



Breaking it down

In-Vessel Composting



Freephone Helpline
0808 100 2040

zerowastescotland.org.uk

Overview

In-vessel composting (IVC) uses naturally occurring microbes which feed on organic material and require oxygen. The microbes break down organic material such as garden waste and food waste and turn it into compost.

There are several differences between IVC and open air windrow composting:

1. IVC can accept food waste as well as garden waste. The higher temperatures reached in IVCs kills potentially harmful bacteria found in meat or other food waste which may have come in contact with meat.
2. IVC takes place in a sealed unit rather than in the open. This means materials can reach and consistently maintain high temperatures for the required minimum period of time and keeps the material away from outside influences such as weather and wildlife.

Garden waste

Organic garden waste materials such as twigs, leaves, grass clippings and prunings are suitable for IVC. Larger items such as branches, tree stumps etc. are too large to fully break down and should be shredded or cut into smaller pieces first.

Food waste:

The types of food waste which can be put through IVC include: bones, cooked and uncooked food, meat and vegetable peelings. There are strict guidelines under the Animal By-Products Regulations for processing food waste.

What happens?



Material is delivered, sorted to remove incorrect materials (contamination) and shredded.

The material is put inside an enclosed chamber and air is forced through it, which increases the temperature.



The material quickly reaches a high temperature to kill any potential harmful bacteria.



The process in the chamber takes between 7 – 21 days to break the material down.



Material is removed and then “matured” for up to 10 weeks, before being used as a soil conditioner.



What comes out?



Compost: The main product to come out of the process is compost. Provided it meets the required quality standard, known as PAS100, the compost can be used by farmers as a soil conditioner and sold to many markets as long as it is no longer considered to be waste. The compost is often also sold or given away to local residents.

Before being sold, the compost is graded and any remaining contamination removed. Contaminants most commonly include plastics from food packaging, or plastic bags.

The grading also removes any pieces of material which have not completely broken down. This can include items like small tree branches which are often too thick to fully compost. These items are often put back through the process, sometimes after being shredded.

The different grades of compost can be used for different purpose. Some grades are for use as agricultural soil conditioners, others as mulches and others are suitable for landscape gardening or finer grades can be used for golf courses.

Glossary

Animal by-products regulations (ABPR)

UK regulations to control composting and anaerobic digestion of products of animal origin, including food waste containing meat, fish or dairy products. The regulations specify hygiene requirements and treatment standards and are in place to prevent the spread of disease to people and animals.

Contaminants/Contamination

Materials which have not been targeted for collection and should not be present. Contamination can hamper recycling efforts so care is needed to make sure that only the correct, target, items are put out for collection.

Garden waste

Organic or naturally occurring, waste vegetation materials from gardens such as leaves, grass clippings, twigs, etc.

Microbes

Small life forms (usually single cells) which are too small for humans to see but which are essential in nature to break down organic material.

PAS100

A quality standard for compost products. Non-PAS 100 compost can be used on land however, it has to meet set requirements for an exemption. More details can be found on SEPA's website.

Further information

Zero Waste Scotland (ZWS)

For more information on Zero Waste Scotland, its work and research, please visit: www.zerowastescotland.org.uk

For more information on waste facilities and how they are developed, please visit: www.zerowastescotland.org.uk/infrastructure

Scottish Environment Protection Agency (SEPA)

For information on waste regulation, licencing, data and more detailed technical information on facility types and the standards they are required to achieve, please visit:

www.sepa.org.uk

Recycle for Scotland

For more information on how to reduce, re-use and recycle, please visit: www.recycleforscotland.com

Videos

To watch videos explaining what different facilities do, please visit: www.recycleforscotland.com/facts-figures/facts-figures

Chartered Institution of Wastes Management (CIWM)

For more detailed and technical information on different facilities and on waste management issues in general, please visit: www.ciwm.co.uk

Renewable Energy Association

For more information on thermal and biological treatment facilities which create energy from waste, please visit: www.r-e-a.net/renewable-technologies

Environmental Services Association

For more information on waste management and the different types of facilities, please visit: www.esauk.org/



For more information about Zero Waste Scotland's terms and conditions, please visit www.zerowastescotland.org.uk/content/terms-conditions

If you have any questions please contact data@zerowastescotland.org.uk