



Sempatap Thermal



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THERMAL INSULATION ON A ROLL

SEMPATAP THERMAL has been in use in the UK and Europe for over 30 years and has been successfully installed in 1,000's of flats and houses by Local Authorities, Housing Associations, private Landlords and homeowners. **SEMPATAP THERMAL** is a remarkable material which, when applied to the internal surfaces of external walls, substantially lowers heat loss, dramatically reduces condensation and immediately makes rooms warmer and more comfortable.



SEMPATAP THERMAL is only 10mm thick and is as simple and easy as wallpaper to apply. There is hardly any mess or disruption and it can be installed without having to vacate the property. **SEMPATAP THERMAL** can be decorated with virtually any finish – emulsion, wallpaper and it can even be tiled. It has a life expectancy of 30 years and can be redecorated time and time again with no problem.

SEMPATAP THERMAL was originally developed for energy conservation as an economical solution for reducing carbon emissions and lowering heat loss. The specific application was improving the thermal performance of solid wall homes which historically had been considered difficult to insulate because of disruption to the occupant or very expensive systems, hence the reason these properties had attracted the name “Hard to Heat Homes”. Of the UK's housing stock, 36% are solid wall construction, over 9 million made up of solid brick, solid stone, pre 1944 timber frame and non traditional PRC i.e. concrete properties. In these type of properties heat loss through the walls is high – 45-50% as a consequence heating bills are higher in comparison to an equivalent cavity wall property. Unfortunately there are a considerable number of families who are in fuel poverty and as a result cannot afford to heat their properties. This leads to problems of condensation which will give rise to black mould on the walls and ceilings. Mould is a serious health risk and combined with cold, damp conditions results in an unhealthy living environment.

SEMPATAP THERMAL is the economical solution to overcome all of these problems – it is quick to install, can be applied with the resident insitu and immediately reduces the heat loss giving warmer walls which present a surface on which moisture will not condense.

SEMPATAP THERMAL does not reduce the room size significantly, there is therefore no need to re-site and extend electrics and plumbing or reduce and refit floor coverings i.e. carpets, vinyl, laminate which would be necessary with some internal solid wall insulation materials/methods.

Areas of Application

SEMPATAP THERMAL is applied to the internal face of the external walls of a property, it is not necessary to apply the insulation to internal party walls. It can be installed in any type of solid wall house including solid brick, solid stone, concrete etc. however, is equally beneficial on cavity wall flats and houses, particularly north east facing bedrooms.



SEMPATAP THERMAL is also particularly effective on the ceilings of flat roof extensions where there is little or no roof insulation. The material is also excellent for alleviating cold bridge problems caused by cantilever beams with walkways, ring beams, balconies and bridging from Finlock gutters.

Dormer ceilings and mansard roofs present a major problem as it is virtually impossible to insulate economically using traditional methods. As a consequence they become a magnet for any condensation which then results in black mould everywhere. **SEMPATAP THERMAL** is the simple answer to this problem which is quick and easy to install.



SEMPATAP THERMAL has also been used in Schools, Hotels, Park Homes, Canal Boats, Village Halls, Caravans, yachts and trains.

SEMPATAP THERMAL not only has outstanding thermal properties but it can also be used as acoustic insulation and will substantially reduce noise problems. **SEMPAFLOOR** can be used for problems of condensation, heat loss and acoustics on floors.

BENEFITS OF SEMPATAP THERMAL

- ELIMINATES CONDENSATION
- QUICK & EASY TO INSTALL
- IMMEDIATE WARMTH & COMFORT
- LOWER FUEL BILLS
- STOPS MOULD PROBLEMS
- ECONOMICAL TO USE
- DIY INSULATION
- APPLICATION DVD AVAILABLE

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TECHNICAL INFORMATION

SEMPATAP THERMAL is a unique insulation material made of an open and closed cellular construction based on natural latex with a woven fibreglass face for strength and rigidity. The insulation material is water vapour permeable which allows the walls to breathe.

SEMPATAP THERMAL has been tested by the National Physical Laboratory and figures produced by the Building Research Establishment show considerable energy savings. On a standard 9" solid brick wall with a μ value of 2.1 the application of **SEMPATAP THERMAL** will result in the μ value being lowered to 1.49, a reduction of nearly 30% for an insulation material only 10mm thick. **SEMPATAP THERMAL** has also been tested by the Building Research Establishment for fire resistance under BS 476 Part 7 and in France Centexbel Rapport d'analyse achieving Class M1.

