

LTC Dry

Low Temperature Conductive Drying

Heartland's LTC Dry is a state-of-the-art technology that sets new standards in sludge drying operations. Designed to address the challenges faced by wastewater treatment plants and industrial facilities, Heartland's LTC Dry advanced thermodynamic process utilizes dry matter for economic and reliable heat transfer.

Key Features:

- **Low Operating Temperatures:** Low heat requirement due to dry matter conductive heating operated at low pressure
- **Enhanced Thermal Efficiency:** Designed to utilize low temperature waste heat sources from electrical cogeneration systems
- **Low Emissions:** Less odors & volatiles due to lower operating temperature
- **Simple Design:** Less risk, maintenance, and operational costs with minimal rotating equipment
- **Improved Safety:** Reduced operator exposure due to low operating temperatures

LTC Dry, a deeper look...

The 50 wtpd plant will receive dewatered cake (5-35% dry solids). The dewatered cake will be dried to 95% through a highly efficient closed loop process. After solids are dried in the evaporation zone, they will be removed from the drying loop, fed to the dry solids' storage bin, then on to the gasification process.



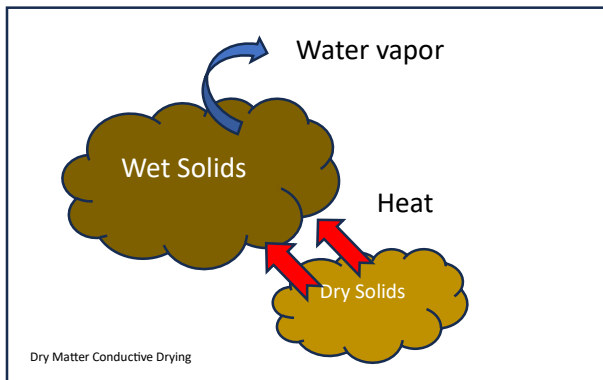
How it Works

- **Heating Zone:** Thermal energy is added to dry solids storage then fully circulated through entire system. This is the heat sink for drying process in evaporation zone.
- **Feed Zone:** Wet biosolids are conveyed into the dryer loop system at a specified (dry:wet) ratio depending on feed stock.
- **Drying Zone:** Low temperature conductive (LTC) drying occurs as screw conveyor mixes wet and dry solids.
- **Recovery Zone:** Holding under slight vacuum conditions, water vapor is collected, condensed, and sent for recovery.
- **Product Zone:** 95% DS is removed from end of dryer conveyor for proceeding gasification. Remaining dry material is recycled to bulk heating silo for heating.

Low Temperature Conductive (LTC) Drying Technology:

The thermal efficiency of the LTC dryer is attributed to the dry matter conductive heating technology utilized in the primary dryer conveyor.

- 95% or greater dry solids are continually circulated through the process.
- Wet biosolids feedstock is precisely injected to produce a specified dry:wet solids ratio depending on influent moisture content.



Here a dry matter to wet matter thermal conduction process transfers dry heat and drives evaporation at low temperatures due to a low atmospheric pressure environment. Water vapor is released, yet with lower temperatures, fats, oils, and greases, and other volatiles remain in solid phase, minimizing odors.

	<i>General Specification</i>	<i>50 wtpd Dryer</i>
<i>Feedstock</i>	Biosolid cake (min dry matter content)	5-35%
<i>Utilities</i>	Power	50 kW
	Hot water (deg F)	210
<i>Operations</i>	Average operating temperature (deg F)	180
	Heat input (kWh/ton H2O evaporated)	595-730
	Volume Reduction	+95%
	Uptime (day/yr)	+95%
<i>Output</i>	Dried Solids, dtpd (assuming 20% DS cake)	10.5
	% Solids	95%
<i>Installation</i>	Footprint, LxWxH (ft)	25'x30'x30'
	Classification Zone	General