

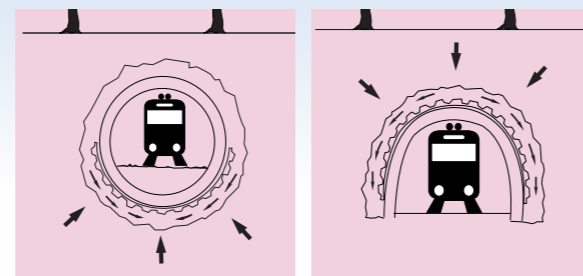
PM-S 20 with 20 mm knobs - efficient against pressure and water

PM-S 20 is considered as an ideal solution to drain away rising, seepage and perched water. In underground work, PMI-knobbed rolls are exposed to particularly high stresses and have to meet extreme requirements. For example, the water load is particularly high in underground construction projects such as tunnels or underground and multi-store parking garages.

PM-S 20 in tunnel constructions:

Especially tunnel projects depend on effective accompanying measures of drainage. No problem for PM-S 20: installed vertically against the rock with the knobs facing outwards, these form a perfect drainage system. Like in a channel, the water from the rock is drained through the knobs and led around the construction trench. With a gravel base course placed under the invert, the groundwater level can be balanced on both sides of the construction. Safety and usability of a tunnel always depend also on the fact whether inner shell and invert can be durably protected against water damage and subsequent frost. The best solution is

We recommend here our product PM-S 20 with 20 mm high knobs. The draining capacity of these knobbed rolls of environment-friendly, durable polyethylene is excellent. PM-S 20 withstands pressure loads in underground constructions without any problem.



found when surface and layer waters are largely collected in the upper and lower area between the inner and outer shell of the tunnel and then conveyed away through drainage and percolation layers.

PM-S 20 as a safety and control layer:

When storing water-hazardous liquids, it is important to protect especially soil and water. That can be achieved by combining an impervious course with PM-S 20. The knobs (laid downwards onto the impervious course) create cavities that can be continuously controlled. If chemicals run out, they are detected in time and rinsed off through special pipe runs.

PM-S 20 as a permanent shuttering:

PM-S 20 can be installed horizontally and vertically as a permanent shuttering between the sprayed concrete and the wall. The sprayed concrete acts as a filter, preventing soil particles from getting into the percolation layer.

PM-S 20 in underground car park constructions:

During the construction period PM-S 20 enables controlled drainage of water so that the curing process of the concrete is not impeded by moisture.

If placed vertically, PM-S 20 can be used as percolation layer; i.e. it drains the confined ground water from the sides down to the annular drainage.

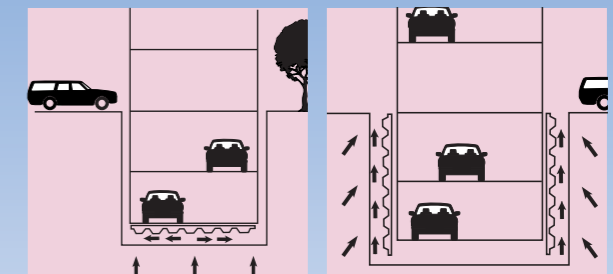
In horizontal placing, PM-S 20 is installed between foundation plate and surface layer. With a rising ground water level, the water is conveyed away into the drain pipe.

PM-S 20 as a protection against ponding:

Installed as a protection layer against ponding, PM-S 20 also shelters from wetness in rooms at risk: placed with current between topping and foundation plate, it drains ingressing water so that it can be pumped off.

Technical specifications:

