



Compost  
Systems



# *Earth Flow™ Intermodal Composting System*



[www.compost-systems.com](http://www.compost-systems.com)

## *Earth Flow Features*

The Intermodal Earth Flow™ system is an automated in-vessel composting system that provides optimum conditions for thermophilic composting. The Earth Flow features:

- **Automated mixing** – via the Earth Flow's exclusive Traveling Auger technology.
- **Automated aeration of compost** – boosts oxygen levels even further.
- **Automated moisture addition** – maintains appropriate moisture content.

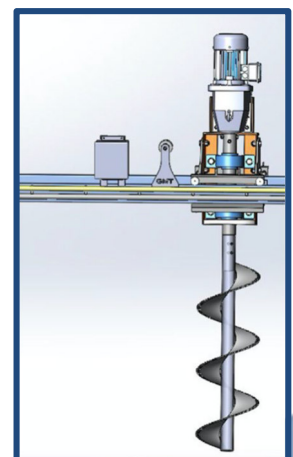
The combination of these features facilitates an aerobic composting process in 14-21 days. Retention times as low as 5 days are possible in combination with secondary aerated composting.



The Intermodal Earth Flow™ system is a re-purposed shipping container and is equipped with a fully automated mixing, aeration and moisture addition system for optimal compost process management and odor control. The shipping container is lined with insulation and stainless steel for a long service life. These systems are available in 20' and 40' lengths.

## *Traveling Auger Mixing System*

The computer controlled mixing system provides daily mixing and aeration for the compost inside the Earth Flow. The stainless steel inclined auger is mounted on a carriage that moves side-to-side and front-and-back within the vessel. The auger churns and shreds the compost in the vessel, advancing it slowly toward the discharge end. A control panel allows for automatic operation with multiple mix patterns and programmable timer cycles. The drive motors are controlled by efficient variable frequency drives to regulate the auger speed while minimizing the use of electricity.



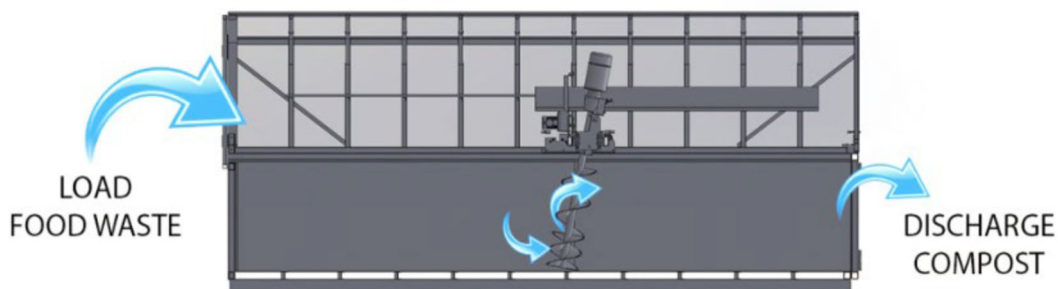
The traveling auger mixing approach fulfills six goals, which are essential for production of high quality compost:

1. **Shreds/Mixes.** The auger blends material by smearing food waste onto bulking agent.
2. **Aerates.** The auger repeatedly fluffs the compost to add oxygen to the matrix.
3. **Distributes Moisture.** The auger lifts wet material from the floor of the vessel and brings it to the surface. This equalizes moisture through the pile.
4. **Transports.** The auger slowly increments compost from the load end to the discharge end of the vessel.
5. **Stacks.** As compost reduces in volume, the auger repeatedly stacks compost to maximize utilization of the space.
6. **Homogenizes.** The auger produces an extraordinarily homogenous compost product.



## *Earth Flow™ Operation*

The Earth Flow™ is designed such that organic feedstock can be added at any time to the loading end of the vessel and finished product discharged from the opposite end. An automated traveling auger mixes the fresh organic waste into the hot compost, which rapidly breaks down as it migrates toward the discharge end. The typical process time for the waste to flow through the vessel is 14 to 21 days. As the organic waste converts into compost, its volume is typically reduced by about 50%. Compost can be discharged using a bucketed loader. The Earth Flow™ can also be configured for automotive discharge of material into a bulk container or cart. This greatly simplifies operations. Simply load feedstock and unload compost, the Earth Flow does the rest.



The Earth Flow™ can be operated as a batch-system or a continuous-flow system. A batch-system means that the vessel is filled to capacity and is then closed and the batch is composted for a specified period of time and then discharged. In a continuous-flow system, feedstock can be loaded at anytime on the load end and the traveling auger slowly migrates compost to the discharge end, where material can be discharged once the discharge end is full and the compost is ready to be discharged. It is also possible to run the Earth Flow™ as a hybrid of a batch and a continuous flow system.



