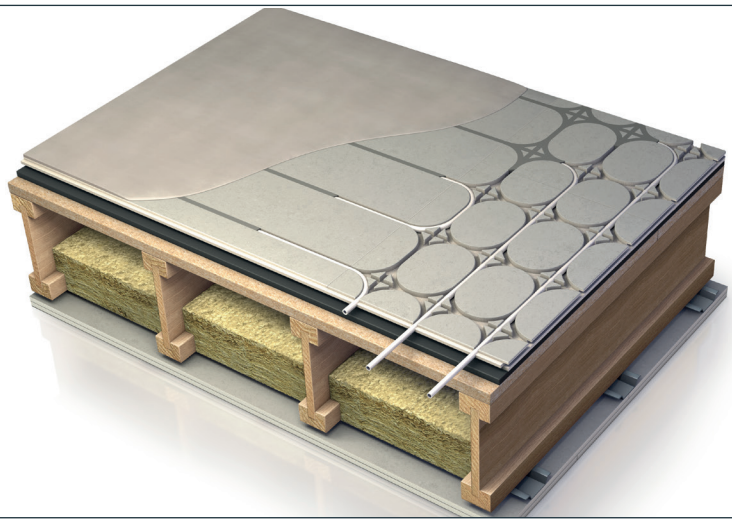
UNDERFLOOR HEATING

Nu-Heat UNDERFLOOR & RENEWABLES

Floor constructions

APT14 – 14mm Fastflo™ in pre-routed AcoustiPanel™14 with 5mm rubber resilient layer over a suspended timber separating floor – 31mm height build-up



AcoustiPanel™14

This tailor-made acoustic underfloor heating system offers:

- Underfloor heating and acoustic performance in a single solution, which is fitted above the structural floor deck
- Fast heat transfer and high performance heat output of up to 96W/m^2
- Can assist in exceeding Part E requirements when correctly installed as part of an acoustic floor cassette
- Ultra-smooth, low deflection surface, ideal for high quality floor finishes including large format tiles
- Just 31mm height build up – less than typical acoustic batten solutions
- Independently tested acoustic and deflection load performance
- Full design performance indemnity
- Can achieve up to 3 BREEAM credits when correctly installed as part of an acoustic floor cassette
- Sustainable product made with minimum 60% recycled gypsum board, and with the IsoRubber layer constructed of minimum 90% waste rubber

When correctly installed as part of an acoustic floor cassette AcoustiPanel™14 can provide up to 3 BREEAM credits.

A straightforward installation

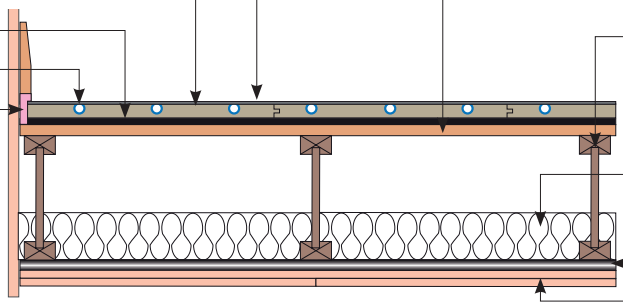
- Fully tailored design incorporating bespoke, interlocking tongue and groove panels for optimal heating and pipework layouts
- Installed directly over a structural suspended timber deck
- Quick drying self-levelling skim reduces impact on project schedule – dries in 4 hours/overnight, floor finishes can be fitted after just 8 days
- A single manifold serves up to 100m^2, for a quick installation that uses less material
- Robust, step-by-step Nu-Heat installation manual, including complete mechanical, electrical and layout drawings

ACOUSTIPANEL™14 WITH 5mm RUBBER RESILIENT LAYER ON A SUSPENDED TIMBER FLOOR WITH STRUCTURAL DECK

Supplied by Nu-Heat

3–4mm skim coat
23mm T&G AcoustiPanel™14
5mm acoustic rubber
14mm Fastflo™ tubing
Flanking/isolation strip

Not illustrated
- Castellated panel
- QuickSet self-levelling compound



Supplied by others

Structural OSB floor deck
Floor joists
Min. 100mm mineral wool insulation
Resilient bar
Ceiling structure to meet acoustic/fire criteria as required

DESCRIPTION

AcoustiPanel™14 from Nu-Heat is a unique single floor deck solution, which combines efficient underfloor heating with effective airborne and impact noise reduction.

Produced in partnership with Knauf and Thermal Economics, the product comprises a pre-routed gypsum board over a high performance IsoRubber-UFH-NH base, into which Nu-Heat's 14mm Fastflo™ tube is neatly installed.

