ThermalStream®
UNDERFLOOR HEATING UNDERLAY

DESIGNED IN THE UK | PROUD MEMBER | COMMITTED TO SAFETY AND QUALITY
LOW VOC/FORMALDEHYDE IN ALL PU FOAM AND WOOL UNDERLAYS

ThermalStream®

Luxury carpet underlay for underfloor heating systems incorporating flame retardant foam

0.87 *TOG*
ISO 17025 (UKAS Accredited)

46 *dB (ΔLW)*
BS EN ISO 10140-3 Impact Sound

ThermalStream®		Testing Method
Construction	PU & Viscoelastic Foams	
Density	95 kg/m³	
Thickness	10mm	
Tog Rating	0.87 TOG	ISO 17025 (UKAS Accredited)
Heat Transfer	46°C (achieved on a 200kw electric UFH system)	ISO 17025 (UKAS Accredited)
Noise Reduction	46 dB (ΔLW)	BS EN ISO 10140-3 Impact Sound
Area Coverage	15m² (1.37m x 11m)	
Roll Dimensions	140 x 35 x 35 cm	
Double Stick Applications?	No	

Recommended End Use Classifications

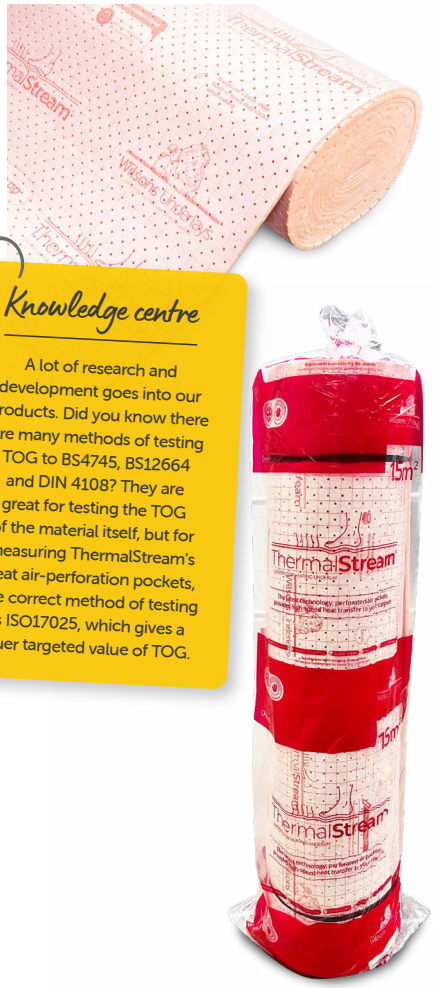
Class L/U	Luxury use, domestic/contract, where high energy absorption is desirable

Product Specifications

New! Top Surface	Smooth fit 80g/m² PE Backing with ThermalStream® logo and installation guidelines
New! Bottom Surface	FibreTex 40g/m² Non-Woven White backing
Guarantee	Lifetime of initial carpet installation (when used in recommended areas), Wilsons bonding tape must be used
Installation Method	Lay ThermalStream logo face side upwards, all corners must have spray adhesive applied. All underlay joins must be taped with Wilsons Bonding Tape. Always use a fresh, sharp blade/heavy duty shears when cutting.
Heat Source	ThermalStream works seamlessly for all electric (dry), Hydronic (water) or forced air inductions based systems for either concrete or timber subfloors

Environmental Credentials

Recycled Content	*Environmentally Friendly:* 100% recycled foam content, which is 100% recyclable after use.



Knowledge centre

A lot of research and development goes into our products. Did you know there are many methods of testing TOG to BS4745, BS12664 and DIN 4108? They are great for testing the TOG of the material itself, but for measuring ThermalStream's heat air-perforation pockets, the correct method of testing is ISO17025, which gives a truer targeted value of TOG.

