

PRODUCT DATA SHEET

Sika® Stabilizer-4601 TBM

Water-soluble bentonite extender for bentonite-based slurries in mechanized tunneling

PRODUCT DESCRIPTION

Sika® Stabilizer-4601 TBM is a liquid polymer that is used as an extender agent in slurry TBMs. It restructures soils with poor grading and low fines content, improving the mud rheological properties and increasing the plasticity and cohesion of soils. This helps to improve the balance of pressure in the working chamber, leading to better ground stability and slurry extraction.

Slurry TBMs are generally equipped with a double bulkhead at the front of the shield and the air cushion is maintained at the required working pressure between the two bulkheads. With its thickening effect, Sika® Stabilizer-4601 TBM helps the slurry to hold the pressure in the bubble and to be transferred homogeneously to the front of the machine. The modified rheology of the slurry will ensure that any difference in flow between supply and discharge pipes will be evened and better controlled.

WHERE TO USE

Sika® Stabilizer-4601 TBM is used for:

- Stabilizing challenging mix ground conditions
- Overcoming the issue of inadequate support pressure build-up
- Managing excessive groundwater
- Ensuring uninterrupted operation of the Slurry Treatment Plant (STP) by preventing foam production in the STP, avoiding pumps cavitation, and preventing obstruction of the shaker screens.

Sika® Stabilizer-4601 TBM is used for the following areas:

- Coarse and sandy soils with low fine content
- Heavily saturated soils with high water pressure

CHARACTERISTICS / ADVANTAGES

- Very good rheology modifier of bentonite slurry in soils with high porosity and high permeability
- Forms a filter cake creating a thin impermeable layer directly on the front wall and enabling a transformation of excess slurry pressure into effective support stress
- Reduces significantly filtrate losses of the bentonite slurries, ensuring filter cake efficiency, in particular when pumping has ceased and the slurry remains static in the excavation chamber without setting
- Creates plastic deformation properties in the suspension, providing an even and controlled support pressure and an increased face stability
- Easily matches the flow rate and pressure of the slurry with the TBM advance speed and ground conditions
- Highly recommended also during hyperbaric interventions
- Lowers inner friction and abrasiveness of the slurry
- Increases the cohesion of coarse sands and gravels
- Ready for use: no mixing required
- Compatible with API 13A and API 13B bentonite

PRODUCT INFORMATION

Composition / Manufacturing	Polymer mixture	
Packaging	Bulk	
	Intermediate Bulk Container (IBC)	1000 L
	Drum	
	Refer to the current price list for available packaging variations.	
Shelf Life	6 months from date of production	
Storage Conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to the packaging. Do not allow the Product to freeze. Refer to the current Safety Data Sheet for information on safe handling and storage.	
Appearance / Colour	Liquid, white	
Density	(1.050 ± 0.01) kg/L	(EN ISO 2811-1)
Solubility	Miscible with water	

APPLICATION INFORMATION

Recommended Dosage	The dosage of the Product depends on the following variables: <ul style="list-style-type: none">▪ Type of bentonite▪ Slurry mix design▪ Type of excavated ground▪ Groundwater pressure▪ TBM operation mode Note: Preliminary laboratory trials are always recommended to determine the optimum consumption and injection parameters. Contact Sika Technical Services for additional information.	
Product Temperature	Protect from freezing.	

SYSTEMS

Compatibility	Compatible with Sika® admixtures and other Sika® products. Contact Sika Technical Services for additional information.	
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BASIS OF PRODUCT DATA

related data.

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-

APPLICATION INSTRUCTIONS

APPLICATION

Direct injection into the TBM excavation chamber is recommended for best Product performance.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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Product Data Sheet

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