

Application areas

The FRA-17 is a heating and cooling system for general residential and commercial building construction, particularly suited for the renovation and refurbishment of older buildings without additional build-up height, without adding new weight, and with fast controllability.

Technical data

Construction height	mm of the existing screed
Pipe coverage	minimal
Construction mass	kg/m ² of the existing screed
Traffic load	kN/m ² of the existing screed

Prerequisites for milling

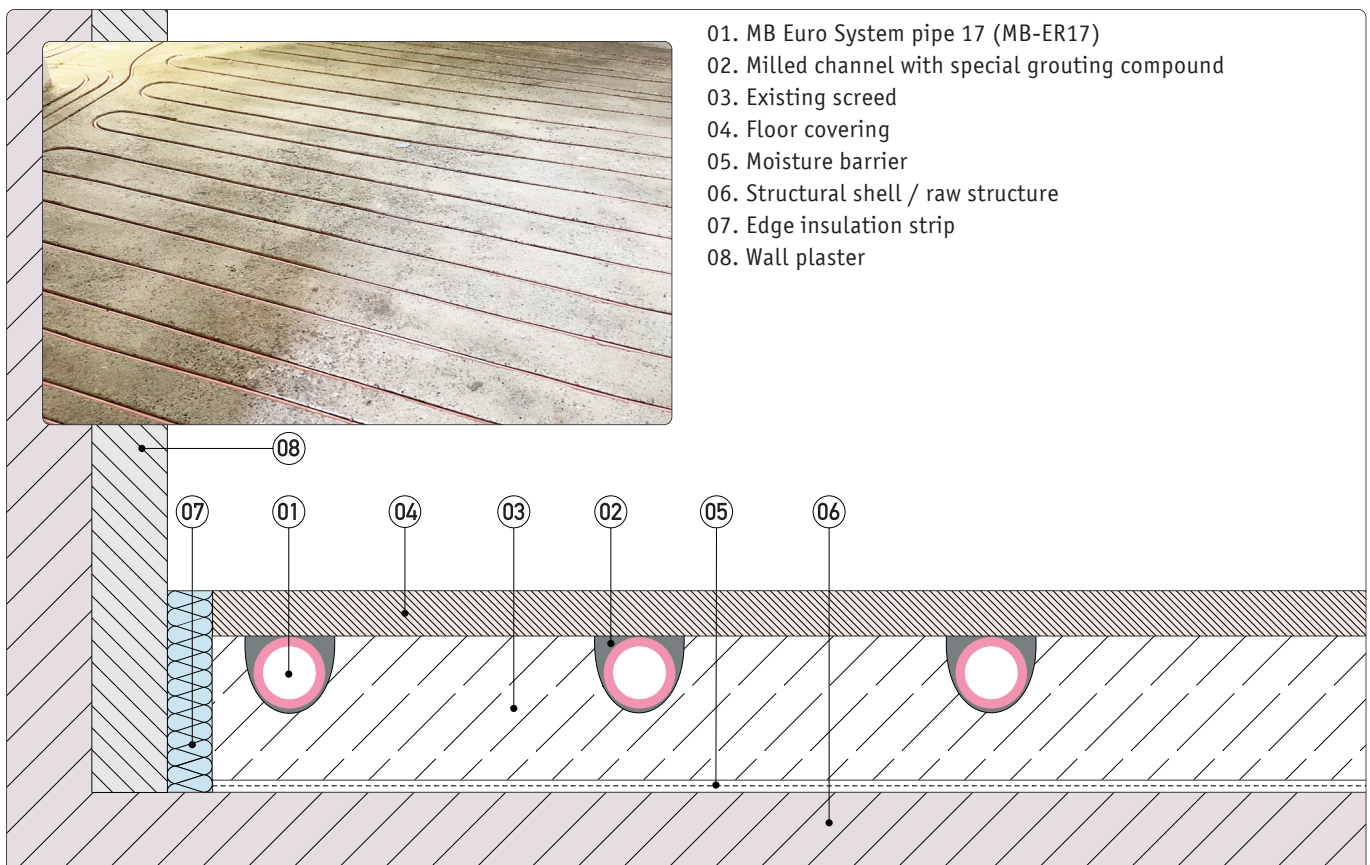
A prerequisite for milling the channels is a millable screed (minimum thickness of 4 cm). Ceramic floor coverings, natural stone, and mastic asphalt must be sanded down. Residues of adhesive etc. must be completely removed by grinding the screed. After laying the system pipes, the milled channels are sealed. For this, a special grouting compound with high thermal conductivity is applied. The drying time is extremely short. Compressive and tensile strength depend on the existing screed. As this is an existing screed, low crack tendency and low shrinkage can be expected. After sealing the milled channels, the floor is not yet ready for the final flooring. Full-surface skim-coating/leveling of the entire area must be carried out by the following trade if required.

General principles

Screed milling is based on VOB DIN 18365 (flooring works), DIN EN 13813, and the technical data sheet on interface coordination for heated floor constructions.

Please note:

- All adhesive residues must be removed beforehand, as otherwise adhesion of the primer or grouting compound cannot be guaranteed.
- Please note that the grouting compound may settle during drying. Depending on the floor covering, the following trade must check whether a second/fine skim-coat and rework of the entire surface is necessary.
- Local unevenness in the existing screed may cause the system pipes to protrude 1–2 mm above the floor surface in some areas.
- Tiled areas intended for milling will only be filled if they have been prepared with a “concrete contact” primer one day before the milling date.
- For wood flooring as the top floor covering, it is recommended to clarify the compatibility of MULTIBETON products with the flooring installer beforehand in detail.



01. MB Euro System pipe 17 (MB-ER17)
02. Milled channel with special grouting compound
03. Existing screed
04. Floor covering
05. Moisture barrier
06. Structural shell / raw structure
07. Edge insulation strip
08. Wall plaster

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

General floor construction

MULTIBETON develops and manufactures energy-efficient heating and cooling systems for a wide variety of application and usage areas.

System installation

The basis for installation is the MULTIBETON planning. Installation must then proceed according to MULTIBETON's assembly and technical guidelines. Furthermore, for the planning and execution of screed milling for the MULTIBETON underfloor heating/cooling system, the instructions of manufacturers of other trades, as well as the recognized rules of technology and professional workmanship, must be applied.

Floor coverings

Since surface heating is very widespread, the building owner can choose from a wide variety of floor coverings. Almost all manufacturers offer floor coverings suitable for underfloor heating. Usable floor coverings include textile coverings, natural stone, resilient coverings, ceramic coverings, parquet, laminate, and of course wooden floorboards. When installing vapor-tight coverings or solid wood, application-specific technical advice should be obtained. Installation of the floor covering should follow the general processing guidelines of the flooring trade. A cleaning sanding must be carried out before installation. Tiles must always be installed on a decoupling mat.

Silent cooling

The MULTIBETON underfloor heating is excellently suited for "silent cooling". These systems are cost-effective, as they only require a chiller or a reversible heat pump with suitable controls. The maximum output of "silent cooling" is determined by the dew point calculation, the calculated minimum cooling supply temperature, and the human perception of comfort. With an output of approx. 30–50 W/m², comfort is ensured in summer, and any air conditioning systems can be sized smaller.