

SLAB INSULATION

SLAB INSULATION INFORMATION FOR NVENT NUHEAT FLOOR HEATING SYSTEMS

Add insulation (aka thermal break) above a concrete slab and below an electric floor heating system to improve performance. Insulating below your floor heating system ensures a greater percentage of heat energy transfers to the flooring surface, leading to the following benefits...

- Reduced energy use & increased efficiency
- Shorter warm up times
- Higher floor surface temperature at a given thermostat setting

CHOOSING UNDERLAYMENT(S)

Underlayment (or underlay) refers to any material placed beneath the flooring surface. Different underlayments offer different properties. Follow all manufacturer's instructions confirm that all materials used are compatible with underfloor heating systems. Examples of different types of underlayment include...

nVent NUHEAT Membrane offers uncoupling, crack isolation, easy installation of nVent NUHEAT Cable. It can also replace of a layer of subfloor assembly such as plywood or cement board but it does not offer significant R-value.

- nVent NUHEAT Cable + Membrane: <https://www.nuheat.com/products/heatingsystems/cable-membrane>

Rigid foam insulation provides a strong surface to support tile, excellent thermal properties, and may be used for waterproofing. Many companies offer generic EPS boards. Wedi offers a specially-made EPS building panel with a thin cement coating specifically for tile setting.

- Wedi Building Panel: <https://us.wedi.de/product-systems/shower-and-wet-room-systems/building-panels/building-panel/>

Sound & insulation membranes are underlayments specifically designed to reduce noise transmission and add insulation. Some also offer waterproofing capabilities.

- Custom Building Products Easymat: <https://www.custom-buildingproducts.com/products/surface-preparation/waterproofing-membranes-underlayments/easymat.aspx>
- Amorim Cork Composites AcoustiCORK: <https://amorim-corkcomposites.com/en-us/materials-applications/flooring/acousticork>
- AcoustiTech Acoustic Membranes: <https://www.acousti-tech.com/en/AcousticMembranes/Ceramic/>
- Sound Seal Impacta CeraZorb: <http://www.soundseal.com/impacta/cerazorb.shtml>

Cement board is used to build-up a subfloor assembly and it offers some insulation properties as well.

- Custom Building Products Wonderboard: <https://www.custombuildingproducts.com/products/surface-preparation/cement-backerboards/wonderboard-lite-backerboard.aspx>
- Durock Backerboard: <http://www.durock.ca/index.html>
- James Hardie HardieBacker: <https://www.jameshardie.com/>

Plywood & OSB are used to build-up a subfloor assembly and they offer some insulation properties as well.

UNDERLAYMENT R-VALUES

R-values of various materials in a given assembly are added together to get the total value.

	Product	R-Value
Rigid Foam	EPS Foam Insulation (generic) – 1"	4.05
	Wedi Building Panel – 1"	4.30
Sound & Insulation Membrane	AcoustiCORK R60 (6 mm)	3.12
	AcoustiTech Comfortima System	1.32
	Easymat – 12 mm	1.80
	Easymat – 5 mm	0.80
	Easymat – 3 mm	0.40
	Impacta CeraZorb – 5 mm	1.50
Wood	OSB – ½"	0.62
	OSB – ¾"	0.74
	Plywood – ½"	0.62
	Plywood – ¾"	0.94
Cement Board	Wonderboard – ½"	0.30
	Durock – ½"	0.40
	Hardiebacker – ¼"	0.10

Information subject to change. Confirm usage, specifications, and installation procedures with the product manufacturer.

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