All underlay joins must be bonded with our Wilsons Bonding Tape *to ensure the warranty is valid. It has been manufactured to work exclusively with our underlays.*

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And now for the science-y bit...

This is where you wish you'd paid more attention in school!

Technical Specifications to BS EN 14499:2015 (BS5808)

Testing		Method
Breaking Strength (maximum force)	≥30N in each direction	BS EN ISO 13934-1:2013
Thickness loss of static loading *short term after 1 h recovery*		ISO 3416:1986 (2012)
Fibrous underlay	≤ 40 %	
Non-fibrous underlay	≤ 15 %	
Combined underlay	≤ 40 %	
Thickness loss of dynamic loading		BS ISO 2094:1999 (2015)
Fibrous underlay	≤ 40 %	
Non-fibrous underlay	≤ 15 %	
Combined underlay	≤ 40 %	
Thickness	≥ 4.0 mm	ISO 1765:1986 (2012)
Thickness deviation *from max to min*		ISO 1765:1986 (2012)
Fibrous or combined underlay	≤ 4 mm	
Non-fibrous underlay	≤ 3 mm	
Resistance to breaking or cracking	No cracks greater than 50 mm along the fold No cracks in backing	BS EN 14499:Annex A:2015
Compression after dynamic loading	Minimum 2 mm, Maximum 8 mm	BS 4098:1975 (2003) and BS ISO 2094:1999 (2015)
Work of compression after dynamic loading	Minimum 50 J/m², Maximum 200 J/m²	BS 4098:1975 (2003) and BS ISO 2094:1999 (2015)
Retention of original work of compression	≥40 %	BS 4098:1975 (2003) and BS ISO 2094:1999 (2015)

Flammability Classification

Conforms to British Standards BS4790 flammability classification achieving a low radius result

Formaldehyde Testing Results

Time Interval (Days)	Formaldehyde (µg/m³)
28	Not detected

Limit of detection for formaldehyde is 2.0 (µg/m³)

VOC Results:

Carcinogenic compound as defined in Annex VI to Regulation (EC) No. 1272/2008

	LCI value[+1]	Emissions @ 28 days	R Value[+2] @ 28 days
Cas No.	µg/m³	µg/m³	Unitless
Not detected	Not detected	Not detected	Not detected

VOC Results: TVOC

Cas No.	µg/m³	µg/m³	Unitless
	N/A	Not detected	Not detected

Limit of quantification for VOC - 5 µg/m³ per component/
Limit of detection for VOC - 1 µg/m³ per component

The following compounds were detected below the limit of quantification - Dodecane, tetramethylbutanedinitrile, nonanal, xylene

ÉMISSIONS DANS L'AIR INTÉRIEUR A+ A+ A B C

Indoor Air Quality Test

Tested to ISO 16000

Regulation or protocol	Conclusion
French VOC Regulation	A+
French CMR components	Pass
Italian CAM Edilizia	Pass
ABG/AgBB	Pass
Belgian Regulation	Pass
EMICODE	EC 1 PLUS
Indoor Air Comfort	Pass
Indoor Air Comfort GOLD	Pass
Blue Angel (DE-UZ 156)	Pass
BREEAM International	Exemplary Level
BREEAM NOR	Exemplary Level
EU Taxonomy	Pass
LEED v4.1 BETA (outside U.S.)	Pass

