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1. Only fuel with a moisture content between 8 and 20 wt% should be applied for stove combustion, and the utilization of technically dried wood (below 8 %) and wet wood shall both be avoided. It is pointed out that preferably hardwood (such as beech) should be used. Wood briquettes are also well suitable for combustion in chimney stoves. However, briquettes made of pure bark should be avoided due to smoldering conditions causing high emissions.
2. A major advise is that stove ignition should be performed from the top (that is, the ignition block is placed on top of a single layer of wood logs; then the ignition block is covered with the kindling and ignited). This ignition method has the potential to decrease the CO emissions already during the start-up batch by about 60% in comparison to traditional methods and is therefore an important issue to be communicated not only to users, but also to manufacturers. The traditional bottom-up ignition method is today no longer recommended anymore.
3. The correct recharging should preferably be done at the extinction of bright yellow flames and that the fuel load per batch should be adjusted to the instructions of the manufacturer (using single logs, as well as overloading the stove lead to a drastic increase of emissions and should therefore be avoided).

Additional recommendations include following:

Permissible fuels for use

- Natural untreated wood, which is either round wood or wood split into logs, with or without adherent bark.
- Sawn wood (scantlings, boards), with or without adherent bark.
- Wood briquettes made from natural untreated wood.
- Ignition fuels (in small quantity): coarse wood chips, brushwood, sticks, kindling.
- Ignition aids (only in small quantity!) made of wood shavings, wood-wool, wood fiber, wax or mineral oil.

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- It is not recommended that fuels of herbaceous crop materials are used in a chimney stove, even if such fuel is legally permitted in the respective country.

Fuel that should be avoided in chimney stoves

- Pure bark briquettes.
- Straw, paper, carton and similar products.
- Painted, coated, glued wood or wood which is treated with wood protecting chemicals, for example, used wood from outdoor applications, construction, or demolition wood.
- One-way pallets or fruit boxes and similar, if any impregnation or impurities cannot reliably be excluded.
- Other wastes.

Suitable log wood quality

- For chimney stoves the following log wood fuel recommendations are given:
- Avoid wet wood. Moisture content should be below 20% (wet basis).
- When mould is visible on the surface, the log may be too wet.
- Avoid overdried wood logs. Moisture content should not be below 8%. Wood from long storage in a heated room can be overdried. Wood which comes directly from fuel producers using hot ventilation for drying can also be overdried. After intermediate storage in ambient air such wood is again suitable for stoves.
- The logs should have a length which allows for several centimeters clearance to the firebox walls when horizontally placed onto the ember. Logs should never be so long as to make it necessary to lean them against the walls of the firebox.
- Logs with a uniform medium thickness (that is, 20 to 30 cm circumference) should be used.
- Split logs should be used in preference of round wood (should be split at diameters greater than 8 cm).
- Select thin wood sticks or small logs for the ignition phase. Clean and coarse wood chips can also be selected for ignition.
- Small logs are useful for the ignition batch but not recommended for the recharging of the stove.
- The optimal log size is usually specified by the stove manufacturer (check the manual).
- Use hardwood (such as beech) rather than softwood.
- Use logs with low dust or dirt content.

Suitable briquette quality

- Compacted biomass tends to emit different levels of pollutants in relation to natural form of biomass. Check whether the fuel supplier declares compliance with any of the quality classes in the briquette standard EN ISO 17225-3 but note that the supplier is usually not obliged to refer to the briquette standard. Standard briquettes usually have a low ash content and the concentration of disturbing or polluting components is usually also low (for example, chlorine,

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nitrogen, sulphur, or heavy metals). If standard quality is certified (for example, EN plus or DIN certification scheme) the quality is also monitored.

- Avoid the use of briquettes that are made from 100% bark. Such briquettes can lead to smoldering combustion with high gaseous emissions.
- The briquette length should be significantly shorter than the width of the firebox (due to swelling during combustion of wood briquettes). If volume increase is not allowed for, the briquette may get stuck between the sides of the firebox without any contact to the ember. Long briquettes therefore need to be broken into shorter lengths before use.

Suitable ignition materials

- For the first fuel batch select several normal or rather small wood logs combined with thinly sliced ignition wood sticks or brushwood or coarse wood chips. Such kindling is preferably produced from coniferous wood.
- Use professional ignition aids as available on the market, for example, wax-soaked wood wool blocks or wood fiber blocks with paraffin.
- Do not use the paper, cardboard, or liquid fuels as ignition aids. The use of paper for ignition has several disadvantages. Due to its leafy ash structure, the combustion air flow to the bed of ember is disturbed. Also, the burning time of paper is too short (and unstable) to guarantee a reliable ignition. In addition, ignition happens too slowly.

Ash handling and maintenance

- Clean and de-ash the stove frequently and follow the manufacturer's instructions.
- When de-ashing and cleaning the stove and pipe, do not inhale any released ash particles and avoid any direct contact of your skin with soot; use protective equipment such as masks or gloves. Carbon and soot containing ashes are known to be poisonous due to high concentrations of polycyclic aromatic hydrocarbons (PAH).
- The ash should be deposited to the residential waste.
- Check the connecting pipe to the chimney once or twice per year and clean the pipe using a round pipe brush (can also be done by chimney sweep).
- Check if a firm shutting mechanism of the door is still given and if any door sealing is damaged. Adjust the lock or replace the sealing if necessary.
- Check if any refractory lining is broken and if the grate is torn and replace if necessary.
- The chimney must also be regularly cleaned by a chimney sweeper to avoid soot fire, according to the regulations.

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