LATER CUT GROOVED SCREEDS FOR HOT WATER UNDERFLOOR HEATING SYSTEMS (UG 21)

If you want to install a panel heating system in an old building, you can choose between different system variants. While the conventional wet installation in the screed is combined with a complete replacement of the entire floor construction, the underfloor heating can alternatively be installed in existing screeds by subsequently cutting (milling) grooves without changing the existing screed height.

RETROFITTING UNDERFLOOR HEATING IN EXISTING BUILDINGS

For the cutting method, channels for the system pipe are cut (milled) into the existing screed with the help of a special floor miller. This method can be used with various types of screed, such as cement or calcium sulphate screeds. After inserting the system pipes into the milled grooves, they are levelled again before the flooring is laid. Before starting the work, the craftsmen check the old screed in particular for load-bearing capacity, thickness as well as suitability. Afterwards they do the milling work and install the new pipes. As a general rule, the thicker the existing screed, the higher its load-bearing capacity and thus the more suitable it is. The standard thickness values are also based on the specifications of DIN 18560, which specifies a thickness of approx. 60 mm for floating cement screeds, for example. With regard to thermal insulation and energy efficiency of the insulation or the entire floor construction from the existing building, it is also urgent to consult the heating engineer and/or energy consultant.

PROFESSIONAL KNOW-HOW IS ESSENTIAL

Depending on the condition of the screed in particular and/or in case of incorrect milling, cracks can occur in the channels. The possible consequences range from damage to the building structure to total damage to the floor construction. The milling work should therefore be done by very well trained and experienced craftsmen from specialist companies. Professionals are required here and „practising“ in the building project should be avoided at all costs.

BACKFILLING, LEVELLING AND DECOUPLING

The distances between the channels are specified either by agreement or according to a previous calculation. Backfilling of the cut grooves is then done according to the manufacturer‘s specifications, usually with stable, synthetic-modified levelling compounds. To balance the load and heating power, the surface is then usually flattened with reinforced, self-levelling levelling compound in layer thicknesses of 5 to 10 mm. In combination with parquet, thin-layer decoupling underlays should also be sticked to the levelled screed to reduce the shear stress on the subfloor caused by the parquet. The screed and/or the structure must also be adequately tested and prepared before starting the top flooring work. As this is a non-standard construction, the parquet and flooring installer should have the load-bearing capacity and suitability of the construction a written confirmation or approval of the client.

INSTALLING FLOOR COVERINGS ON SUBSEQUENTLY MILLED SCREEDS

EUnfortunately, there is no one-size-fits-all recommendation for the installation of floor coverings on screeds that have been later cut grooved. The recommendations vary depending on the profile of requirements, preferences, wishes or even the specifications of the manufacturer, prospective customer or planner. If you know the exact type and designation of the subfloor and covering, we will be pleased to advise you.

The described build-ups are „special constructions“, some of which have been tried and tested for years, but the build-up for floor covering installation must be contractually agreed separately with the client and approved in writing. It is also essential to provide information and specifications on pipe coverage, suitable flooring, functional heating for leak testing, flow temperatures, etc. The answering of possible questions regarding thermal issues, as well as the assessment and evaluation of whether there are significantly higher risks due to thermal issues with retrofitted heating pipes compared to conventional underfloor heating systems, is the responsibility of the manufacturer or installer of the underfloor heating system and/or the planner/architect and accordingly cannot be evaluated on our part.

As it is so often the case in building management, the same principle applies here: The better the communication between planner, client and executing crafts in advance, the more clear the responsibilities and the easier the realisation.

Regarding examination of subfloor and subfloor preparation, the same specifications are valid as for bonding on old screed. Details can be found in our Technical Information UG 07 „Bonding on old screed“.

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POSSIBLE STAUF INSTALLATION MATERIALS ON LATER CUT GROOVED SCREEDS

Textile floor coverings:

- Priming of the screed and the channels: e.g. STAUF D54 or STAUF VDP 160
- Filling of the channels: e.g. with STAUF RM
- Priming of the filled sections: e.g. STAUF D54 or STAUF VDP 160
- Levelling: e.g. STAUF XP 20 with addition of STAUF REINFORCED FIBRES
- Bonding of the textile coverings: e.g. STAUF D 11 or STAUF D8

Resilient flooring:

- Priming of the screed and the channels: e.g. STAUF D54 or STAUF VDP 160
- Filling of the channels: e.g. with STAUF RM
- Priming of the filled sections: e.g. STAUF D54 or STAUF VDP 160
- Levelling: e.g. STAUF XP 20 with addition of STAUF REINFORCED FIBRES
- Bonding the resilient flooring: e.g. STAUF D 5, STAUF D 50 or STAUF D 20

Multilayer parquet:

- Priming of the screed and the channels: e.g. STAUF D54 or STAUF VDP 160
- Filling of the channels: e.g. with STAUF RM
- Priming of the filled sections: e.g. STAUF D54 or STAUF VDP 160
- Levelling: e.g. STAUF XP 20 with addition of STAUF REINFORCED FIBRES
- Decoupling the subfloor: STAUF polyester fleece bonded with e.g. STAUF Multilayer, STAUF SMP 930 or STAUF SMP 950.
- Bonding the multilayer parquet: STAUF Multilayer, STAUF SMP 930 or STAUF SMP 950

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