

Wood gasification proces

Gasification process in our central heating boiler is divided into 4 stages:

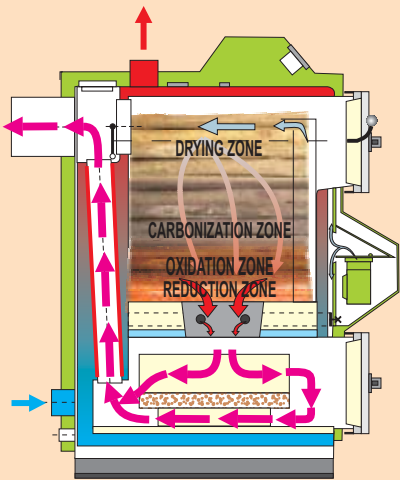
1. Drying and release of wood gases inside the loading chamber in slow glowing process.
2. Burning of gas mixture with secondary air in the lower chamber at 2200°F.
3. Flame reheating and heat exchange.
4. Combustion gases ejecting through chimney flue. **The best indicator of successful wood gasification is the lack of smoke exiting the chimney.**

STAGE 1
Wood drying and breakdown into gases

STAGE 2
Burning of mixed wood gases with secondary air

STAGE 3
Releasing heat trough heat exchanger

STAGE 4
Ejecting combustion gases through smoke stack



Burning Zones

Wood as a fuel

Wood is a renewable resource like solar, water, or wind power. They are all energy sources, which never become depleted, unless improperly managed. Wood is also a fuel, which may be stored and preserved without energy loss. Wood storing reduces its humidity and simultaneously increases its heating value (energy volume, which may be used up during burning process).

Modern boilers utilizing wood in gasification processes use energy contained in wood with efficiency that is three times higher than traditional boilers. Smoke and other emissions are cut to a very low level, making our boilers very nature friendly.

ORLAN boilers are adapted for burning of any kind of wood ranging from sawdust to chunks of wood. The best way to achieve recommended wood humidity is to cut the timber during springtime.

Best humidity for gasification should be in 20% range.

Wood too dry (less than 15%) or too wet (more than 25%) will reduce boiler efficiency.

Raw wood humidity ranges from 60% (wood cut in winter) to 80% (cut in summer). Most favorable wood humidity is obtained after 12-18 months of storing.