

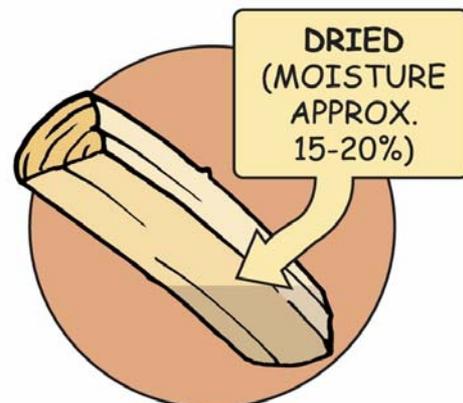
FILL UP THE WOODSHED!

Tips for storing dry firewood

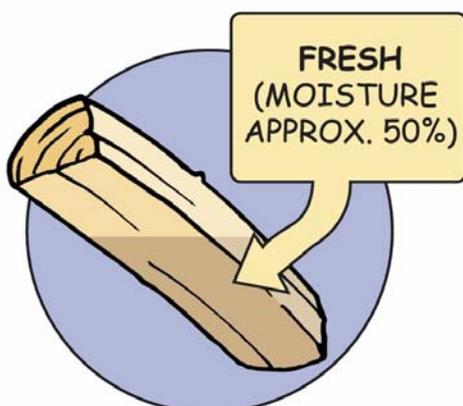


The moisture content of fresh wood is around 50%. Therefore, wood has to be dried before it can be used as firewood. Firewood is usually dried by chopping fresh wood into logs, splitting the wood in half, or cutting the wood into lengths with its bark partially intact. The ideal moisture content of firewood is 15 to 20%.

Wood that is intended for use as firewood must be properly dried before use. Dried wood that has been split into suitable sizes is easier to light; burn better, creates less emissions and provides better heat than moist wood. Close attention must be paid to fire safety regulations, occupational safety aspects and convenience when planning the storage of firewood. Storing firewood correctly will ensure that the wood stays dry while preventing rot and fungus.



Why is it important to store wood correctly?



Wood that has been dried and split into suitable sizes is easier to light than moist wood. Dry wood also burns more efficiently, produces less emissions and provides better heat than moist wood. The energy content of dry wood is greater than that of moist wood. If you burn 10 kilos of dry wood with a moisture content of 20%, two kilos of water has to be effectively evaporated, compared to four kilos if the moisture content is 40%. The energy content of 10 kilos of moist wood is 31 kWh, whereas that of dry wood is 41 kWh. Adding water to the fire does not make sense.



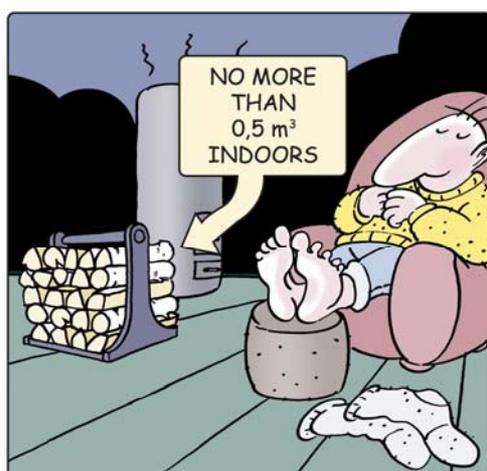
The moisture content of dry wood also varies according to the temperature and humidity of the surrounding air. The equilibrium moisture content of wood in a covered outdoor woodshed can vary between 15 and 25% depending on the season. Storing firewood correctly helps prevent the accumulation of rot and fungi. For this reason it is important to keep dried wood dry.

Where to store your firewood?

The correct way to store firewood depends on how fresh the wood is. Fresh wood should not be brought indoors. The following recommendations are for storing dried wood.

Close attention must be paid to fire safety regulations, occupational safety aspects and convenience when planning the storage of firewood.

To make using your fireplace as convenient and easy as possible, firewood should be brought inside into the warmth one day before it is burned. Humidity in the room will condense on the surface of cold wood, making it harder to light. Firewood should be stored near the fireplace in such a way that any risk of accidentally combusting is eliminated. Different safety distances are recommended for different fireplaces, and these must be adhered to.



According to fire safety regulations, a maximum of 0.5 cubic metres of firewood can be stored inside unless stored in a separate compartmentalised storage area in Finland.

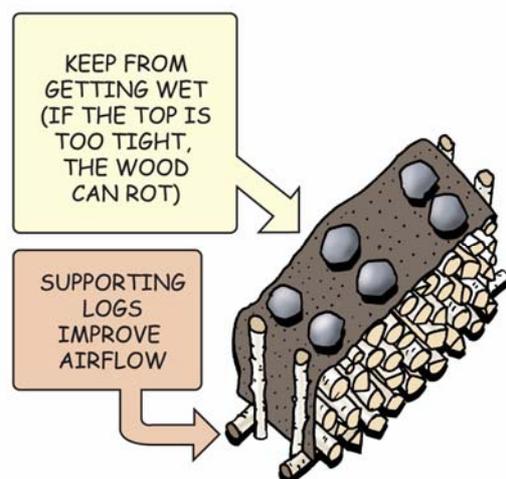
Compartmentalised storage areas inside houses include boiler rooms, car garages and fuel storage areas. In Finland these must comply with the EI30 or EI60 fire resistance ratings (according to which they must be able to resist fire for 30 or 60 minutes before spreading) according to the output of the boiler and certain structural material requirements.

A maximum of 0.5 cubic metres of firewood may be stored in boiler rooms with boilers no bigger than 30 kW in Finland.

Even if a car garage or other motor vehicle shelter is compartmentalised, motor vehicles and firewood must not be stored together in the same area at the same time.

