

## Dry Levelling Compound

# JUPITER



CRK | (012) | Rev 1  
April 2013

- Natural slate aggregate
- Suitable for levelling between 10mm – 60mm

The JUPITER dry levelling compound is suitable for levelling uneven substrates from between 10 and 60mm and filling voids up to 150mm.

### Description

The above mentioned products are mineral granules with porous structure consisting of clay slate, a natural raw material swelled in the course of a thermal procedure.

Product standard: DIN 4226, Part 2,

Delivery form: Art. Nr 40 19 451 - 50 litre sack, grain size:2-4mm. Density ~570 kg/m<sup>3</sup>

Strength: Dry fill: Grain size 2 - 4 mm = 6.6 N/mm<sup>2</sup>

Thermal conductivity: Grain size 2 – 4 mm: R = 0.16 W/mK

Moisture behaviour: non-hygroscopic

Fire protection/ behaviour in fire:

Building material class A1 according to DIN 4102, i.e. non-combustible; heat-resistant up to approx. 1,100° C.

### Resistance:

Frost resistant according to DIN 52104, weather resistant according to DIN 52104, pest resistant, rot-resistant, moisture indifferent, acid- and lye resistant.

### Raw Material:

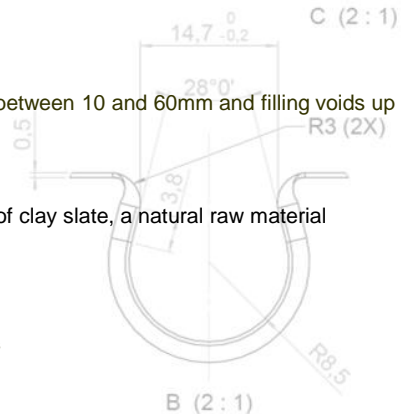
The raw material for the manufacturing of the granular compound is early carbon age slate (clay slate).

Average chemical composition of the clay slate in mass-%:

SiO <sub>2</sub> 59.0 %	Na <sub>2</sub> O 1.2 %	Al <sub>2</sub> O <sub>3</sub> 21.2 %	TiO <sub>2</sub> 1.0 %	
Fe <sub>2</sub> O <sub>3</sub> 7.5 %	CaO 0.3 %	K <sub>2</sub> O 3.4 %	Loss on ignition 4.8 %	MgO 1.4 %

### Manufacturing process

The clay slate is rough-crushed, sieved and subsequently broken by means of various crushers down to the specified grain size of 10 to 80 mm. The grain of specified size is stored as feeding material in the surge bins of the prefabrication. From here it is lifted via a crusher and supplied to the rotary drum type furnace by means of conveyors. Inside the rotary drum type furnace, the clay slate is heated up using a carbon powder flame working on the counter current principle to approx. 1,159° C, i.e. until a pyro plastic condition is reached. The gases resulting from the burning of organic clay slate components as well as the occurring separation of the oxygen from the natural ferric oxide to be found in the clay slate in the course of the burning procedure both allow for the swelling of the slate. The resulting swelled coarse grains now show a honeycombed cellular structure with countless included air voids. The swelled slate is cooled down in a cooling drum. At the same time, the combustion air drawn in via the cooling drum is heated up for the rotary drum furnace working on the counter current principle to 400 to 500° C. The coarse swelled slate is fed via conveyor belts to two roll type crushers and cut up. After passing two crushers, the crushed material is sieved and separated by shaking screens into sieve fractions (preferably 0–2, 2–4, 4–8 and 8–16 mm).



Slate can be mixed with cement to form permanent up stands etc.



Levelling of slate using levelling bars



Suitable for filling voids within insulation

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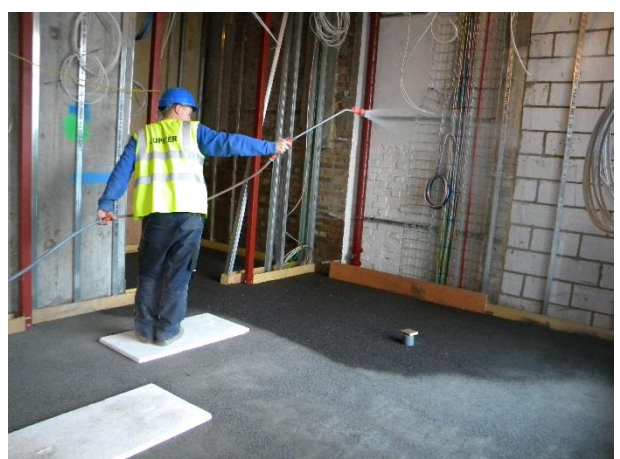
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In normal circumstances it is not possible to install an underfloor heating panel directly over the levelling slate as the general installation procedure of the underfloor heating creates movement which disturbs the slate. Hence an intermediate surface is installed on which the underfloor heating can then be installed upon.

When wishing to avoid the additional, intermediate surface it is possible to install the levelling slate mixed with cement which, once cured, allows the heating panels to be installed directly. This process allows a minimum thickness of 10-15mm of slate to be installed followed by the 30mm heating panels and final load bearing surface.

The cement simply acts as a binding agent for the slate to retain some structure during installation. It is not essential for the long term life of the levelling substrate.



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