

Pilot scale continuous pyrolysis unit for biomass treatment

Description/Parameters

The pilot scale continuous pyrolysis unit is primarily used for thermal decomposition of biomass and biochar production. The unit consists of a hopper or pellet feeder (depending on the type of feedstock). The material is then moved through the pyrolysis reactor by a screw conveyor, which allows the residence time of the biomass in the thermal zone to be controlled. The resulting solid residue is discharged to a storage facility. The vapours and gases from the pyrolysis are fed into a shell-and-tube condenser and a wet scrubber where the liquid products are separated from the permanent gases. The pyrolysis reactor is electrically heated and the unit has metering for power consumption.

Utilization/Services

Pilot scale continuous pyrolysis units is used to produce of biochar from biomass (wood and/or waste). The unit can produce torrefied pellets ('black pellets') for energy purposes at lower temperatures up to 300 °C. Pyrolysis produces three main products - pyrolysis gas, pyrolysis water and oil, and a solid carbonaceous residue called biochar. All pyrolysis products are collected and subjected to further analysis

- Temperature range 200 600 °C.
- Material feed up to 2.5 kg/h.





