

The power of innovation

SIRCONTEC Acoustic Floors

up-to-date and comprehensive solution
for
floor construction in residential and
multifunctional buildings

Trecin, August 2012

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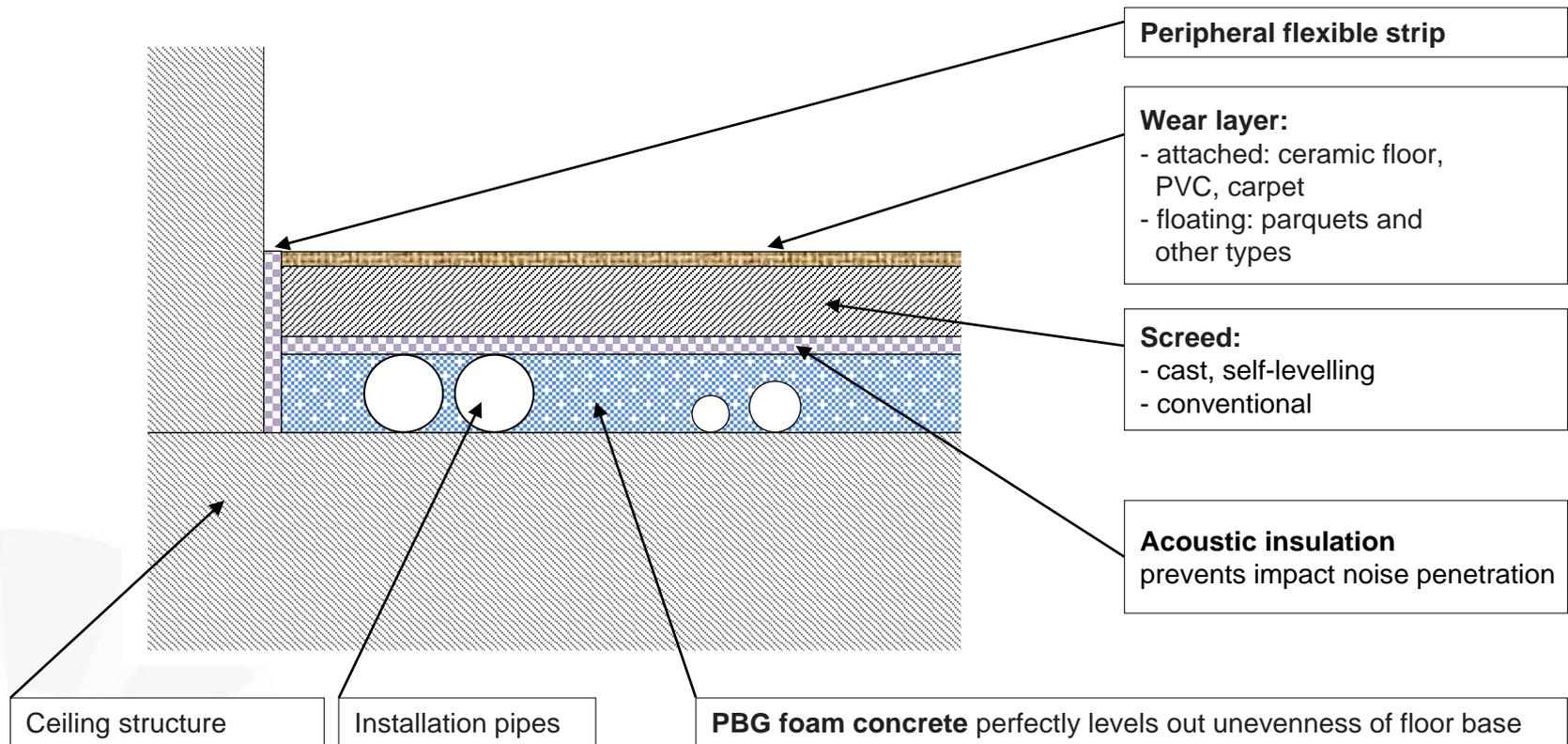
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Why is the SIRCONTEC acoustic floor necessary?

- ❑ Because requirements for acoustic properties of flats and buildings are increasing and, subsequently, standards are becoming stricter. For example in Czech Republic, in the spring of 2011, according to the revised standard CSN 73 0532, the maximum normalized impact noise level between two flats was limited from the previous value of 58 to **55** dB. In Germany, for example, they are even stricter - 53 dB, and the country where they have the greatest liking for silence is Austria – 48 dB.
- ❑ Because underestimation of noise reduction requirements, or application of inconvenient materials in designing floor structures of buildings, usually results in permanently impaired quality of the construction and, especially, of the living.
- ❑ Because SIRCONTEC acoustic floor is the most efficient technological solution for floors in the market.

