BPA
WATERPROOFING SYSTEMS

CEMTOBENT® MS BENTONITE WATERPROOFING LINER

Double sealing bentonite waterproofing liner system

PRODUCT DESCRIPTION

CEMtobent® MS system is a bentonite waterproofing liner system especially designed for structural waterproofing.
CEMtobent® MS can be used for the sealing and protection of reinforced concrete in underground structures and tunnels.
CEMtobent® MS consists of optimally complementary components:

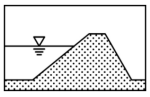
- the waterproofing is a double seal bentonite waterproofing liner with mineral aggregates, for mineral-active protection of the concrete structure
- the additional nonwoven lamination improves the bond and the functional properties of the waterproofing between the CEMtobent MS and the concrete structure

NOTE: CEMtobent CS-Plus and/or CEMtobent MS-Plus can be used as a high-quality protection against strong chemical attack from ground (ground water) and can be used as a gas barrier, e.g. methane and radon gas.

APPLICATION AREAS

CEMtobent® MS (MineralSeal) can be used for the sealing and protection of reinforced concrete in underground structures and tunnels. It can be used for vertical, horizontal, pre-application, post-applications or in combination.

CEMtobent® MS can be used as a sealant for retention basins, in landfill, dam and canal construction.



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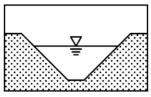

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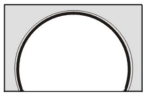

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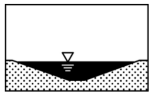

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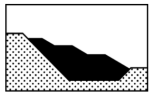

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HOW DOES CEMTOBENT® MS WORK?

The sealing process of the waterproofing system CEMtobent® MS is activated immediately by penetrating water causing a controlled reaction of the mineral admix and a swelling of the bentonite clay within the matrix forming a dense, impermeable waterproofing membrane. In contact with water the exposed mineral admixes and bentonite reacts and creating an extremely tight and strong, gel-like film, which seals the concrete structure (secondary sealing) and stops any water circulation between the membrane and the concrete. Even shrinkage cracks are reliably filed and sealed.

CHARACTERISTICS AND ADVANTAGES

- Higher puncture and tear resistance
- High compound shear strength
- Can be installed in every season regardless of temperature and weather conditions
- Quick and easy to install and low overlapping losses (during installation)
- self-healing properties when damaged

- Seals small cracks in the concrete
- Protection against ground water etc.
- More than 500% swelling volume
- May be pre-applied or post-applied
- Constant quality control tests to ensure consistent high quality

CERTIFICATION

- CE-Marking
- Resistance tests are available on request
- Environmental Clearance Certificate

PRODUCT DATA

	Waterproofing Liner CEMtobent® MS (MineralSeal)	Article-No.
Dimensions/ Packaging	CEMtobent MS 2.55 x 40.00 m (W X L); one roll; 102.00 m²; app. 520.20 kg/roll [other dimensions on request]	20-620
	CEMtobent MS 1.10 x 5.00 m (W X L); one roll; 5.50 m²; app. 28.05 kg/roll [other dimensions or thickness of the waterproofing membrane on request]	20-625
Storage	CEMtobent® MS (MineralSeal) should be stored off the ground in dry conditions.	

TECHNICAL DATA

Technical Datas	Test Method	Unit	Value CEMtobent MS
Mass per unit area, total	EN 14196	kg/m²	5.10 (1)
Mass per unit area, bentonite layer *(sodium bentonite)*	EN 14196	kg/m²	4.80 (1)
Mass per unit area, woven *(PP woven)*	EN ISO 9864	g/m²	100
Mass per unit area, nonwoven *(PP nonwoven)*	EN ISO 9864	g/m²	200
Thickness, total	EN ISO 9863-1	mm	7.1
Tensile strength MD / CMD	EN ISO 10319	kN/m	≥ 10.0 / 8.5
Puncture resistance	EN ISO 12236	kN	1.8
Peel strength	ASTM D 6496	N/m	600
Permeability	ASTM D 5887	m/s	≤ 5.00E^{-11}

Index Flux	ASTM D 5887	$m^3/(m^2s^1)$	≤ 5.00E^{-9}
Resistance to cold temperatures	ASTM D 1970	°C	-10°C; no cracks and fractures (2)
Reaction to fire (PE-Membrane)	EN ISO 11925-2 EN 13501-1		Class E
Swelling capacity (Bentonite)	ASTM D 5890	ml/2g	≥ 24
	DIN 18132	%	≥ 500
Montmorillonite content (Bentonit)	CUR 33	%	≥ 75
Dangerous substances	Less than required by national regulations in the EU member states		
Weather resistance	Permanently for at least 25 years for applications in natural soils (with 4 ≤ pH ≤ 9) and soil temperatures ≤ 25 °C		

(1) at 12% moisture content
(2) Self-testing

ADDITIONAL INFORMATION

Surface:

Bentonite waterproofing liner CEMtobent® MS should be placed on a properly prepared flat surface that is free from voids > 20mm and free from construction debris. Cracks > 1 mm and/or offsets > 1 mm should be sealed with CEMtopaste® before installing the bentonite waterproofing liner. Minimum load / minimum covering of ≥ 200 kg/m² per 50 cm when laid in pre- or post-application (observe frost resistance) in according to the öbv Braune Wanne guideline. The protective layer is to be determined in coordination with the backfill material.

Methods of the sealing (the overlap)

- Overlap with Bentonite Powder or CEMtopaste (app. 15 cm).
- Overlap glued with CEM 805 Adhesive.
- In addition to the above nail fixings may be used to secure the overlaps if required

Preparation and general advice

Surrounding air temperature: minimum -5°C
(The mentioned temperature is for valid areas in which no additional measures need to be taken during application.)

Environment and health

This product does not represent a hazardous substance within the meaning of the EU Hazardous Substances Regulation. A safety data sheet for transport, placing on the market and use is available on the request.

Dangers and Safety

The essential safety, toxicological, physical and ecological data for the handling of CEMtobent® MS can be taken from the product-specific safety data sheets.

Data

All technical data stated in this product data sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

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Legal advice

All above mentioned Information concerning products, especially any recommendations and advices relating to the application and use of BPA products are given in good faith based on BPA´s current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with BPA's recommendations.

In practice, the differences in materials, actual site conditions and other factors outside are such that no warranty nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered.

The user of the product must test the product's suitability for the intended application and purpose before proceeding with the full application of the products. BPA reserves the right to change the properties of its products without notice.

Users must always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request. All sales of BPA are subject to our current terms and conditions.

Local Restrictions

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local product data sheet for the exact description of the application fields.