

DSI Waterproofing System



INTRODUCTION

The DSI Waterproofing System is a needle-punched non-woven impregnated membrane. The membrane structure comprises water absorbing and water swelling polymers. An optional one-side Polyethylene coating on top of the needle-punched non-woven membrane and the self-healing ability of the DSI Waterproofing System ensure optimum performance for water sealing applications.



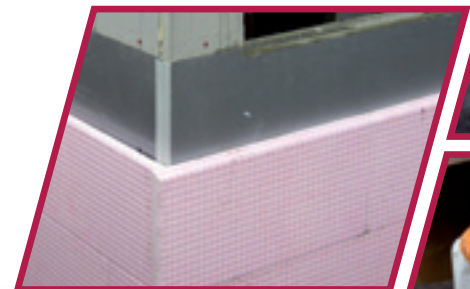
FIELDS OF APPLICATION

- Protection of structures against ground water
- Permanent waterproofing of underground tunnels
- Water sealing for excavations
- Waterproofing of excavation pits, dams or for slope stabilization
- Application in structural engineering: waterproofing of basements, garages or flat roofs



MAIN ADVANTAGES

- Quick and easy to install
- Easy handling on-site due to light-weight design
- Self-healing properties of the hydrophilic, water reactive polymers
- Waterproofing safety even when the system is damaged during installation
- Special welding equipment or specially trained personnel are not required
- Safe solution for sealing tiny cracks and voids in concrete
- Special formulations for salty water conditions are available on request
- Economic alternative to synthetic liners, bituminous products and coatings
- Environmentally sound waterproofing system
- Approved by TU Braunschweig, Germany
- Innovative sealing technology



SYSTEM DESCRIPTION



- Penetrating ground water causes the polymers to swell – the DSI Waterproofing system is sealed
- SAP (Super Absorbent Polymer) features optimum swelling capacity
- Permanent protection against penetrating water
- Sealing effect up to 2.5 bar water pressure - optional higher pressure resistance
- Installation independent of climate conditions and temperatures
- Overlapping areas are bonded to form a waterproof surface
- Tough and resistant, high shear strength

SYSTEM COMPONENTS



- Swelling, needle-punched non-woven synthetic membrane
- White polypropylene fibres are fully impregnated with swelling polymers
- Water absorbing swelling polymer
- Flexible roll dimensions – 2 x 50 m by default
- Optional UV resistant PE or any other polyolefin sheeting available on one side
- Optional approved injection tubes available
- Patented technology

SPECIFICATIONS



Characteristics ¹⁾	Unit	Value
Mass per unit area according to EN 965: dry / wet after swelling / re-dried	[g/m ²]	450 / 8200 / 400
Thickness at surcharge of 2 [kN/m ²] according to EN 964: dry / wet after swelling / re-dried	[mm]	1.9 / 7.5 / 4.5
Dry thickness at surcharge of 20 [kN/m ²] / 200 [kN/m ²]	[mm]	2.2 / 1.3
Maximum tensile force according to EN 1031: dry / wet after swelling / re-dried	[kN/m]	11.6 / 3.4 / 10.3
Associated elongation according to EN 10319: dry / wet after swelling / re-dried	[%]	69 / 117 / 92
Static puncture test according to EN 12236: dry / wet after swelling / re-dried	[kN]	1.7 / 1.0 / 1.6
Associated movement of plunger according to EN 12236: dry / wet after swelling / re-dried	[mm]	61 / 108 / 61
Class of robustness	[---]	GRK 3
Minimum swelling pressure	[kN/m ²]	190
Water permeability according to DIN 18130	[---]	TX-KP-STUO
Initial swelling	[m/s]	< 5 x 10 ⁻⁹
Dry-Wet-Testing	[m/s]	< 3 x 10 ⁻⁹
Frost-Thaw-Cycle (4 cycles)	[m/s]	< 3.9 x 10 ⁻⁹

¹⁾ The indicated values are laboratory values and may deviate on-site.

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