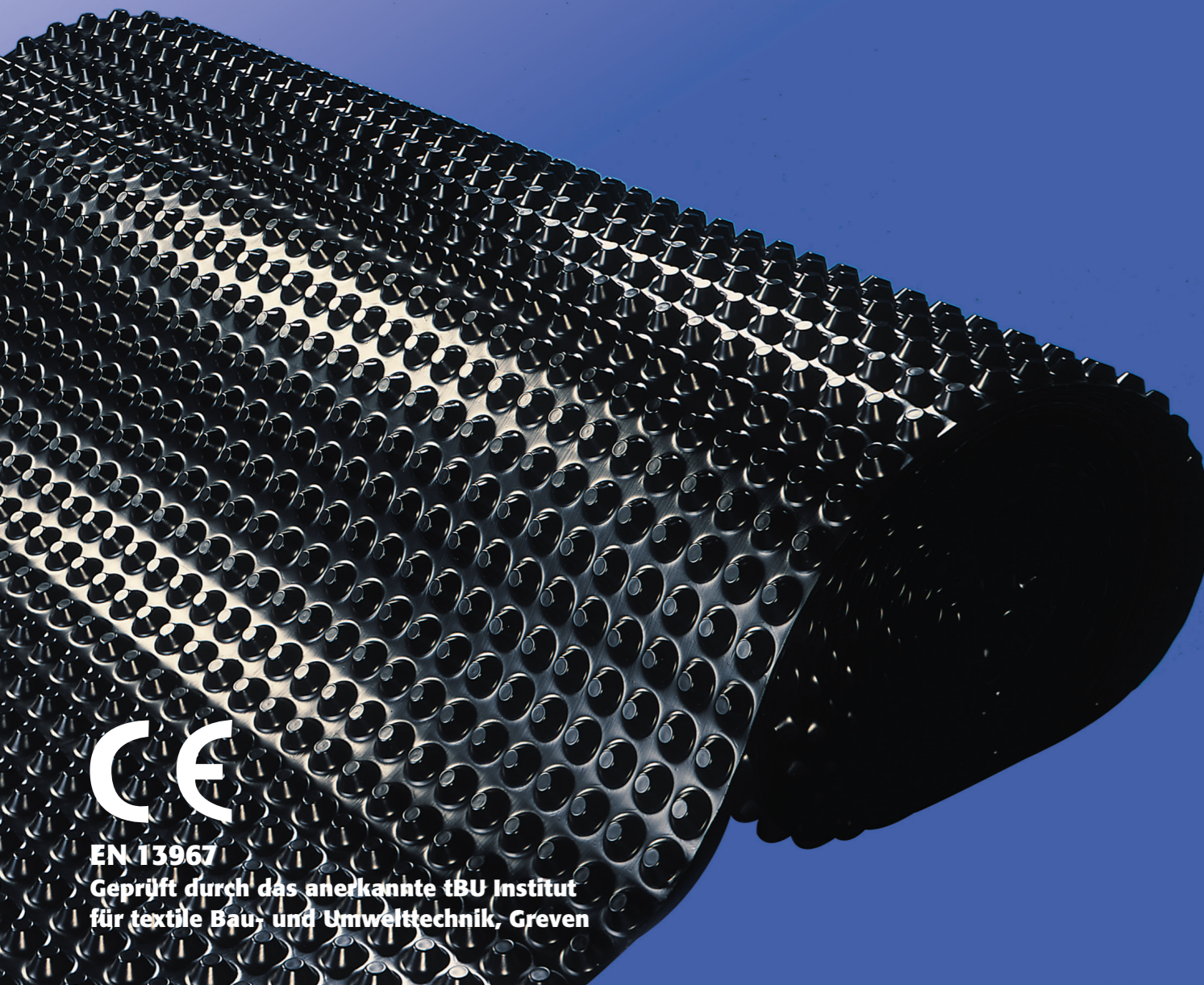
material	HDPE approx. 1000 g/m ²
burst pressure	approx. 180 kN/m ²
knob height	approx. 20 mm
roll dimensions	1.9 x 20 m
also available in sheets	upon agreement
drain capacity	approx. 12 litres/sec. and m approx. 720 litres/min. and m approx. 43200 litres/h and m
air volume between the knobs	approx. 14 litres/m ²
temperature range	-30 °C to +80 °C
chemical properties	chemical-, root- and rot-resistant, harmless to drinking water
flammability rating	B2 (DIN 4102); B1 (DIN 4102) possible for special requirements





PM-S 20

For heavy-duty applications in underground engineering



EN 13967
Geprüft durch das anerkannte tBU Institut
für textile Bau- und Umwelttechnik, Greven

PMI-knobbed rolls PM-S 20 perforated for roof greening

The high drainage and water storage capacity of this knobbed roll makes it perfectly suitable for greening garages and flat roofs. There is a wide range of plants such as grasses, spices, sedum, phlox, sempervivum, and many others to choose from.

Two essential requirements must be met:

- the load-bearing capacity of the roof must be sufficient for the greening
- the damp-proofing must be sound

Advantages of greenroofs:

- protection of the waterproof membrane against radiation, temperature and atmospheric influences
- additional thermal insulation
- extended service life of the roof
- living space for animals and plants
- improved sound insulation
- absorption of dust and pollutants

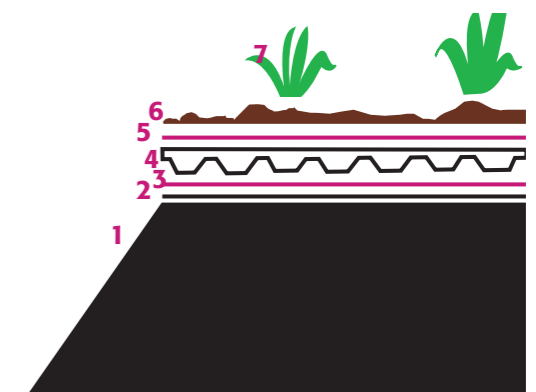
Construction of the greenroof:

- 1 roof
- 2 waterproof membrane
- 3 root barrier for the waterproof membrane
- 4 PM-S 20 as drainage and water-storage
- 5 fabric as filter
- 6 soil, substrate
- 7 plant material



Technical specifications:

material thickness	HDPE approx. 1000 g/m ²
burst pressure	approx. 180 kN/m ²
knob height	approx. 20 mm
roll dimensions	1.9 x 20 m
also available in sheets	upon agreement
fire behaviour	Klasse E



Our product range:

- Knobbed rolls in various versions, with accessories
- Building accessories / roof accessories
- Stonework-barriers
- Building films
- Vapour barriers
- Roof underlays



PMI-Plast GmbH • Bullermannshof 10 • Gewerbegebiet Hülsdonk-Nord • D-47441 Moers
Tel.: 0049 (0) 2841-880 69-0 • Fax: 0049 (0) 2841-880 69-50 • E-mail: info@pmi-plast.de • www.pmi-plast.de