## *The Earth Flow™ Difference*

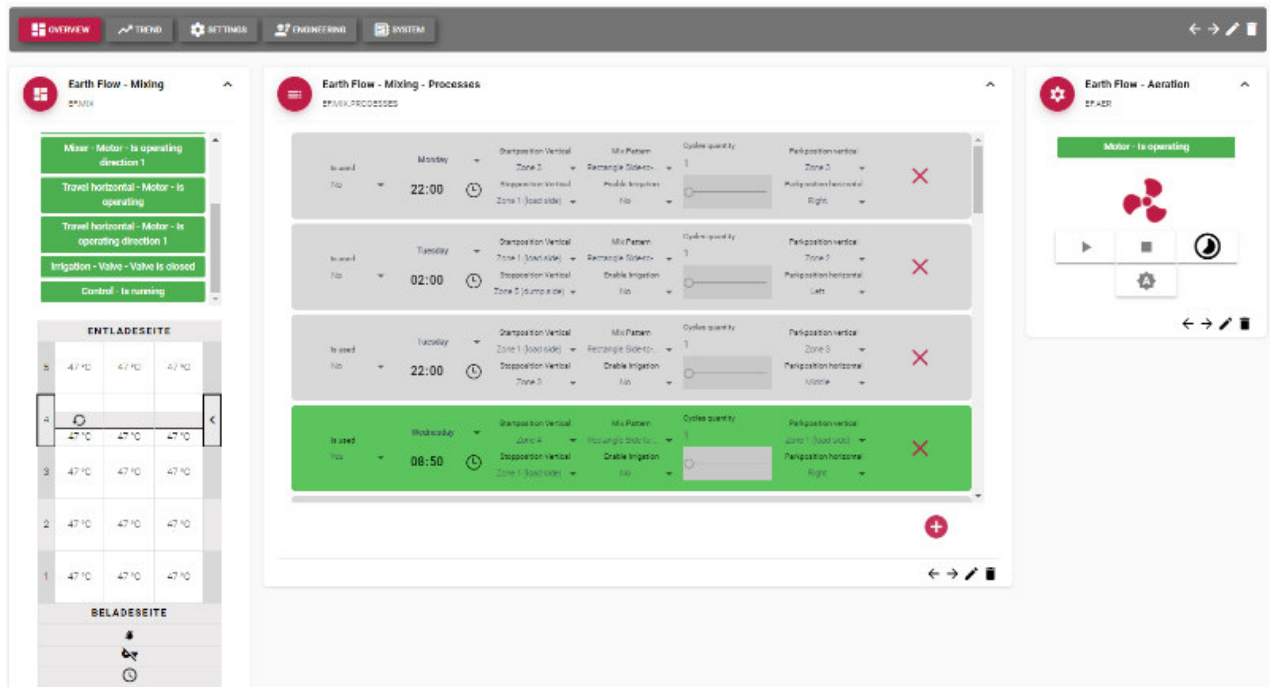
No other composting system on the market today offers the Earth Flow's combination of high performance, speed, small footprint, odor control and top quality compost at such a reasonable price:

- **Gorgeous Compost** – The traveling auger mechanism produces a superior quality compost: light, fluffy, homogeneous, friable, highly oxygenated.
- **Fully Self-Contained Composting System** – Prevents animals from accessing the compost.
- **Controlled Leachate** – Leachate is managed and recycled internally within the vessel.
- **Excellent Odor Control** – Five different engineering controls combine to provide unsurpassed control over odors, pests and air quality:
  1. Mixing auger – oxygenates compost, breaks up anaerobic pockets and evenly distributes moisture.
  2. Positive aeration – further boosts oxygen levels.
  3. Bulking agent – absorbs moisture, provides available carbon, structure (air space in the pile).
  4. Fully enclosed system – provides control over process air.
  5. Biofiltration (optional) – filters all process air through a biofilter.
- **Small Footprint for Restricted Space** – The Earth Flow's unique design creates high throughput on a modest footprint.
- **Lower Operational Costs** – The Earth Flow's ease of use makes it the perfect system for on-site composting.
- **In-Vessel Retention Time** – Adequate in-vessel retention provides assurance that the discharged compost will not produce odors, be an attractant to vectors, or require additional active composting. Shorter retention times are possible if combined with a secondary aerated system.
- **Operational Flexibility / Control** – The Earth Flow™ can be operated as a batch-system or a continuous-flow system. The Earth Flow mixing, aeration and moisture addition systems are fully programmable for specific process and product objectives.
- **Handles Manufactured Organics** – The Earth Flow™ handles manufactured organics such as uncoated food-soiled papers, pizza boxes, shredded paper, cardboard, compostable serving ware.
- **Durability/Reliability** – With more than 35 systems operational in the field, the Earth Flow™ has demonstrated its capabilities and reliability over time.
- **Enhanced Remote Control** – Easy and remote access to all control and monitoring data, which further optimizes operational costs.

