

**Doppstadt**

# **LANDFILL MINING**

**APPLICATIONS**

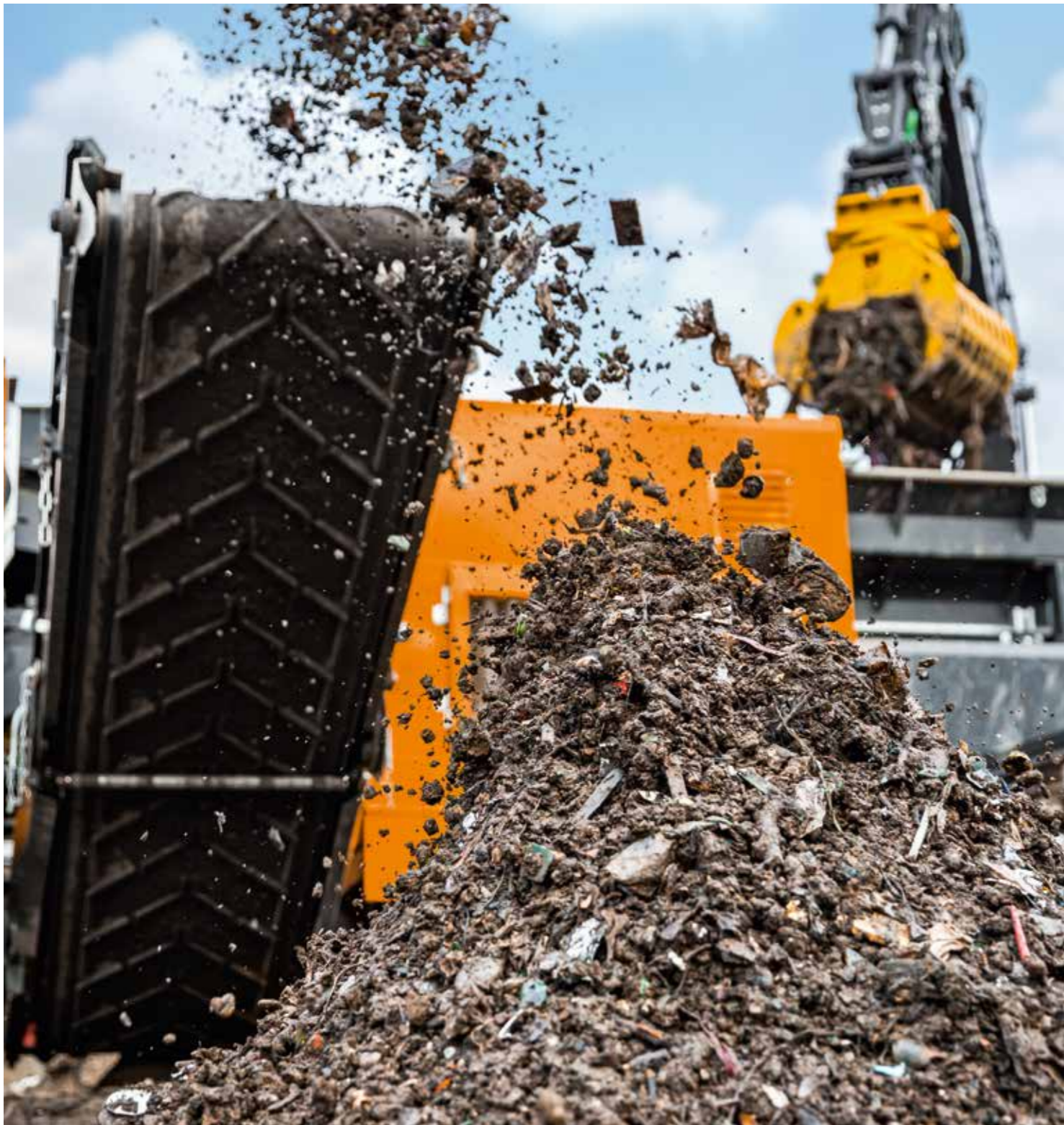
Fines from screening municipal landfill material, screened with Splitter

**Best Solution. Smart Recycling.**

**doppstadt.com**







### **THIS IS DOPPSTADT**

Headquartered in Velbert, Germany, the Doppstadt family firm was founded in 1965. While the company has its origins in developing agricultural machinery, Doppstadt today is a leading, globally active solutions and services provider in all areas of recycling/environmental technology and recyclables extraction.

"Best Solution. Smart Recycling." – With this as our guiding principle, we combine proven processes to create customised end-to-end solutions characterised by innovative processes, optimum efficiency, and maximum cost-effectiveness. Particularly in the areas of water-based separation systems and wet recycling, we impress

our customers by providing flexible systems to tackle every challenge. With locations in Velbert, Wülfrath, Calbe, and Wilsdruff, Germany, we serve customers in more than 40 countries through our own dealer network and offer comprehensive services for every product in Doppstadt's unique portfolio.