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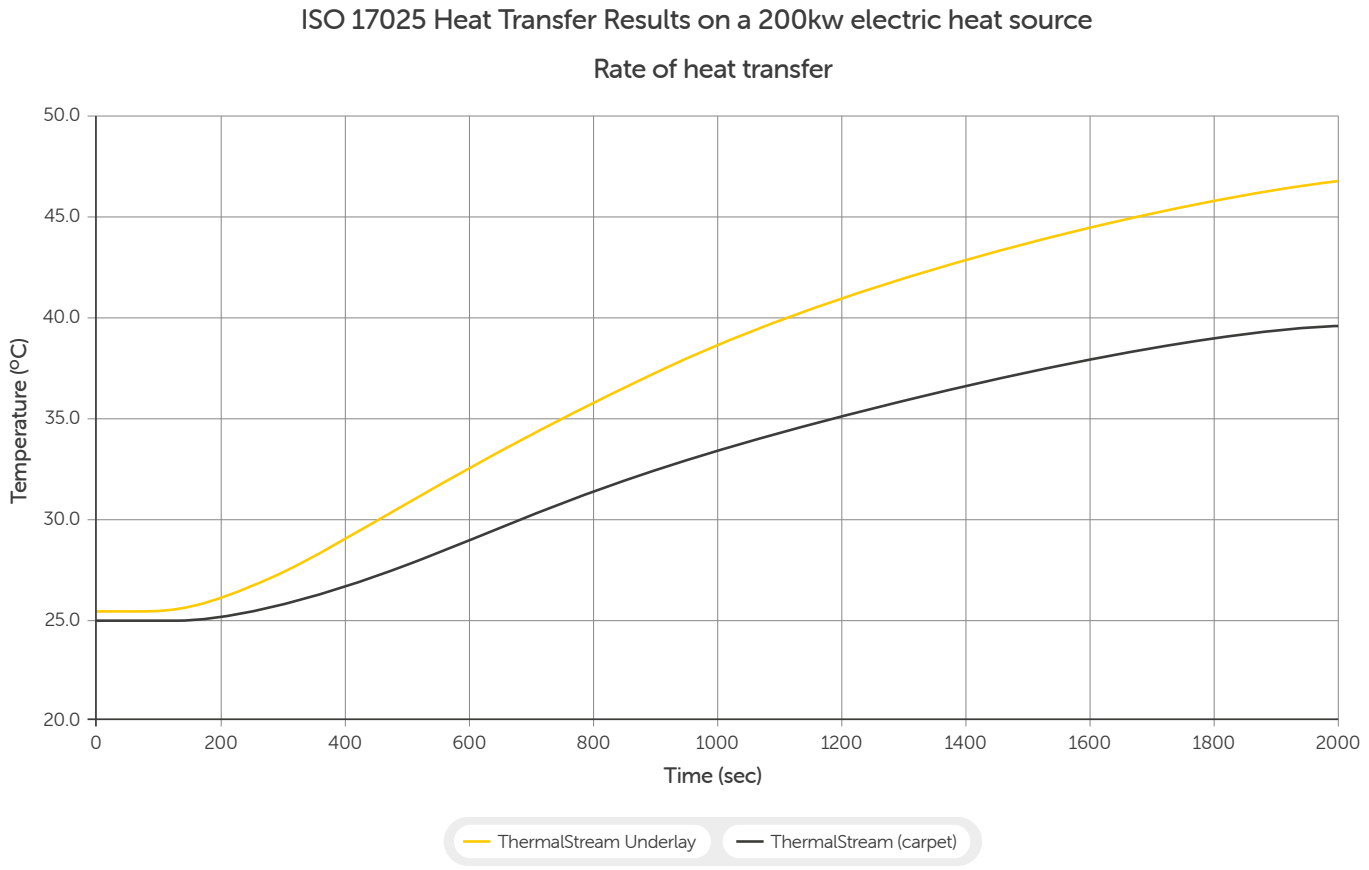
ThermalStream®

ISO 17025 Heat Transfer Test (UKAS Accredited) Results



Summary of results

After 400 sec:

ThermalStream® UFH underlay 28.9 °C

After 800 sec:

ThermalStream® UFH underlay 35.8 °C

After 1200 sec:

ThermalStream® UFH underlay 40.9 °C

After 1600 sec:

ThermalStream® UFH underlay 44.3 °C

After 2000 sec:

ThermalStream® UFH underlay 46.8 °C

Conclusion

ThermalStream® underlay allows high speed heat transfer when used in conjunction with underfloor heating.

