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### **Coastal protection with geotextile container systems**

#### **Large-format tubes and bags as effective erosion protection for banks, coasts and harbours**

- Economic and ecological alternatives to conventional construction methods
- Safe building structures due to high adaptability
- Fast and flexible installation on land and in water

**Gescher (Westphalia/Germany) 2021: In the wake of climate change, sea level rise and an increasing number of extreme weather events, not only new strategies and solution concepts are required, but also alternative, new construction materials. Sustainable economic solutions made of geotextile containers, so-called tubes and bags, are easy and quick to install in water or on land and safely protect against erosion, both from waves and currents. HUESKER Group's SoilTain coastal protection solutions can be individually prefabricated and are filled in-situ with locally available soils (usually sand). With its new brochure and on its website, HUESKER Group presents the possibilities and areas of application of the shore and coastal protection solutions with SoilTain Tubes and SoilTain Bags and at the same time introduces the new product SoilTain Bags Xtreme.**

The HUESKER Group was one of the pioneers in the use of geotextile sand containers in coastal protection with the dike project at the Ruestersieler

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Watt in Wilhelmshaven/Germany in 1963. Over the years, two main systems have established themselves on the market today: large-format geotextile tubes filled hydraulically with sand (SoilTain Tubes) and mechanically filled, with a funnel, SoilTain Bags, in the classic sense of sand bags. Apart from the filling method, the two geotextile sand container elements essentially differ in size, with sand bags being used for a volume of up to approx. 2.5 m<sup>3</sup> and geotextile tubes having a capacity of several hundred cubic metres.

### **SoilTain Tubes – heavyweights with many advantages**

SoilTain tubes are manufactured from specially tested geosynthetic fabrics of up to 1,000 g/m<sup>2</sup>, with the largest standard lengths being up to 50 m. They are filled with a suspension of locally available sand via inlets. The sand-coloured, abrasion-resistant and extremely UV-resistant fabric blends in well with the landscape and is colonised by the maritime flora and fauna within a very short time.

The project-specific fabrication, in combination with so-called scour aprons, enables a coastal protection structure that is also secured against scour and subsoil erosion. The multifunctional heavyweight elements are used, among other things, in the construction of breakwaters, groynes, dams, dykes or for land reclamation. Here, they can replace the entire structure or function as the core of the structure with subsequent superstructure, for example with armourstones.

### **SoilTain Bags Xtreme – The new generation of sandbags are particularly robust and vandalism resistant**

Conventional SoilTain Bags are small-format sand containers for all applications in shore and coastal protection. They are made of geotextiles with mass of 600 to 1,000 g/m<sup>2</sup> and usually with a filling volume of 1 m<sup>3</sup>. They are easy to handle and can be used for temporary and permanent applications alike. Depending on the area of application and project-specific

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conditions, materials tested in accordance with BAW (Federal Waterways Engineering and Research Institute) such as nonwovens or fabrics and composites are used.

A new development from HUESKER is the SoilTain Xtreme material for sandbags. Thanks to the basis weight of 1,200 to 1,800 g/m<sup>2</sup> of the sand-coloured two-layer non-woven fabric, the SoilTain Bags Xtreme made from it have increased UV stability, a high sand accretion capacity and maximum resistance to abrasion and vandalism. Thanks to their special robustness and durability as well as their attractive appearance, they are preferably used with a filling volume of up to 2.5 m<sup>3</sup> in exposed locations and on beaches.

With the SoilTain Bags Xtreme, the success story of geotextile sand containers, which began in 1963 with the Ruestersieler Watt, is supplemented by another chapter and the next era of "sandbags" is ushered in.

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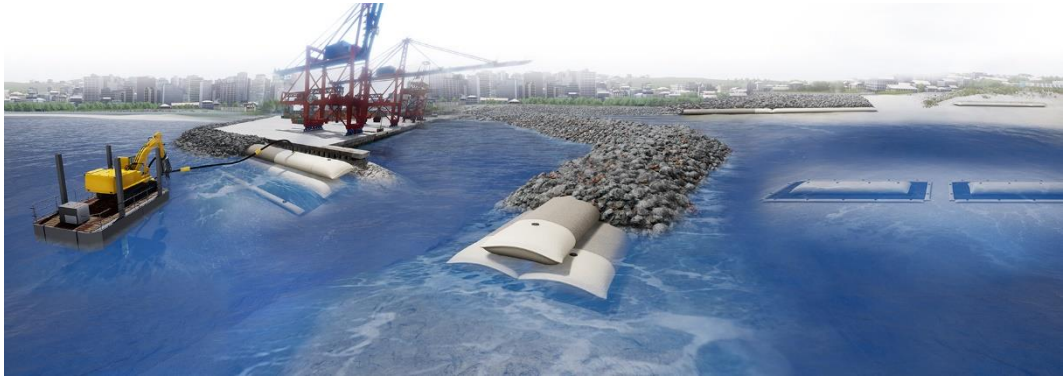
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**Pictures:**



*Pic 1 (HUESKER\_Areas of application SoilTain Tubes and Bags):*

Areas of application for geotextile HUESKER SoilTain Tubes or Bags



*Pic 2 (HUESKER\_Project Ayamonte Spain):*

Coastal protection with geotextile SoilTain Tubes in Ayamonte in Spain

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*Pic 3 (HUESKER\_SoilTain Tube filling in Ayamonte):*

Filling of the geotextile SoilTain Tubes in Ayamonte/Spain

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#### **About HUESKER:**

The HUESKER Group is one of the world's leading manufacturers of geosynthetics and technical textiles with headquarters in Gescher (Westphalia), Germany.

With more than 500 employees, the company operates globally with ten subsidiaries as well as trading and distribution partners in over 60 countries. HUESKER has been shaping international markets as a pioneer of textile weaving for 160 years.

The HUESKER Group substitutes conventional massive construction with sustainable and intelligent solutions based on modern, high-performance technical textiles and composites.

First-class engineering services, excellent competence in manufacturing, coating as well as tailoring of technical textiles, and an innovative spirit are the key to HUESKER's success.

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