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Grouting of voids in tile beds and screeds

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Failures traceable to **voids and hollows** below ceramic/natural stone coverings, screeds and bonded-construction (vibrated floor) coverings are regularly encountered in everyday practice. The necessary remedial works, which frequently amount to wholesale refurbishment, with accordingly high costs, disruption and downtimes, place an enormous burden on clients and contractors.

Yet, there is an alternative to such costly and time-consuming works – and, indeed, one which is often in keeping with the client's wishes.

This entails rectification of the defects with neither damage to nor removal of the existing covering.

This neat solution allows the flawless appearance of the finish to be preserved at a fraction of the cost of a full-scale refurbishment.



Voids in tile bed.



Porous cement screed.

Soprodur® microcement void filler

The remedy takes the form of a microcement suspension (e.g. Sopro Soprodur® microcement void filler) injected, if necessary under pressure, below the covering or mortar layer, where it can spread out to fill the voids and hollows. Trial injections should be performed in advance to facilitate assessment.

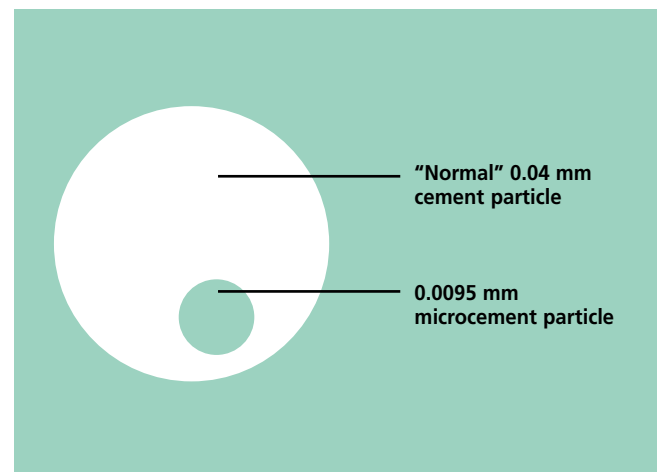
Elimination of voids and hollows:

A cement suspension incorporating microcement may be used to grout even the finest cracks in thin tile beds, porous thick beds and screeds with underside voids.

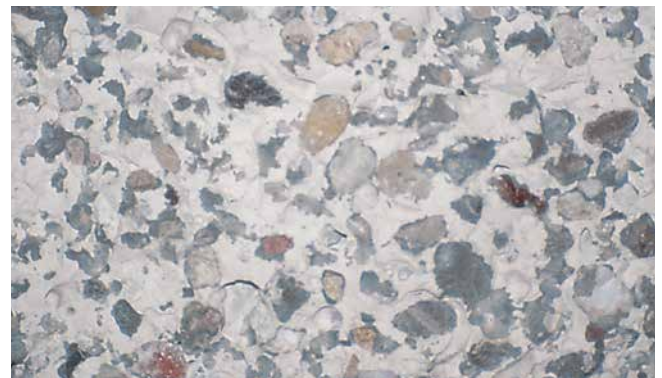


Advantages of Soprodur® technology:

- No need for wholesale refurbishment
- No dirt/debris or disruption/downtimes
- Preserves appearance of existing finish
- Facilities can resume operation the very next day



Particle size comparison.



Dense microstructure after grouting with Soprodur® microcement void filler.