High thermal conductivity and a stable, ultra-smooth floor finish are achieved thanks to a combination of tongue and groove panels topped with a self-levelling skim, making the floor finish perfect for large format tiles and other high quality floor coverings.

AcoustiPanel™14 can contribute towards exceeding Part E compliance standards, when installed as part of an acoustic floor cassette. This makes the solution suitable for new-build and renovation apartment projects, where a simple to install, efficient and discreet underfloor heating is required as part of an acoustically robust system.

FLOOR HEATING TUBE

A room or heating zone will use one, or more, coils of 14mm Fastflo™ pipe, providing an even spread of warmth across the floor. The flexibility of Fastflo™ also aids installation.

INSULATION

Sufficient insulation should be present to meet the requirements of Part L of the Building Regulations.

UNDERFLOOR HEATING EFFICIENCY

Setting the room thermostat 1–2°C lower achieves the same comfort levels as with an equivalent radiator system because the heat is mostly radiant, meaning air convection currents are minimised and heat loss by natural ventilation reduced. AcoustiPanel™14 is a perfect partner for modern gas, oil and LPG condensing boilers, it can also be used with a heat pump in new-build projects.

www.nu-heat.co.uk/floorspecs

FLOOR STRUCTURE

Individual AcoustiPanels™ with a glued tongue-and-groove are laid over a 5mm IsoRubber-UFH-NH resilient layer and structural floor deck. Once all floor heating pipe is installed, panels are grouted and a 3–4mm skim coat of the self-levelling compound is applied. Any areas of castellated panel (if specified) are also covered with self-levelling compound. The skim coat can be walked on after 4 hours/overnight and coverings can be fitted after just 8 days.

Virtually any covering can be applied over AcoustiPanel™14, but using less thermally resistive coverings ensures greater heat output and faster warm up times.

WARRANTIES/INSURANCE

Manufacturer's warranty: all UFH tube supplied by Nu-Heat is covered by a 50-year warranty, the first 10 years of which are insurance-backed.

Product liability: Nu-Heat maintains product liability insurance to £5 million.

Professional indemnity: As Nu-Heat's design service is integral to the operational effectiveness of the UFH system, the company holds professional indemnity insurance of £5 million to cover all aspects of our consultation and design services.

TECHNICAL SPECIFICATION

Panel dimensions:	600 x 600 x 23mm
Area:	0.36m² per board
Density:	1160kg/m³ min.
Manufactured to:	BS EN 15283-2:2008
Material (routed panel): Resilient layer:	23mm gypsum fibreboard 5mm IsoRubber-UFH-NH
Routing:	ø14mm @ 100/150/200mm centres
Skim coat:	5mm N410 gypsum self-levelling compound
Additional mass:	
Straight/double/triple end returns	36.2 kg/m²
100mm circles	38.0 kg/m²
150/200mm multi-turns	41.9 kg/m²
Castellated panel	44.9 kg/m²

Acoustic data

The combination of Nu-Heat's AcoustiPanel™ and 5mm Isorubber-UFH-NH has been shown through UKAS accredited laboratory testing to be effective in reducing Airborne and Impact Sound Transmission through suspended timber floors and can assist in achieving Part E compliance.

If you require the full test report, please contact your Nu-Heat Account Manager.

AcoustiPanel™14 laboratory test results	Airborne R_w ($C;C_{tr}$)	Base floor improvement R_w+C_{tr}	Impact $L_{n,w}$	Base floor improvement
Base floor	55dB (-3;-7)		65dB	
Routed panel	63dB (-1;-6)	+9dB	56dB	+9dB

Loading data* EN 1991-1: Point load: 5kN

Load	Average deflection under load	
	Standard AP14	AP14 on 20mm insulation @200kPa
1 kN	0.35mm	0.47
2 kN	0.60mm	0.81
3 kN	0.81mm	1.10
4 kN	1.00mm	1.35
5 kN	1.18mm	1.59

Tests were carried out under laboratory conditions at the Knauf Test Centre in Germany; results achieved on site may vary.

Heat output (m²°K/W)

Water temperature	R=0.05 (tile)	R=0.1 (timber, glued)	R=0.2 (carpet/underlay)
45°C flow (40°C ave.)	74 W/m²	56 W/m²	36 W/m²
55°C flow (50°C ave.)	100 W/m²*	75 W/m²*	54 W/m²

Nominal value; output values vary depending on specific floor finish.
*Limited by floor covering surface temperature limit.

Acoustic performance data is taken from tests carried out at the UKAS accredited Sound Research Laboratories, Sudbury, in accordance with the relevant BS EN ISO standards. Point load performance data is taken from tests carried out at Knauf, Germany in accordance with the relevant BS EN ISO standards. Laboratory performances stated are specific to the above system only, inclusive of all elements shown and correct installation and should be used for guidance only.