Boskalis
Environmental

EQUIPMENT SHEET

MOBILE SOIL WASHING PLANT

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MAIN DATA

The Mobile Soil Washing Plant (MSWP) is designed to process mineral waste materials, e.g. contaminated soil, contaminated dredged sediment, fine fraction of demolition waste and street sweepings.
The Washing Plant process is based on a number of in line process steps, each to be considered as separate plant modules:

- Rotating sieve drum module, for separation and washing of coarse fraction.
- Vibrating shaker screen module, for sieving medium to coarse fraction.
- Sand separation module, using hydro cyclones and a counter current washer, followed by a vibrating sand de-watering screen.
- Pre-thickener / clarifier module, for separating silt / clay fraction from process water.
- Mechanical dewatering of silt / clay fraction, using either a belt filter press or membrane filter plate presses.

DIMENSIONS

The different modules are built of standardized skid mounted and containerized equipment, including screening and separation units, a polymer dosing unit, plant automation and control instrumentation, and 'plug and play' belt filter presses or membrane filter presses.

Minimal required area	approximately 4,000-5,000 m^2

PERFORMANCE

Processing of various mineral waste materials

Typical production rate	80-100 ton per hour (dependent on soil characteristics)

REMARKS

Soil Washing is a term applied to a number of treatment processes for mineral waste material. This plant is specially designed to process mineral, inert particles using particle size and density separation. The basic principle applied in the Soil Washing process, is the fact that contaminants have greatest affinity for the fine and organic particles in the soil or sediment. This principle applies across a wide range of contaminant types and has therefore a wide applicability.

Our Soil Washing equipment focuses on beneficial use. All reusable sand and gravel is retrieved and washed from the processed contaminated soil / sediment. The process residue is mechanically dewatered to minimize the necessary disposal volume. Typically, 10 to 20% of the incoming material is disposed of at a nearby landfill site.

The plant is built with a specifically developed pre-thickening monitoring system, including a mass-flow control device, to realize an optimum pre-thickening process and minimize the dosage of polymer. Polymer is automatically prepared in a containerized polymer diluting and dosaging unit. The volumes of dilution water and the actual dosage of polymer to the sludge flow is continuously monitored and adjusted by computerized (PLC) steering.

A Modular based and easy to install, mobile plant

After pre-thickening, the sludge (pre-thickened residue) is pumped to the last stage of processing; the mechanical dewatering step. The final disposal location and requirements defines the type of mechanical dewatering equipment. Membrane filter plate press capacity and achievable filter cake solid/moisture content is depending on soil or sediment characteristics. For soil, the solid content is typically between 35% and 50% for belt filter presses and between 60% and 65% for membrane filter presses.

Boskalis Environmental has extensive experience with this process and achieves the strict Dutch re-use values for treated soil.

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B Overview MSWP