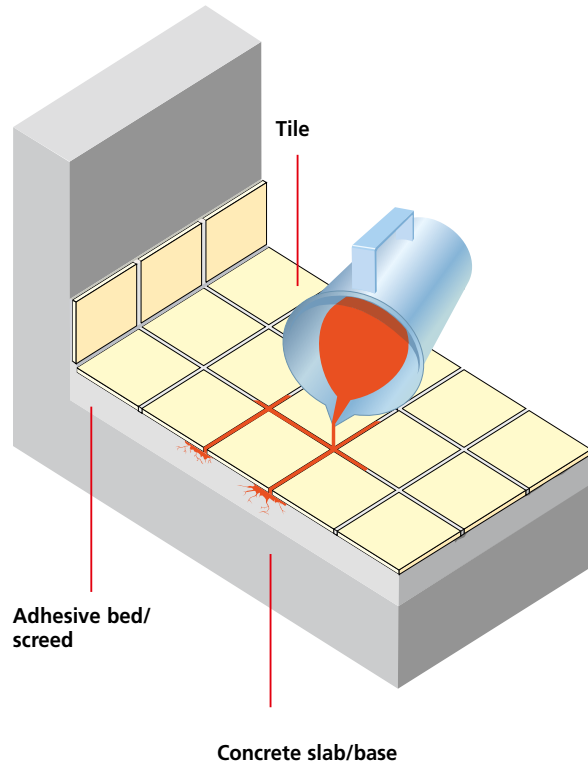
Soprodur® microcement void filler

1. Micro-impregnation technique

The micro-impregnation technique is the simplest method of filling existing voids. The prepared material is poured via an open or uncovered joint into the pre-wetted voids/hollows until these are completely full. Surplus material is then removed from the tile covering using a damp sponge. Finally, the stiffened suspension is raked out of the joints, which are then finished with tile grout.



Filling of voids via open joint.

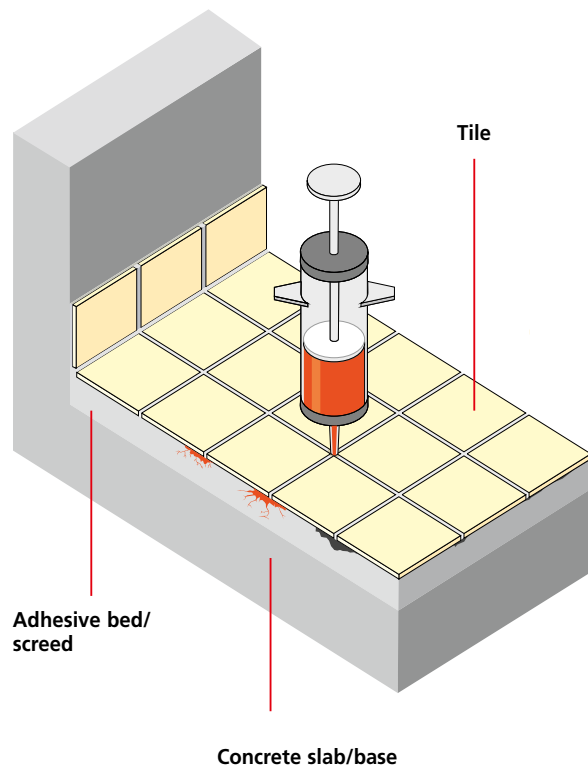


2. Micro-syringing technique

With this method, a hand syringe is used to inject the suspension safely and swiftly via open joints or drill holes. The custom-developed Sopro hand syringe allows the filling of voids at pressures of up to 2 bar.



Small-scale void grouting using hand syringe.



Soprodur® microcement void filler

3. Micro-injection technique

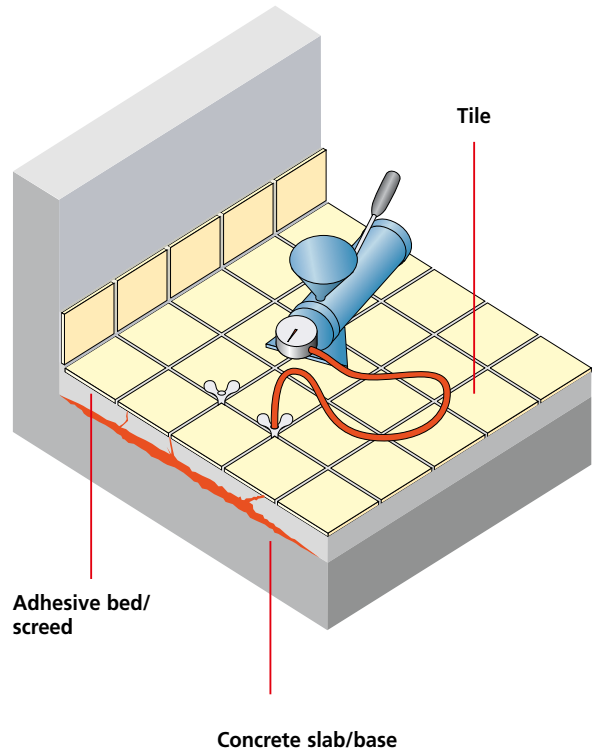
The micro-injection technique may be adopted in cases where the previous two methods prove unsuitable.