## **LANDFILL MINING**

### **Process description**

The dismantling of a landfill is usually carried out for several reasons. It is always worthwhile from an ecological point of view, achieving the remediation of soil and groundwater. But the main reason is the recovery of free building area. The recycling of metals and energetic utilization of plastic foils and other combustible components just contribute to the profitability of landfill mining.

The first process step consists of a spiral shaft separator (SWS) for screening excavated landfill material. Metals are removed from the fine and the coarse fraction using magnets. The separated metals are recycled. The fine fraction of the SWS is screened again using a trommel screen to produce a midsize fraction between 50 and 150 mm. This fraction is then separated

according to density using a wind sifter. The light fraction of the wind sifter can then be utilized energetically. The drum screen fines are mixed with lime and build back into the landfill or moved to the new location of the landfill.

This method mainly relates to municipal waste landfills. The treatment of slag and mining tips will not be considered here.



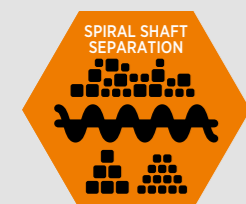
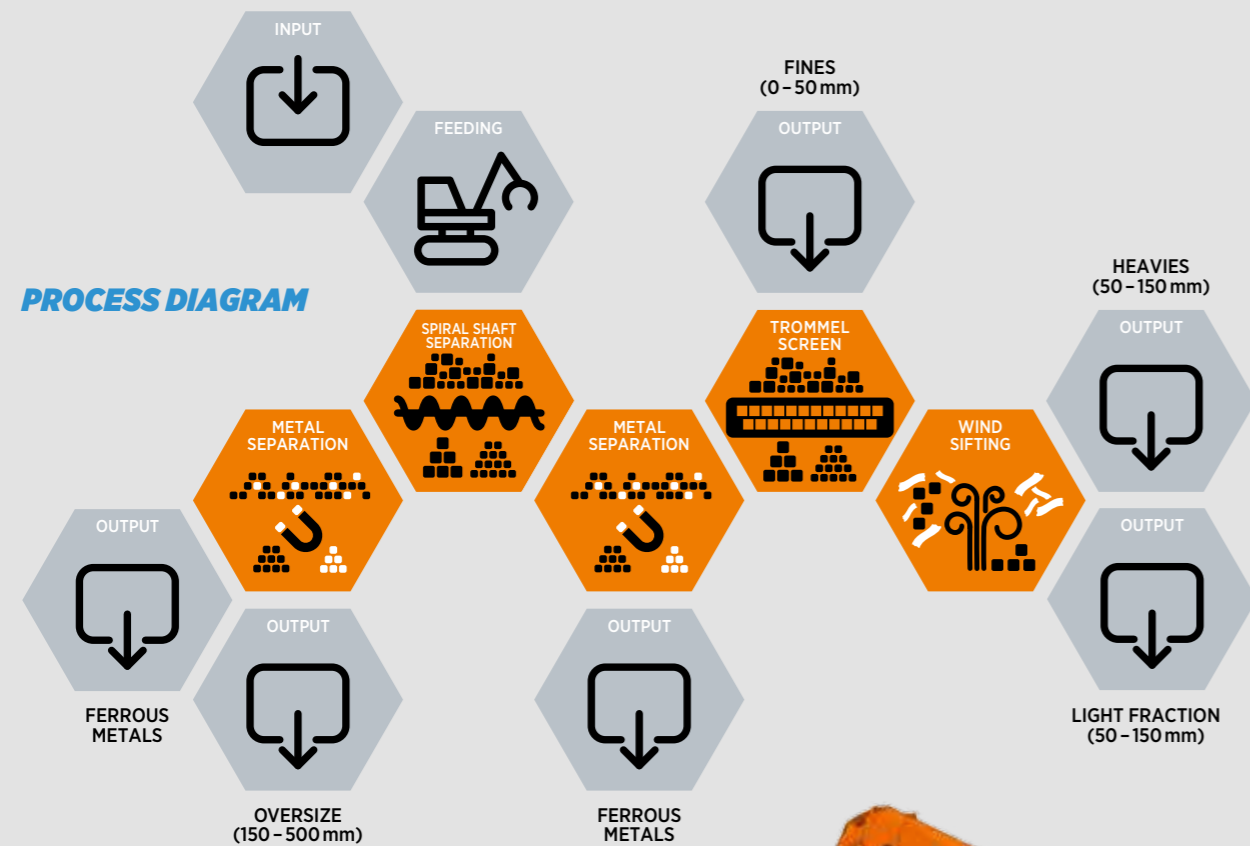
The main reason for landfill mining is the provision of future construction area. If the landfill remains in service, its volume capacity is increased by removing the target fractions. Thus more waste can be deposited. Useful fractions obtained by processing landfill material are:

- **REFUSE DERIVED FUEL** (Oversize 150 – 500 mm)
- **REFUSE DERIVED FUEL** (Light fraction 50 – 150 mm, see picture above left)
- **RECYCLING** (ferrous metals, see picture above right)
- **FINES AND HEAVIES WILL GO BACK TO LANDFILL**



