

ThermalStream®

Luxury carpet underlay for underfloor heating systems incorporating flame retardant foam

0.8 Functional TOG
See the Heat Transfer Graph

36 dB
BS EN ISO 10140-3:2010

ThermalStream®		Testing Method
Construction	PU Foam	
Density	80 kg/m ³	
Thickness	10mm	
Tog Rating	0.8 Functional TOG	ISO 17025 (UKAS Accredited)
Heat Transfer	46°C (achieved on a 200kw electric UFH system)	ISO 17025 (UKAS Accredited)
Noise Reduction	36 dB	BS EN ISO 10140-3:2010
Area Coverage	15m ² (1.37m x 11m)	
Roll Dimensions	140 x 35 x 35 cm	
Double Stick Applications?	No	



TOG vs. Functional TOG

You might be wondering how TOG can be important on an underlay designed to transfer heat rather than keep heat in... Traditional testing (BS4745) uses a two-plate method to determine the TOG rating of the foam itself, which doesn't take into account our specialist perforations designed to allow heat to transfer. That's where ISO 17025 Heat Transfer Performance testing (UKAS accredited) comes in – this takes into account the perforations and gives us a more targeted indication of the actual TOG rating. See the real life performance results overleaf.



Recommended End Use Classifications

L/U - Luxury Use	✓
GC/U - General Contract Use	✓

Product Specifications

Top Surface	Printed ThermalStream® logo with instructions
Bottom Surface	Exposed foam with thermal air pocket holes
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



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.

Environmental Credentials

Recycled Content	Environmentally Friendly: 100% recycled foam content, which is 100% recyclable after use.
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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 <i>short term after 1 h recovery</i>		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 <i>from max to min</i>		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/m ² , Maximum 200 J/m ² ?	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)

Formaldehyde Testing Results

Time Interval (Days)	Formaldehyde (µg/m ³)
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/m ³	µg/m ³	Unitless
Not detected	Not detected	Not detected	Not detected

VOC Results: TVOC

Cas No.	µg/m ³	µg/m ³	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



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

DISCLAIMER: The data on this sheet is meant for information purposes only. The typical properties listed are the result of extensive research & laboratory tests, the materials used may vary and we cannot guarantee these results are obtained in practice. Users should conduct their own tests to determine the suitability of each material to its intended application. Although testing represents no detection of VOCs and Formaldehyde, due to the recycled nature of our underlays, we cannot guarantee these results

MANUFACTURER: Wilsons Underlays Ltd, West Yorkshire, UK

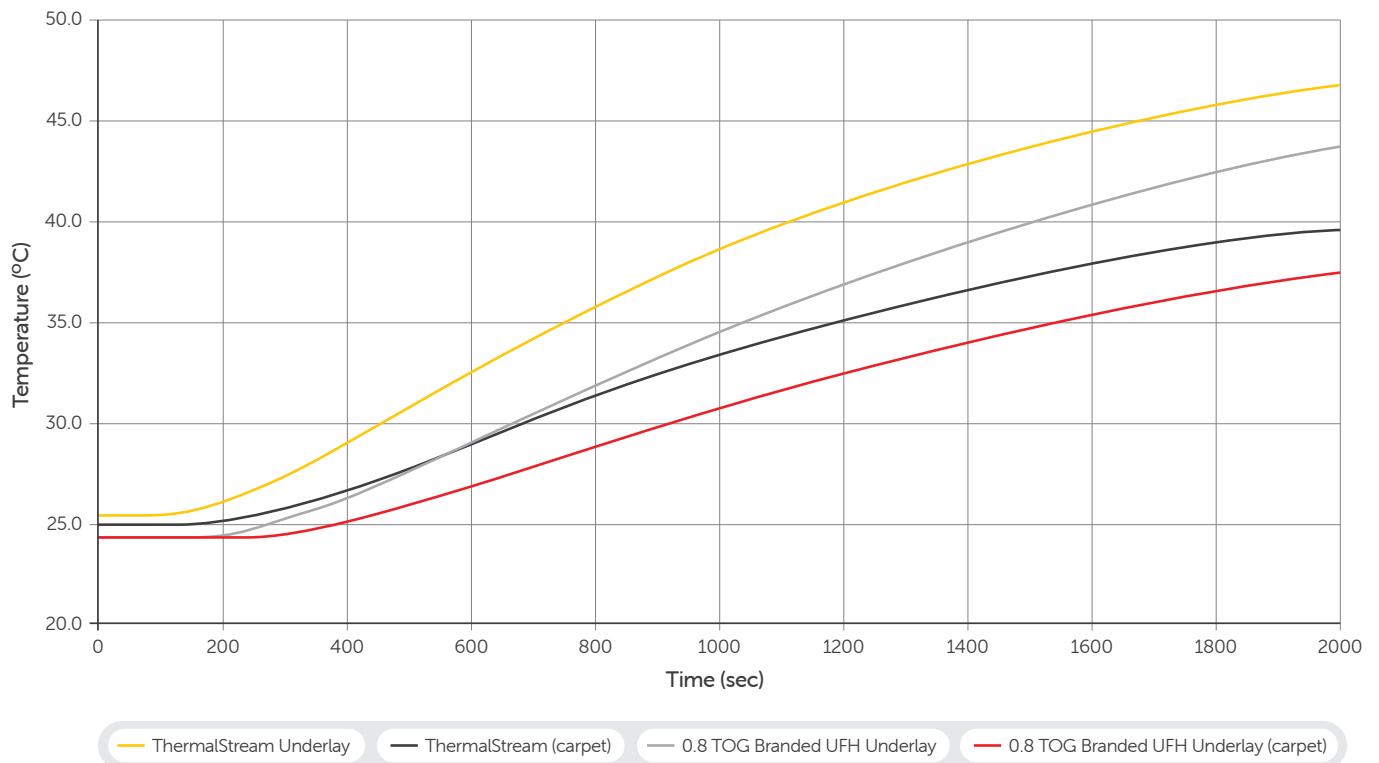
ThermalStream®

ISO 17025 Heat Transfer Test (UKAS Accredited) Results

ThermalStream vs branded rubber UFH underlay

ISO 17025 Heat Transfer Results on a 200kw electric heat source

Rate of heat transfer



Summary of results

After 400 sec:

ThermalStream® UFH underlay	28.9 °C
0.8 TOG Branded UFH underlay	26.2 °C

After 800 sec:

ThermalStream® UFH underlay	35.8 °C
0.8 TOG Branded UFH underlay	31.8 °C

After 1200 sec:

ThermalStream® UFH underlay	40.9 °C
0.8 TOG Branded UFH underlay	36.9 °C

After 1600 sec:

ThermalStream® UFH underlay	44.3 °C
0.8 TOG Branded UFH underlay	40.8 °C

After 2000 sec:

ThermalStream® UFH underlay	46.8 °C
0.8 TOG Branded UFH underlay	43.7 °C

Conclusion

ThermalStream® underlay has a better thermal efficiency when used in conjunction with underfloor heating.

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 wilsons-underlays.co.uk



Wilson's Underlays
THE BEST WAY TO TAKE CARE OF YOUR CARPETS

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 be compatible 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.



Wilson's 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.

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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Installation

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



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