
GUARANTEEING PERFECT OPERATION
FOR MANY YEARS.

_ WHICH pellets to use

- _ WHAT to do for routine maintenance
- _ WHAT does a technician have to do

MCZ GROUP ENJOY YOUR STOVE!



What kind of pellet should I use?

First of all, do not underestimate the importance of the type of pellet used. Choosing quality pellets contributes to better performance of the stove and lower fuel consumption, both important for your wallet. Good quality pellets burn better, produce little ash and keep the brazier and glass cleaner, so maintenance is easier and faster. To make sure you buy quality pellets, choose the ones that are certified.

What do you need to do for routine maintenance

Routine maintenance consists of cleaning the ash residue from the brazier. This is important to eliminate any deposits which might obstruct the passage of air.

You can do it every day or once a week. It depends on how much residue is left by the pellets and how much use you make of your stove. Less frequently, you have to remember to clean the glass on the outside and inside to enjoy the brilliance of the flame and to clean the ash pan below the combustion chamber. Remember to clean only with the stove turned off and cold and with the plug disconnected.

What does a technician need to do?

Once you install the product, we recommend calling a technician for the so-called "FIRST IGNITION". This intervention is not mandatory, but strongly recommended and especially when installation has not been done by a qualified chimney technician or heating engineer.

At the end of the winter season, you should consult a qualified technician to perform ANNUAL MAINTENANCE.

The technician will clean the flue, check the tightness of the seals, remove all residue from inside the stove, check the smoke emission and electromechanical components.

It is always better to contact an authorised service centre recommended by the manufacturer for this type of maintenance.



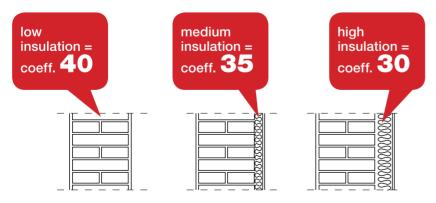
How do you calculate your calorific needs and the power of a stove?

Let's try to calculate the power that a stove needs to have to heat an apartment with medium (single-pane windows) heat insulation, located in a lowland area that is not particularly cold.

The space to be heated is about 80 square metres with a ceiling no higher than 3 metres. First, I calculate the volume of the space to be heated. Surface $80 \text{ m}^2 \text{ x}$ height $3 \text{ metres} = 240 \text{ m}^3$



To get the kilocalories that I need, I multiply the volume by a thermal coefficient, which expresses the average calories required to heat 1 m3 to 20-22°C. If the degree of home insulation is low, the coefficient is equal to 40, if medium it is 35, if high it is 30.



In this case we use 35, because the degree of insulation is medium. $240 \text{ m}^3 \times 35 = 8,400 \text{ Kcal}$

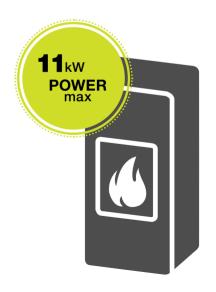
Now we have the calorific needs for our apartment. The power of a stove is expressed in kW. To convert the kcal into kW, divide the kcal by 862. So:

8,400 Kcal / 862 = 9.7 kW

9.7 kW is the power that my stove should have, but generally it is advisable to purchase a product with a power slightly greater than necessary, so the value obtained should be increased by about 15-20%. So:

9.7 kW + 15-20% = 11 kW

In this case, therefore, we need a stove with a power of about 11 kW.





Which certifications are most widely used in Europe for pellet products?

To protect air quality and comply with international agreements (see the Kyoto Protocol), many European countries legally require pellet or wood products to meet certain levels of performance and emissions.

The main certifications and European approvals, verified by independent bodies, are:



CE declaration of conformity with major European directives, which is compulsory for any product sold in Europe, and pellet stoves refer to the European standard UNI EN 14785: 2006



"FLAMME VERTE" is a quality mark valid in France which, based on emissions and performance, ranks products like hotels, with stars from 1 to 5.



VKF is an approval required in Switzerland which, being a country with a high risk of fires, has quite severe regulations for products using wood or pellets.



ART. 15A-BVG is the regulation governing the sale of combustion heat generators in Austria. The limits are among the most restrictive in Europe.



BIMSCHV, BAFA and DIBT are the main certifications required in Germany. BAFA is necessary to obtain a certain type of benefit from the Government and DiBt certifies the product's seals.



MCS is an endorsement valid in UK and allows access to benefits given to renewable sources.



How to recognise a quality pellet?

The only way to be certain of the quality of the pellet that you buy is to choose products with a quality mark. This mark guarantees that the calorific value and the ash residue fall within certain values.

The most famous marks used in Europe are:

- PELLET GOLD for pellets produced in Italy
- DIN PLUS for pellets produced in Germany
- ÖNORM for pellets produced in Austria
- NF Granulés for pellets produced in France

In 2012 the EN Plus was introduced, a single certificate at the European level. This, in addition to the chemical and physical characteristics, examines the entire supply chain, from procurement of raw materials to delivery to the end customer, including an assessment of the sustainability of production and transportation.

The result is the division of pellets into 3 categories: A1 for the best quality pellet, a second called A2 and a third marked with the letter B in which the poorest quality pellets are classified, intended for industrial use.

In addition to certificates, also make sure that:

- the pellet purchased is suitable for the thermal equipment it is meant for; the stove or boiler;
- the bag is intact;
- there is little sawdust or dust residue inside the bag;
- the pellets are not swollen or irregular (because it may indicate moisture).

The pellets should be stored in a closed space well protected from moisture. Moisture makes pellets lose a lot of their calorific value and increases the smoke emitted during combustion.

Do you want to know more about pellet stoves? Please visit yourFire, the new online magazine by MCZ Group.

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