

Materials for floor base levelling - comparison

Floor levelling layers		Lightweight concrete		Polystyrene	Mineral wool	Sand
		Foam concrete	Polystyrene concrete			
Material properties and parameters	Material	Liquid Cement, sand, water and foam, (fly ash)	Paste Cement, sand, water, EPS chips and additive, (foam)	Panels Foamed kopen, styropor, etc.	Panels Stone or glass fibre	Bulk material It can contain biological fractions
	Production of the material	On site in mobile equipment	On site in mobile equipment	Only in factory	Only in factory	Only in factory/quarry
	Technology ownership	SIRCONTEC	Ekostyren, Heidelberg, Politech, SIRCONTEC, etc.	Various producers	Various producers	Various producers
	Dry density [kg/m ³]	from 330	from 300	18 - 25	100-120	1750
	Compressive strength - Rc [N/mm ²]	from 0.45	from 0.4	-----	-----	-----
	Thermal conductivity coefficient λ [W/mK]	from 0.085	from 0.07	from 0.036	from 0.033	0.95
	Impact noise reduction	Excellent especially in low frequency damping	Excellent especially in low frequency damping	Poor in low frequency damping	Good in low frequency damping	Good in low frequency damping
	Ageing	With age it gains strength like conventional concrete	With age it gains strength like conventional concrete	Permanent deformation may occur when loaded	Permanent deformation may occur when loaded	No
	Size and shape of element [mm]	Liquid, it perfectly fills up space	Paste, it perfectly fills up space	Panel 1000x500xthickness	Panel 1000/1200x500/600xthickness	Bulk material, it fills up space
Application of the material and layer properties	Application processing	Self-levelling, only vibration pipe	Usually levelling board, sometimes vibration pipe	Placement with cutting to size => high risk of creating acoustic and thermal bridges	Placement with cutting to size => risk of creating acoustic and thermal bridges	Levelling with levelling board
	Application labour intensity	Very low	Medium	Very high, cutting to fit between pipes	Very high, cutting to fit between pipes	Very high
	Application speed	Very high	High	Low	Low	Very low
	Layer surface flatness	Very good	Very good after levelling	Insufficient, excessive screed production needed	Insufficient, excessive screed production needed	Good, but it can be easily disrupted
	Resistance of the layer to fire	Very high, A1	Medium, E	Medium, E	High, A1-A2	Very high, A1
	to flooding	Very high	Very high	High, but hardly releases absorbed water	Low	Very high
	ECO consideration	Non-waste technology	Non-waste technology	Waste formation	Waste formation	Non-waste process
	On-site needed area	Very small	Medium	Large	Large	Large
	Suitability for floor base levelling	Extremely suitable	Very good	Unsuitable	Partly suitable	Suitable

Materials for floor base levelling - comparison with marking **the best** and **the worst** evaluations

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In conclusion, the comparison may lead to the statement that application of PBG concrete for floor base levelling:

- Brings about substantial time and money saving for the investor
- Minimizes the risk of floor defects
- Significantly damps impact noise