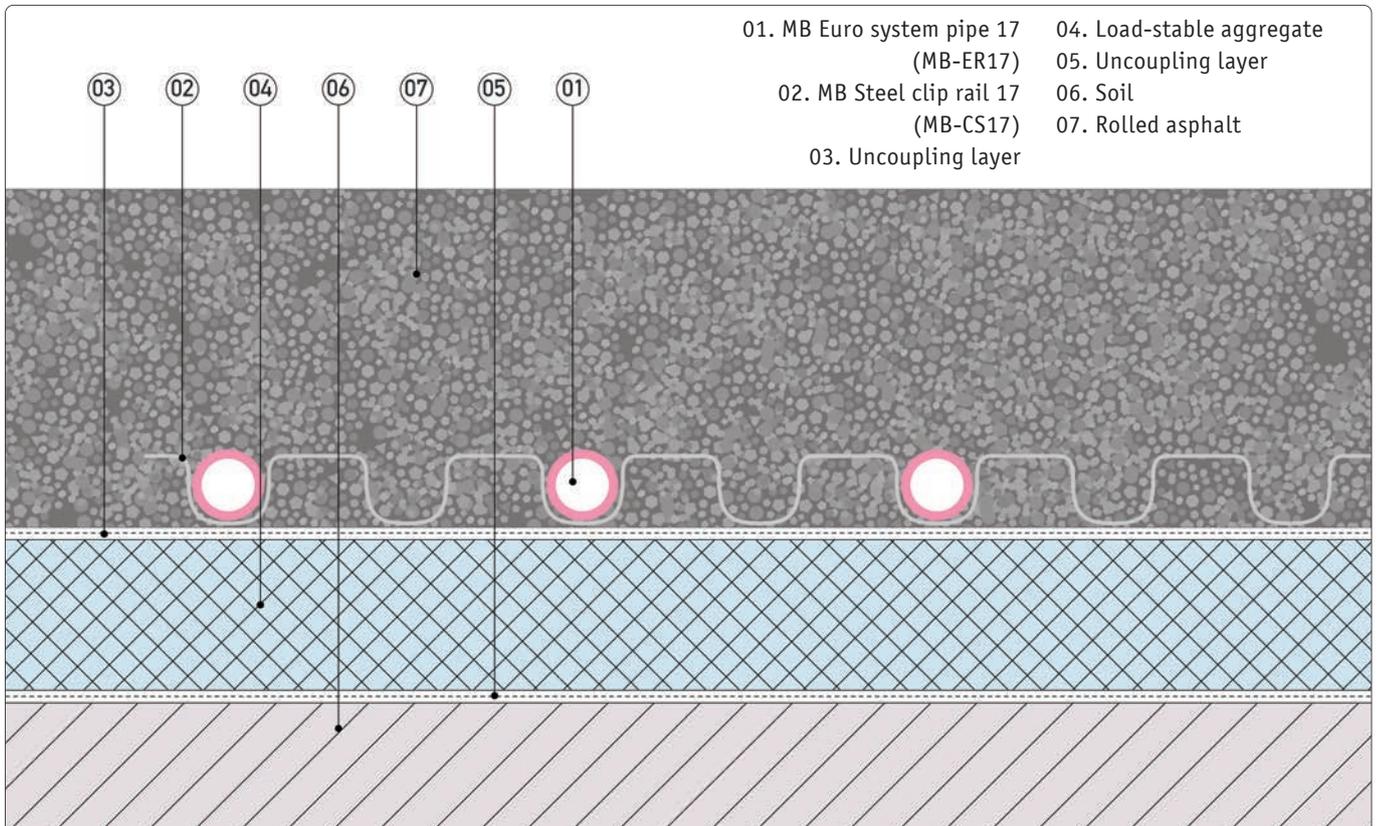
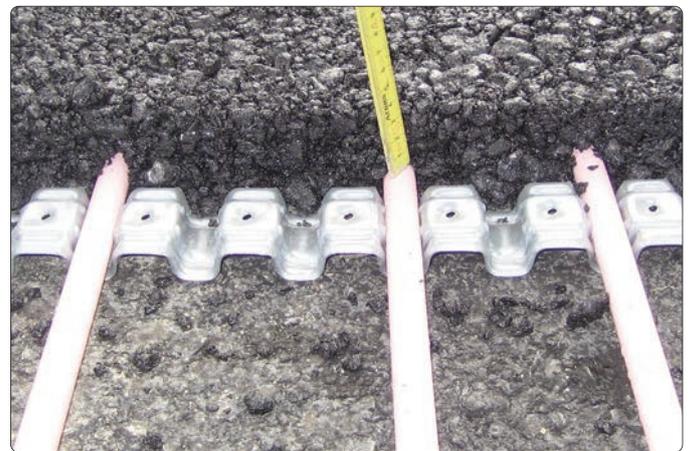


**Applications**

The MWA is a system for heating both industrial and outdoor areas. These areas may be exposed to normal weather.

**Load capacity and construction**

On principle suitable for any traffic load. The entire construction is determined by the structural engineer. The structural engineer measures the requirements based on how the area will be used. This includes e.g. concentrated loads from parked vehicles and even their dynamic loads when approaching/leaving. The construction layout shown below is merely an example. The location of the MB Euro system pipes (MB-ER17) are always based on the specifications of the structural engineer. The height reference point on the site which must be met must be checked to ensure the planned construction height is given throughout. When planning the construction the relevant laws, regulations, directives and standards.



The illustration and design are non-binding and only exemplary.

### System installation

Installation follows the MULTIBETON plan. Then follow the MULTIBETON installation and technical guidelines. In addition, planning and installing the MULTIBETON surface heating system must comply with the relevant laws, regulations, directives and standards. Additional instructions of manufacturers for other trades and the recognised rules of technology and proper trade workmanship must be observed.

### Substrate and base course

The ground must be able to support the rolled asphalt construction. Otherwise an additional base course is required. Ideally, the entire area should have a homogeneous mixture, good consolidation and drainage.

### Water drainage

For outdoor applications it's extremely important to properly drain off condensate using drainage systems or slopes. The condensate must not collect at the edge of the under-soil heating and form additional ice.

### Frost control

Outdoors, the heating circuits must be filled with suitable antifreeze. The antifreeze to heating water ratio depends on the total amount of fluid and the lowest expected outdoor temperature.

### System separation

Due to the water/antifreeze mixture in the under-soil system, the system is connected to the heating system via heat exchangers. To prevent the heat exchanger and the primary end from freezing if the heating system fails, e.g. a thermostat should shut off the pump for the secondary circuit if the temperature falls below the  $-3\text{ °C}$  limit.

### Control

A suitable control must be installed to ensure the area is kept free from snow and ice. This measures the air temperature, soil temperature and humidity taking into account the system capacity and delay.