Manufactured by Wilsons Underlays Ltd, West Yorkshire, UK.
To view our full terms and conditions, visit **wilsons-underlays.co.uk/terms-conditions**.

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ThermalStream®
Installation Instructions

Always remember to follow Code of Practice:

BS 5325: 2001 Code of practice for installation of textile floor covering

First things first

ThermalStream is intended for use with underfloor heating. The following instructions are intended to act as additional notes to this code of practice and to cover or emphasise those details relating to the installation of ThermalStream. Please also refer to the specific instructions of the carpet manufacturer.

Sub floor conditions and floor preparation

In general sub floor conditions should comply with the requirements of the Code of Practice quoted above. A lot of effort goes into these standards and codes of practice with the aim of getting the best installation, so our advice is to take a look at them.

Basically, it says that all sub floors should be clean, dry, level and structurally sound and free from any cracks and contamination. All cracks and holes should be adequately repaired to ensure a smooth finished appearance, patching and levelling compounds must be suitable for the end use application and must becompatible with any adhesives that may be used. Very absorbent or dusty subfloors should be primed with a primer compatible with the adhesive to be used. Wooden floors showing warping, shrinkage or unevenness must be made good before continuing. Wax or varnish should be removed as these treatments can affect the adhesive bond.

Temperature/humidity and conditioning

The ideal indoor temperature for installation is between 18-35°C, with a maximum air relative humidity of 65%. The subfloor temperature should not fall below 10°C and it is important that the carpet and underlay are stored on site at the same temperature as the areas to be installed.

Wilsons Bonding Tape has been manufactured to work exclusively with our underlays. Extra wide at 60mm and with a high-strength formula glue, it keeps underlay secure all at times during its lifetime.

Installation

1. Ensure that the subfloor is sound, smooth, dry, and level in accordance with BS5325:2021
   - Ensure the underfloor heating (UFH) has been commissioned. UFH should be switched off 48hrs prior to, during, and 48hrs after installation, then brought up to temperature in increments. The maximum temperature should not exceed 27°C.
   - Clean subfloor and remove debris and/or contaminants which may impair installation.
   - Check that the combined tog rating does not exceed 2.5 Tog.
   - Check each roll of underlay for faults or discrepancies prior to installation.
   - Plan the direction of underlay so that runs are in compliance with BS5325:2021.

2. Floor covering materials should be acclimatised for 24hrs prior to installation.
   - Install an interlay prior to underlay placement to help prevent against dust and dirt migration.
   - Lay out underlay and reverse each run, leaving 50mm excess to allow for trimming.
   - When installing on to timber substrates, the use of mechanical fixings can be used to secure the underlay around the perimeter of the room. Solid substrates can be either loose laid, affixed with a double-sided tape, or secured with a spray adhesive (consult adhesive manufacturer for compatibility).

3. Once the underlay has been laid out, trim the underlay tight to the gripper, ensuring there are no gaps greater than 3mm.
   - Install **Wilsons bonding tape** along underlay joins to help prevent against excessive movement.
   - Ensure the bonding tape has sufficient adhesion by applying even pressure.

4. Once the underlay has been installed, remove waste and debris, and check the floor area for discrepancies.
   - Lay out the carpet and install using the stretch fit method, ensuring there is sufficient tension.
   - Ensure the teeth of the stretcher do not penetrate the scrim of the underlay or the interlay beneath, as this will damage the products integrity and/or result in dust/dirt migration.
   - Do not carry out heat seam joins directly on top of the underlay as this will cause damage and/or distortion. Joins should always be carried out on a solid surface.

5. Once the installation has been completed, clean off area.
   - UFH can be turned on 48hrs after the carpet has been installed, with the temperature being increased in increments, up to a maximum temperature of 27°C.

Always install the carpet in accordance with the carpet manufacturer's instructions. These instructions are not exhaustive, if in any doubt please contact us.

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