

Specification 011 Dewatering System Pos.300+

Project: LIFE19 MIBA Filler – Pilot
 Reference: LIFE19 CCM/NL/001219 – 300+
 Revision: 0.3 (minimum DS content set from 3,5% to 8,5%, standard operating condition narrowed)
 Date: 8 November 2021

This document describes the specific and technical specifications for the **Dewatering System**. This document is part of the Request for Quotation **LMF-RFQ-006-Dewatering System Pos.300+**.

1. Product characteristics Machine suitable to handle Incinerator Bottom Ash (IBA) with the following characteristics (contents in mass %):

Input:	Filler Slurry: DS 8,5% - 44% SG (particles): ~2,6 pH 9 – 12 Cl-content: up to 20 000 ppm Organics content: <6% Temperature: 5 °C – 55 °C Process water Same pH and Cl-content as above. Suppletion water Well water Pressurized air Supplier advice Instrument air Supplier advice Typical particle size distribution: Mean: 12 µm D90: 18 µm D50: 7 µm D10: 1,8 µm Cake output: As dry as possible (cakes will be fed into a dryer)
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2. Capacity & dimensions Capacity: see below table for input requirements

case	q_m	q_v	ρ_{sl}	C_m	C_v	C	viscosity
	kg/h	L/h	kg/L	-	-	g/L	
average expected	5805	5400	1,075	11,2%	4,5%	120,5	water
minimum flow	2615	2210	1,183	24,9%	11,1%	294,3	thick yoghurt
maximum flow	7650	7245	1,056	8,5%	3,4%	89,8	water

Slurry buffer tank: 30m³

Feed pump(s)/Membrane Filter press: able to operate on slurry as stated above. Based on a cycle time of 40 minutes with maximum flow.

Membrane Filter Press – cake thickness: 30mm (to be advised)

Membrane Filter Press – plate size: 1000mm x 1000mm (to be advised) (chosen to have a good representation for a commercial size MFP, please advise)

3. Information of previous operational tests

During our pilot plant period, we had a 'normal' filter press and tested with a membrane filter press. Following information could be helpful in knowing the material.

With our 'normal' filter press:

At 7.5 barg feed with the membrane pump, we reach a 35mm filter cake

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with 70% solids.

With a membrane filter press:

Start at 4.0 barg end at 7.5 barg of feed with the membrane pump, followed by squeezing the membrane plates at 13 barg, we reached a 25mm filter cake with 77.5% solids (chamber was 40mm).

4. Mounting position The filter press will be placed above a discharge conveyor.

5. Features Designed for full automation and minimal human interference, high availability, and low and easy maintenance.
Membrane filter press
All items to increase output dryness (e.g. coreblow, etc. advise on possibilities).
All items to minimize human interference and keep a consistent cake quality (e.g. automatic discharge, automatic cloth washing, etc.).
Information about cake washing (for possible future testing)

6. Deliveries Design, fabrication & delivery of a Dewatering System

- Complete machine/system; after erection and installation ready for operation, including required tanks/pumps/valves/piping/etc.
- Automation functional design specifications
- Preservation, supplier standard
- Support structure design specifications
- Motors: make SEW, optional supplier standard
- Optional: required instrumentation
- Optional: access ways and platforms
- Optional: control cabinet
- Optional: support structure

Spare parts:

- Required spare parts.

Documents:

Document deliveries according to the specification 'Documentation and Drawings'