Here, the suspension is injected at pressures of up to 10 bar. Tight-fitting packers are used for injection to prevent the suspension from escaping from the drill hole at the sides.

The required number of drill holes and packers depends on the construction type and void size (1–5 holes/m²).



Void grouting with injection press (up to 15 bar).



Choosing the right packer

Sopro tile packers are used to grout voids below tiles, thin adhesive beds, surface filler etc. where the suspension is required to flow out sideways.

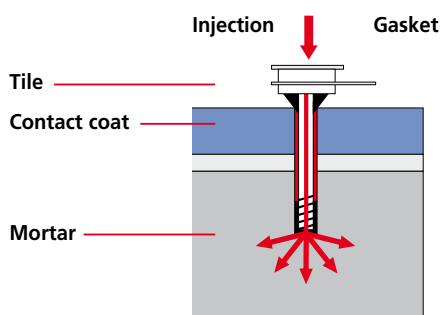
Sopro mortar packers, which are provided with downward-pointing openings, are used to consolidate standard bedding mortars or screeds with underside voids.

The packers are connected to an injection press, which forces the suspension into the voids/hollows at pressures of up to 10 bar.

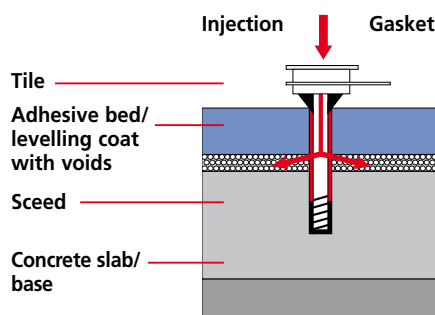
Prior to grouting with suspension, the voids/hollows should be pre-wetted with water using the same injection press.

After the voids have been grouted, the tile covering should be ballasted (e.g. using packs of tiles or mortar bags) for optimum bonding. The packers are then removed and cleaned with water.

Sopro mortar packer



Sopro tile packer



Grouting of voids below stair covering.

Soprodur® microcement void filler

Guidance on use:

- Identify voids/hollows in advance by tapping coverings and mark position.
- Where used in conjunction with unbonded screeds, floor drains or similar constructions, suspension should not be allowed to infiltrate underlying insulation, perimeter strip or other cavities, e.g. through pervious or improperly incorporated separating layers or perimeter strips. Excessive material loss may be a sign of such infiltration.
- Where a floor heating system is installed, care should be taken to prevent damage to heating wires.
- Soprodur® microcement void filler is not suitable for particularly moisture-sensitive substrates (e.g. timber) or certain types of natural stone (e.g. white marble).

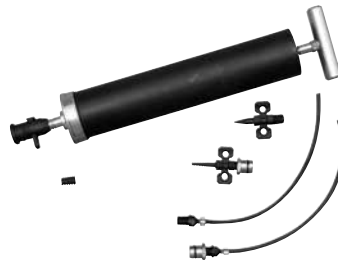
Soprodur® equipment:



Professional mixing device



Soprodur® microcement void filler



Hand syringe



Injection press

Refurbishment of vertical surfaces*



Soprodur® microcement void filler may also be used for durable repairs to wall surfaces.




Sopro 6 mm tile packers



Sopro 6 mm/8 mm mortar packers

* Where voids and hollows in wall surfaces are to be repaired, these should first be pinpointed as for floors and, where necessary, the covering should be properly secured against possible detachment during injection.

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