



# GROUND-MIX

The special binding agent for  
the CSM/Soilmix procedure

HEIDELBERGCEMENT





# PROTECT THE ENVIRONMENT AND SAVE COSTS WITH GEO-HIGHTECH

Many construction projects in geotechnical engineering confront engineers with major challenges, and require special technical solutions. HeidelbergCement fulfils these requirements with the development and production of special construction materials for multiple fields of application in civil engineering. Using the special binding agent Ground-Mix, which is used in the CSM or Soilmix procedure, technicians and planners have a product with outstanding properties at their disposal.

## GROUND-MIX

For increased economic efficiency and reliability at the construction site



In order to achieve the required properties of the soil mortar (compressive strength, low permeability, erosion stability), the dosage and composition of binding agents are determined according to the intended use. High volume stability, sufficient load capacity of the suspension and low filtrate water output are, amongst other things, decisive for the preparation of a homogeneous wall.

### THE ADVANTAGES OF GROUND-MIX:

- Adjustable properties
- Low consumption (depending on the project)
- Optimised cutting rate

### POSSIBLE ACHIEVABLE END PROPERTIES:

#### Wall as static element:

Compressive strength of approx. 5-15 MPa  
Modulus of elasticity of approx. 2000-5000 MPa (acc. DIN 1048-5)

#### Wall as sealing element

Compressive strength of approx. 0.5 - 4 MPa (acc. DIN 18136)  
Water permeability  $k_f$ -value  $\approx 1 \times 10^{-8}$  m/s

Sinking of the cutter →  
into the subsoil







← Finished construction pit: CSM wall with inserted sheet pile wall



↑ The finished construction pit: CSM wall with inserted sheet pile wall



Production of the CSM wall in an open building side

## Ecological: The CSM (Cutter Soil Mixing) procedure

The CSM / Soilmix procedure is used for the production of walls for sealing or for construction pit linings, for ground stabilisation or immobilisation and for the production of simple foundation elements. The natural ground is mixed under continuous addition of the specific binding agent suspension (Ground-Mix) during cutting operation. This results in a multitude of major economic advantages compared to the standard construction methods:

- The existent ground is used as an additive (approx. 60-70%)
- Minimisation of ground excavation and transport
- This means fewer emissions (dust, noise, CO<sub>2</sub> and vibrations)



↑ Construction site set-up for the production of a suspension

↓ Incorporation of the steel beam into the fresh slot



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**HEIDELBERGCEMENT**

#### DELIVERY FORM

- bulk
- bags, 25 kg
- big bags

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We would like to stress that achieving the mentioned properties require a suitable production and processing of the building material as well as a proper, state-of-the art preparation on the construction site.