## Enhanced remote control & monitoring

The Earth Flow™ is equipped with an enhanced control system for remote configuration and monitoring of the composting process. It provides a graphical user interface for easy and flexible configuration of mixing patterns and processes. The visualization is browser based for access of the application using any web-enabled equipment (mobile phone, laptop and tablet).

- Easy control of aeration and exhaust air blower
- Online data storage and export of data
- Local control for manual mixing and start of pre-configured mixing patterns and processes
- Position based temperature monitoring



The screenshot displays the Earth Flow control interface, which is divided into three main sections:

- Earth Flow - Mixing:** This panel shows the status of various mixing components. It includes indicators for:
  - Mixer - Motor - is operating direction 1
  - Travel horizontal - Motor - is operating
  - Travel horizontal - Motor - is operating direction 1
  - Irrigation - Valve - Valve is closed
  - Control - is running
 Below these indicators is a temperature grid for the 'ENTLADESEITE' (discharge side) and 'BELADESEITE' (loading side). The grid shows temperatures of 47 °C across multiple points.
- Earth Flow - Mixing - Processes:** This panel displays a list of pre-configured mixing processes. Each process is defined by:
  - Day and time (e.g., Monday 22:00, Tuesday 02:00, Tuesday 22:00, Wednesday 08:50)
  - Disposition Vertical (e.g., Zone 2, Zone 1 (load side), Zone 2 (dump side), Zone 4)
  - Mix Pattern (e.g., Exchange Sides, Double Irrigation, No)
  - Cycle quantity (set to 1)
  - Participation vertical (e.g., Zone 2, Zone 3, Zone 8)
  - Participation horizontal (e.g., Right, Left, Vertical)
 The processes are color-coded: green for active and grey for inactive.
- Earth Flow - Aeration:** This panel shows the status of the aeration system, including:
  - Motor - is operating
  - Control buttons for play, stop, and refresh.

## Vessel and equipment specification

<b>VESSEL</b>	<b>EF-20</b>		<b>EF-40</b>	
Total System Capacity (m <sup>3</sup> )	15 m <sup>3</sup>		31 m <sup>3</sup>	
Length - Overall	6,2 m		12,3 m	
Width - Overall	2,7 m		2,7 m	
Height - Overall (to roof peak)	2,9 m		2,9 m	
Approx Weight Empty Tons	6 t		8 t	
Input Capacity @ 21 days retention	0,5 t/d*	190 t/y*	1,1 t/d*	410 t/y*
Input Capacity @ 14 days retention	0,7 t/d*	270 t/y*	1,5 t/d*	530 t/y*
Input Capacity @ 10 days retention	1,0 t/d*	370 t/y*	2,0 t/d*	720 t/y*
Input Capacity @ 7 days retention	1,3 t/d*	480 t/y*	2,6 t/d*	960 t/y*
Input Capacity @ 5 days retention	1,7 t/d*	610 t/y*	3,4 t/d*	1240 t/y*

<b>EQUIPMENT</b>	
Mixing Auger	Diameter 35 cm, Stainless Steel 1.4301
Gear Motor	5,6 kW (400 V / 50 Hz, 3-phase)
Gearbox	Helical bevel synthetic lube
Carriage Driver Motor	0,2 kW
Rail Driver Motor	0,4 kW
Control Panel	Programmable PLC with cellular network access for remote control
Power Requirements (Motors)	16 A (400 V / 50 Hz, 3-phase)
Power Requirements (Fan and Controls)	10 A (230 V / 50 Hz, 1-phase)
Positive Aeration System	
Exhaust Air treatment (optional)	
Integrated Irrigation	
Vessel Insulation	

Notes:

\* t/d tons per day resp. t/y tons per year. Assumes an aggregate bulk density of 510 kg/m<sup>3</sup> for blended feedstock. Also assumes a continuous flow of inputs on 7 days per week and a reduction of volume in vessel through composting.

## *Earth Flow impressions*





## *Composted materials*

Horse manure



Green waste and Source segregated organics (SSO)





Digestate



Broiler and laying chicken manure



Sewage sludge



Cow manure



Onions



[www.compost-systems.com](http://www.compost-systems.com)



Compost  
Systems



Compost Systems GmbH  
Maria-Theresia-Straße 9  
4600 Wels  
AUSTRIA

Telephone +43 7242/350777-0  
Telefax +43 7242/350777-20  
[info@compost-systems.com](mailto:info@compost-systems.com)  
[www.compost-systems.com](http://www.compost-systems.com)

VAT-Nr. ATU 56199544  
Registration-Nr. 228888a  
Commercial Court Wels