Fuel storage areas must be compartmentalised into a separate fire compartment. The fire resistance rating for compartmentalised areas in houses is usually EI30 in Finland. The surface materials of inner walls and ceilings have their own requirements that must be adhered to. Floor materials do not have their own fire safety requirements. If a fuel storage area is situated in the basement of the building, the building material requirements are more stringent.

Outdoor woodsheds also have their own fire safety requirements. These vary according to the distance from the woodshed to other buildings. In Finland if the distance between the structures is more than eight metres, no additional fire protection is needed to protect one from the other. If the distance is less than eight metres, structural protection is required to limit the spread of any fire as much as possible, usually by compartmentalising.



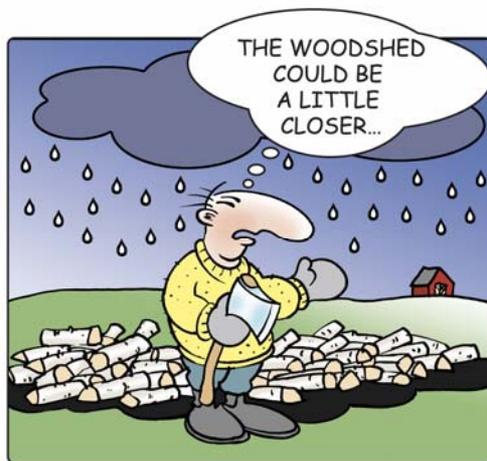
There are also restrictions based on the distance from the woodshed to the border of the property on which it stands. Structures that are smaller than 20 square metres and at least four metres from the border of the property do not require additional fire protection in Finland. If the distance is less than four metres, the structure of the wall facing the border must comply with the EI30 fire resistance rating. If a common woodshed is built on the border and shared by

both neighbours, the border facing the border must be compartmentalised.

If firewood is stored temporarily in the forest or elsewhere on the property, the wood must be protected against the rain. The protection must nevertheless be ventilated. An airtight cover can cause the wood to rot. Attention must be paid to fire safety risks also when temporarily storing firewood.

Firewood should not be stacked against the outer walls of buildings. If the woodpile catches fire or is lit on fire, the entire building could burn down.

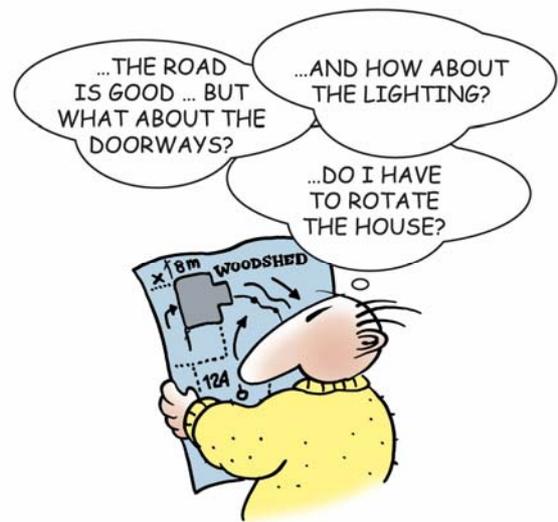
Local fire and building inspection officials can provide advice about fire safety, including how to compartmentalise and where to locate woodsheds.



Requirements for good firewood storage

The quality of firewood is best maintained in a spacious, well ventilated woodshed that is protected from dampness and rain. The storage area should be ventilated from the walls, floor and roof. To allow air to flow between and beneath the logs, the flow of air should not be prevented around the woodpile. The flow of air beneath the woodpile can also be ensured with the appropriate floor structures or supporting logs. The structures should nevertheless be tight enough that they protect the wood from rain and snow. The woodshed should be large enough to store enough firewood for one year or half a year.

Fireplaces in small houses consume an average of around 6 cubic metres of stacked wood a year. This amount of firewood will fill an area of approximately 5 square metres. The storage area should be made big enough to allow sufficient space around the woodpiles for safe and unimpeded access to the wood.



A good woodshed will have large door openings and low thresholds to make it easier to bring in logs to be stacked. Ideally the door opening should be wide enough to allow logs to be brought in on a pallet. The door of the woodshed should face the building into which the logs will be carried.

The correct location of the woodshed will help make it convenient to use. The woodshed should be situated as close to a road or path as possible, and there should be sufficient space around the woodshed for the logs to be unloaded before being stacked. There must be sufficient room to operate a truck, loader or trailer, and the road or path must be able to carry the weight. The distance between the woodshed and the building in which the logs will be burnt should be as short as possible. Firewood is often needed most in the dark wintertime. The woodshed and paths should be sufficiently well lit to ensure safe passage.

Important advice

- Do not stack wood against the outer walls of buildings beneath the eaves, as this increases the risk of fire and can damage wall structures.
- Car garages and other vehicle shelters are not suitable for storing firewood.
- Fire safety regulations limit the amount of solid fuel that can be stored inside residential buildings to 0.5 m³ unless stored in a separate compartmentalised storage area.
- Unnecessary combustible materials must not be stored in workrooms, attics, basements, beneath buildings or in yards.
- Nothing should be stored in emergency or other exits or in the corridors of attics, basements or storage areas.
- Firewood should not be stored directly on top of the ground without supporting logs or be covered too tightly to prevent the accumulation of moisture that can cause the wood to rot.

VTT has produced this flyer as part of the BioHousing Project under the Intelligent Energy Europe Programme.

Further information about the fire safety aspects of storing firewood is available in Finland from your local fire inspector (www.pelastustoimi.fi).

For more information about building woodsheds, contact your local building inspection authority.

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