# LANDFILL MINING PROCESS OVERVIEW

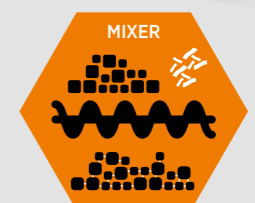
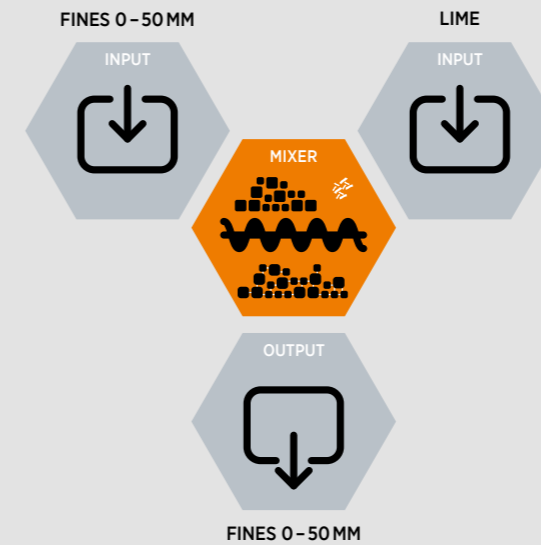
## PROCESS DIAGRAM



### SPIRAL SHAFT SEPARATION

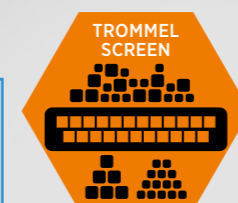
The spiral shaft separation (SWS or Splitter) is the most robust method on the market for screening waste. It is designed for an unpredictable material like this.

## PROCESS DIAGRAM



### MIXER

Lime is added to the material in a mixer for it to be returned to the landfill.



### SCREENING

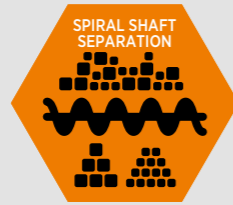
For the secondary screening a trommel screen is sufficient. It removes the fines that would otherwise contaminate the light fraction produced by the wind sifter.



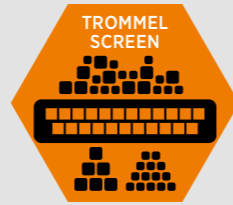
### WIND SIFTING

Low density materials such as plastic films are separated from the heavy fraction and represent an important target fraction of the process.

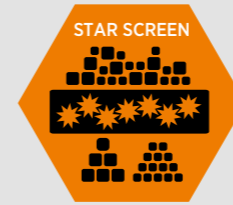
# GENERAL VIEW OF MACHINES



**SEPARATION/SPIRAL SHAFTS**



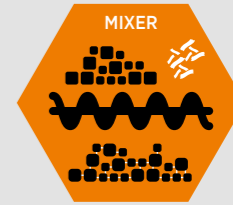
**SEPARATION/SCREENING**



**SEPARATION/SCREENING**



**WIND SIFTING**



**MIXING/HOMOGENIZATION**

**MOBILE**



FLATFLEX LINE / SPLITTER LINE



TROMMEL LINE



FLATFLEX LINE



WINDSIFTER LINE



MIXER LINE

**STATIONARY**

**SELECTOR**  
Selector 400  
Selector 800.2  
+  
**SWS**  
Spiral shaft screen deck

**518**  
518 FLEX  
  
**SM**  
SM 518.2  
SM 620 Plus  
SM 620 K Plus  
SM 620 SA Plus  
SM 720 SA Plus

**SELECTOR**  
Selector 800.2  
+  
**DST**  
Star screen deck

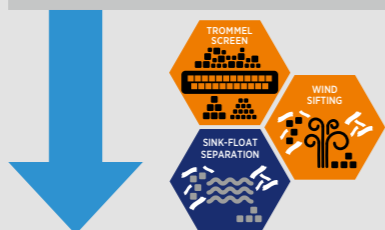
**AIRFLEX**  
AirFlex 1500

**SPLITTER®**  
Unit 325  
Unit 425  
Unit 625

**SM**      **SST**  
SM 518 A      SST 518  
SM 518 F      SST 720  
SM 620 A      SST 725  
                 SST 1025  
                 SST 1525

**WS**  
WS 1001  
WS 1501  
WS 2001  
WS 2501  
WS 3001

**DM**  
DM 215 E



Further processing



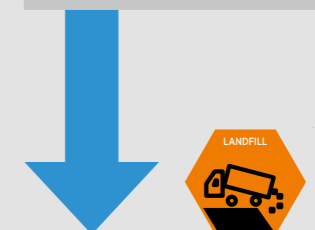
Further processing



Further processing



Further processing



Further processing





## Landfill mining with Doppstadt solutions

- Robust process for extremely heterogeneous material
- Return on invest due to more landfill capacity if landfill stays in service
- Return on invest due to regained construction area for other purposes
- Energetic and material utilization of part of some landfill components



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