

Producing bio-solid fuel from sewage sludge,
thus contributing to CO₂ reduction.

Hitz Pearl System

Features

- Manufactures easy-to-handle dried pellets (bio-solid fuel) with low water content without losing the calorific value of sewage sludge.
- Utilizing dried pellets manufactured by the system for bio-solid fuel, thus contributing to the reduction of CO₂ emissions.
- Highly safe technology with an indirect heating process and thermal medium oil used.

Overview

(Technical principles, actions, etc.)

1. Overview

The Hitz Pearl System adopts an indirect heating process that uses oil as a thermal medium and produces dried pellets (with a diameter from 1 to 10 mm), which has a water content not exceeding 10%, from sewage sludge without losing the calorific value of the sewage sludge. These dried pellets can change into easy-to-handle bio-solid fuel (see fig. 1).

2. Outline Flow

This system mainly consists of the following three installations (see fig. 2).

- Hard pelletizer:** Performs the drying and pelletizing dewatered sludge.
- Thermal medium oil heater:** Heats thermal medium oil while performing the combustion deodorization of the exhaust gas.
- Scrubber:** Cools the flue gas to eliminate moisture.

3. Principle of Drying & Hard-Pelletising

Dried pellets are produced from coating sludge, which consists of dried pellets as cores covered with dewatered sludge, rolling on the hot heat transfer tray (see fig. 3).

4. Features of Dried Pellets

- Pellets with a low water content providing a high calorific value without losing the organic ingredients in sewage sludge.
- Easy-to-handle pellets.
- Pellets with a low hygroscopicity rate that can be stored for a long time with no heat generation resulting from fermentation.
- Hygienic dried pellets that are sterilized at the drying process.

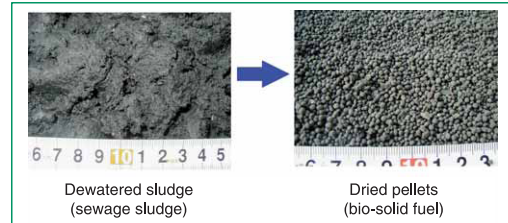


Fig. 1 Appearance of the sewage sludge and dried pellets

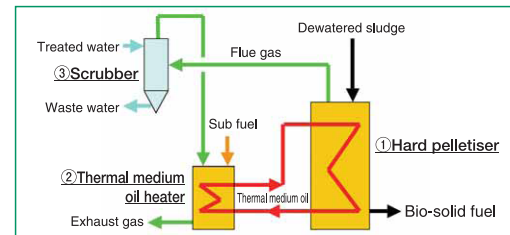


Fig. 2 Schematic flow chart

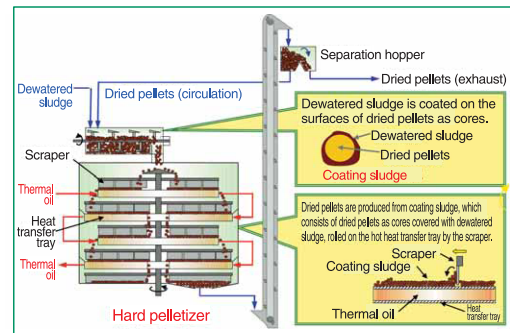


Fig. 3 Principles of drying and pelletizing

Introductory Track Record

Year	Place	Country	Customer	Water content of dewatered sludge	Number of units	Dewatered sludge throughput (Tons/24h and unit)
1984	Bruges	Belgium	Aquaflin NV	74%	1	30
1993	Baltimore	United States	Wheelabrator Clean Water Systems Inc.	74%	3	200
1995	Balcelona	Spain	JV Junta de Sanejament de la Generalitat de Catalunya	75%	1	70
1996	Antwerp	Belgium	Aquaflin NV	72%	1	120
1997	Sao Paulo	Brazil	OTV for SABESP (Companhia de Saneamento Basico do Estado de Sao Paulo)	65%	1	240
1999	Toronto	Canada	US Filter - Veolia Water North America for the city of Toronto	72%	2	180
2000	Barcelona	Spain	Metrofang	65%	4	180
2000	Dundee	Britain	JV for NOSWA (North of Scotland Wastewater Authorities)	75%	1	100
2000	Bruges	Belgium	Aquaflin NV	75%	1	140
2001	Chicago	United States	Veolia Water North America	75%	4	250
2001	Moray Coast	Britain	JV for NOSWA (North of Scotland Wastewater Authorities)	85%	1	90
2005	New York	United States	Aslan Environmental Services	80%	1	10
2006	Czestochowa	Poland	Czestochowa Water Works	73%	2	40
2006	Bialystok	Poland	Bialystok Water Works	74%	1	130
2009	Iwanuma	Japan	Miyagi Prefecture	75%	1	50

Effects

◎Further Promoting Effective Use of Sewage Sludge

The utilization of sewage sludge for compost and other applications, such as construction materials, is making progress. This system can manufacture dried pellets (bio-solid fuel) from sewage sludge, thus making it possible to promote the effective use of energy.

◎Reduction of Greenhouse Gas

The use of carbon-neutral bio-solid fuel in place of coal reduces CO₂ emissions. Furthermore, the system generates only a little N₂O, thus making it possible to reduce greenhouse gas much more effectively than fluidized incineration of sewage sludge.

◎Cost Reduction of Sewage Sludge Treatment

The bio-solid fuel that this system manufactures has a high calorific value and ensures ease of handling. Therefore, the fuel can be sold. This means the recycling cost of sewage sludge will be less than the disposal cost of the same as industrial waste if this system is used.

Hitachi Zosen Corporation

Water Treatment and Industrial Equipment Headquarters Sales and Planning Group

8th Floor, Omori Bellport Building D

6-26-3 Minamioi Shinagawa-ku, Tokyo 140-0013 Japan

● TEL / +81-3-6404-0823 ● FAX / +81-3-6404-0862 ● E-Mail / wt-tokyo@mml.is.hitachizosen.co.jp ● http://www.hitachizosen.co.jp/