SIRCONTEC Acoustic Floor

for apartments and civic buildings generally



...designed for impact noise reduction - without acoustic bridges

Floor subbase levelling layer



- ❑ Fast covering of pipes, distribution system and levelling of uneven bearing slab with foam concrete PBG using MS1000 concrete plant with capacity of up to 15 m³/hour

... excellent base for acoustic floors

EPS (Polystyren) and PBG (Foam Concrete) in floors - comparison



- ❑ EPS – low labour productivity with extensive waste; high risk of creating acoustic and thermal bridges
- ❑ Does not allow placement of uniform screed thickness
- ❑ Releases combustion gases – class E



- ❑ Faom Concrete PBG – output of more than 600 m² per shift
- ❑ Uniform screed thickness all over the surface => minimized cost and screed quality complaints
- ❑ Non-flammable – class A1

Liquid PBG fills up space and perfectly evens the base

Comparison of influence of PBG foam concrete and EPS floor material on the floor's impact noise insulation

Impact noise insulations	EKM (PUR)	PE (polyethylene foam)	Acoustic EPS (polystyren)
Thickness [mm]	6	5	15

1. After installation

Levelling layer	Damping in dB (ΔL_w)			
	SIRCONTEC PBG 40	26,2	24,2	27,5
	Floor EPS (Polystyren)	25,0	22,2	24,2
	Comparison of damping in %			
	SIRCONTEC PBG 40	100%	92%	105%
	Floor EPS (Polystyren)	95%	85%	92%

Floors with the levelling layer made of EPS have lower insulation capability than floors with PBG foam concrete

2. After 7 days

Levelling layer	Damping in dB (ΔL_w)			
	SIRCONTEC PBG 40	25,1	18,6	
	Comparison of damping in %			
	SIRCONTEC PBG 40	96%	71%	

Measured on the floor fragment:

35 mm anhydrite screed
 0.1 mm separating PE-foil
 x mm acoustic insulation
 50 mm levelling layer
 150 mm monolithic ceiling

... floors with foam concrete increase impact noise reduction

Influence of the levelling layer on impact noise insulation of low frequencies (100-315Hz)

Impact noise insulations	EKM (PUR)	PE (polyethylene foam)	Acoustic EPS (polystyren)
Thickness [mm]	6	5	15

1. After installation

Levelling layer	Damping in dB (ΔL_w for 100-315Hz)			
	SIRCONTEC PBG 40	9,5	8,4	10,9
	Floor EPS (Polystyren)	8,8	5,2	7,2
	Comparison of damping in %			
	SIRCONTEC PBG 40	100%	88%	115%
	Floor EPS (Polystyren)	93%	55%	76%

Floors with the levelling layer made of EPS have significantly lower capability to insulate low frequencies in comparison with floors with PBG foam concrete

2. After 7 days

Levelling layer	Damping in dB (ΔL_w for 100-315Hz)			
	SIRCONTEC PBG 40	8,6	1,6	
	Comparison of damping in %			
	SIRCONTEC PBG 40	91%	17%	

... floor structures with PBG excellently reduce low-frequency noise

Properties of PBG (Foam Concrete) levelling layer

- Faster and economically more effective application in comparison with board layer applications => saves time and money
- PBG is self-levelling => very good flatness of the layer's surface
- Excellent floor insulation - removes acoustic and thermal bridges
- Excellent especially for damping low-frequency noise
- Liquid PBG fills up space and perfectly evens the base, i.e. minimizes screed thickness and consumption
- High fire resistance – A1
- High resistance to flooding
- High resistance to damage during placement of other floor layers
- Vapour permeable

Overall table comparison of materials for floor subbase levelling please find on:

www.sircontec.com/floors in " Documents to download"

Main benefits of PBG (Foam Concrete) levelling layer

- Cost reduction for the whole floor structure
- Substantial time saving for the investor
- Minimized risk of floor defects

Overall table comparison of materials for floor subbase levelling please find on:

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PBG (Foam Concrete) production



- ❑ MS 1000 enables automatic dosing and feeding of all components
- ❑ It ensures stable quality of PBG produced



- ❑ Dry components can be charged into hoppers from silo, manually, or with a loader

...effective and reliable

MS 1000 filled from silo



... high output in small area

MS 1000 filled from truck mixer



Simple and fast

Delivery and placement of Foam Concrete PBG



- ❑ PBG, using a pump, can be easily and quickly delivered to any site location
- ❑ PBG easily levels uneven subbase
- ❑ Self-levelling properties of PBG enable to achieve much faster placement than it is with board materials



Liquid PBG fills up space and quickly evens the base

EKM, PE, EPS or wool acoustic insulation



- ❑ It is placed directly on PBG (Foam Concrete)
- ❑ EKM and PBG minimize floor (screed) thickness => effective in high-rise buildings
- ❑ Floor structure with PBG levelling layer has better impact noise insulation capability than floor with floor EPS



Fast application of insulation on flat PBG subbase

Screeds



- ❑ Conventional cement or liquid screeds
- ❑ PBG levelling layer minimizes screed thickness



- ❑ Screed thickness is uniform all over the surface
- ❑ Foam Concrete PBG minimizes possibility of screed defects

... PBG foam concrete improves properties and economy of the floor

Benefits of SIRCONTEC Acoustic Floor

- Minimized floor thickness
- Fast implementation at lowest price per m²
- Uniform screed thickness all over the surface
- Requirements of even the strictest standards for impact noise insulation are fulfilled
- Suitable also for high-rise buildings

Overall comparison of impact noise insulation materials please find on:

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Thank you for your attention!

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