Global®
Composting Solutions

HotRot®
COMPOSTING SYSTEMS

Frequently Asked Questions

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What makes the HotRot different?

- The HotRot unit is a continuous, aerobic, flow-through, in-vessel composting system.
- Waste is added to one end of the unit and discharged from the other end.
- The vessel is stationary but incorporates a central tine-bearing shaft that rotates slowly and intermittently.
- The shaft lofts the material, redistributes heat and moisture, and maintains porosity. The shaft also aids progression of the material down the unit, which is also supported by the addition of fresh material at the feed end.
- Aeration is further enhanced via integrated air injection and excess moisture and CO_2 is removed from the unit via and air exhaust system and integrated biofilter.
- Because this is an automatic and continuous system, the process self inoculates and as such composting proceeds rapidly.

What can I compost through a HotRot Unit?

- Kitchen waste including plate scraps and paper napkins.
- Spoiled or unusable food, kitchen preparation waste and pre-harvest loss.
- Compostable food packaging, utensils, and bags.
- Animal manures and bedding.
- Grass clippings.
- Mulched/chipped green waste (when used to balance more putrescible materials).
- Biosolids.
- Anything organic – the smellier the better.

What shouldn't be processed?

- Plastic, glass, and metals.
- Larger hard bones.
- Large pieces of wood.
- Stones and rocks.
- The quality of your compost is directly related to the quality of your waste and freedom from contamination, consider the market for your product before deciding what to process.

How much waste can I process?

- The smallest HotRot 1206 has a throughput capacity of 300-500kg per day (100-180 tonnes per annum) and is designed for smaller on-site applications.
- The next sized unit is the 1509 and this can process between 800 to 1500 kg/d (290 to 540 tpa) depending on configuration.
- The most popular HotRot 1811 has a throughput capacity of 1.8-2.5 tonne per day (650 to 900 tpa) when supplied with an integrated feed hopper, or 1.4-1.8 tonne per day (500 to 650 tpa) when supplied with a less efficient bin-lifter feed unit.
- The largest unit, the HotRot 3518, with a throughput of 9-12 tonne per day (3250 to 4300 tpa) is designed for multi-unit installations for municipalities and larger waste management companies.

- In all cases multiple units can operate in parallel allowing us to address most waste volumes.

How long does the process take?

- There are several parts to this answer.
- First, it must be recognised that the HotRot unit is a continuous system, waste enters the unit periodically throughout the day and compost is also discharged at the same time. There is no need to completely empty a unit.
- It generally takes 10-12 days for a particle of waste to pass from the front of the vessel until it is discharged as compost from the other end.
- However, after exiting the HotRot unit material should be matured for an additional period prior to use.

How is waste added to, and removed from the unit?

- Waste is loaded into the front of the units using either a feed hopper that provides regular feeding over 1-3 days without operator intervention or for the smaller units a bin-lifter that requires a small number of wheelie bins to be emptied into the units 3-5 times per day.
- The waste is automatically discharged into a container (smaller units) or into a temporary storage bunker using integrated screw conveyor.

What is the product?

- A fine, dark brown compost that can be used as a soil supplement.
- Crumbly, loose, humus like material
- Earthy smell, almost odourless
- No recognisable material.

What can I use the product for?

- The HotRot produces a compost that is best stored for 2-4 weeks prior to use.
- It can then either be incorporated into the soil or used as a mulch on gardens and in nurseries.
- Material can also be used for top dressing pasture, in vineyard, and orchards.

Do I need to have green waste or other woody materials?

- Yes, but not on its own.
- HotRot is a true composting system so moisture and porosity of the waste must be managed.
- Where supply of green waste or other woody materials is limited dewatering systems can be used to reduce the amount required.

Do I need to shred my waste?

- Food waste can be processed without shredding, but shredding post inspection/sorting may be advantageous.

- Woody prunings will need to be chipped for use a bulker and should ideally be 10-50mm in size.

Do I need to screen my compost?

- If the material entering the process is small (i.e., well shredded wood has been used) then screening may not be required if using the product as a mulch. However, good quality, fine compost should be screened.
- If larger particles are composted or the material is contaminated with plastic etc., then screening will be required.
- Screening can often allow the recovery of some excess woody material that can be recycled through the process and reused as a bulker.

Are odours generated?

- The HotRot system is supplied with an integrated biofilter and comes with an OdourFree Guarantee.

What is an OdourFree Guarantee?

- Simply put, if the system is designed and installed by Global Composting Solutions and operated according to our instructions, we will guarantee no objectionable odours past the site boundary from the HotRot units.
- It is important to note that odours may still be generated during product maturation and storage, and although we can advise on equipment and processes to minimise these they are beyond the scope of the guarantee.

What is the power consumption?

- Approximately 35-55 kWh per tonne of waste processed. At $0.18 per kWh this equates to $6.30 to $9.90 per tonne.

Do I need 3-phase power?

- Yes, plus neutral, plus earth. Different voltages and frequencies can be catered for in the design.

What is the labour requirement?

- A HotRot unit itself may require an operator for about 1 hour per day, mainly to feed and monitor the system.
- Additional staff may be needed for waste preparation (sorting/inspection, shredding, etc.) and product handling (maturation, storage, and screening)
- We recommend that the same person/s operate the unit/s as the more familiar with the system the better they will understand the process and be able to add the right amount of bulker or adjust the process to ensure the most efficient outcomes.

What ambient conditions (maximum and minimum temperature) can the unit operate in?

- We have units operating outside in Canada at -25°C, and in the Middle East in temperatures exceeding 45°C.
- The HotRot units are insulated which minimises heat loss or solar heat gain.

Do I need to enclose my units in a building?

- No. Units can operate efficiently outdoors but feed preparation and storage of shredded bulker should be done in a building or undercover.
- It is also possible to install units in a building such as a warehouse, and this can be desirable for a variety of reasons.

How do I know my system is working effectively?

- The HotRot system has an integrated control system with a touchscreen human machine interface (HMI).
- The HMI gives the operator access to monitor in-vessel temperatures, and exhaust air temperature and CO_2 concentrations. The operator can also change control setpoints if required, but generally the HotRot units are “set and forget”.
- The control system can also be accessed remotely.

Can you supply shredders and other equipment?

- Yes. Global Composting Solutions has preferential suppliers and manufacturers of shredders and other equipment.
- Feed hoppers, feed, and discharge conveyors (belt and screw), and trommel screens often form part of our supply and bespoke units are designed and manufactured for use.
- For clients that produce a lot of food waste but have limited supplies of woody material to use as a bulker we can also supply dewatering equipment.
- Global Composting Solutions works with its customers to identify their needs and provide an integrated solution from waste reception, through pre-processing, composting and final product handling and use.