SEMPATAP THERMAL has been the subject of five E.S.T. Innovation Programmes, which independently demonstrate the product's effectiveness. Winner of the Gold Award in the 2009 Green Apple Awards for the Built Environment and Architectural Heritage, was runner up in the 2008 National Energy Efficiency Awards and received a Certificate of Merit from the National Home Improvement Council.

The effectiveness of **SEMPATAP THERMAL** was independently evaluated on a scheme in Wolverhampton using a Thermographic survey by IRT Surveys Ltd which showed considerable reduction of heat loss on solid wall properties after the application of **SEMPATAP THERMAL**.

Technical Information

Roll Size:	1m wide x 12.5m long
Thickness:	10mm
Composition:	Latex foam with coated woven fibreglass face
Weight/roll:	26kg
Weight/m ² :	2.08kg
Thermal Resistance:	0.194m ² K/W
Resistance of untreated wall:	1/2.1 = 0.476
Resistance with SEMPATAP :	0.476 + 0.194 = 0.67
U-value with SEMPATAP :	1/0.67 = 1.49 W/m ² K
Permeability:	3.88E-07 Kg/s.m.Pa
Mean Density:	186.4 kg/m ³
Life expectancy:	30 years

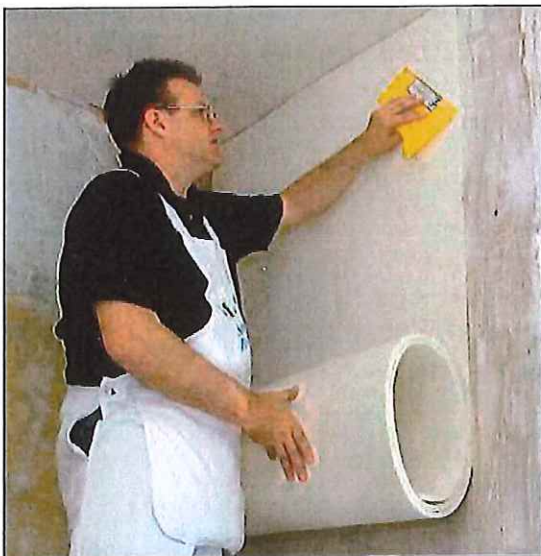
Test Reports/Approvals

National Physical Laboratory – R value rating
Building Research Establishment – carbon savings
Building Research Establishment Fire Test BS 476 Part 7
Centexbel Rapport d'analyse – Fire Rating Class M1
School of Built & Natural Environment – Permeability
National Physical Laboratory – Mean Density



Crewe & Nantwich Borough Council – Warmer Walls
Dane Housing Association – Congleton Affordable Warmth
South Gloucestershire Council – Park Homes Insulation Project
Bracknell Forest Borough Council – Cosi Homes
Wolverhampton Met. Borough Council – ABCD Regeneration Zone

SEMPATAP THERMAL APPLICATION



Sempatap Thermal on 8 Domestic Properties for Wolverhampton City Council



Visual image



Visual image



Before thermal



Before thermal



After thermal



After thermal

Analysis

In the before image, inconsistent temperatures can be seen in red and yellow colours indicating heat loss due to poor detailing or missing/ damaged insulation. Warmer temperatures are seen on the bottom level of this property suggesting heating is on compared to the above level; however it could simply be there is no insulation at all. Analysis of the property after insulation reveals significantly reduced heat loss across the elevation suggesting a much more energy efficient property.

Sempatap Thermal

Approved Energy Saving Product

Application Instructions

1. Mould growth on walls and ceilings must be treated first in accordance with MGC Specification.
2. Remove any wallpaper and prepare the walls and ceilings as though you were going to decorate. **SEMPATAP THERMAL** is normally only applied to the inside of the external wall. If the plaster on your wall is very old and porous, apply a coat of **SEMPATAP 'A' PRIMER** and allow to dry.
3. If your skirting is less than 10mm wide on the top edge you will need **SEMPATAP SKIRTING CHANNEL** which is a white plastic track and will give a neat finish to the bottom edge of **SEMPATAP THERMAL**.
4. Fix the channel on the wall above the skirting using No Nails adhesive after preparation is completed and before application of **SEMPATAP ADHESIVE**. Alternatively you can fix a 10mm wood bead along the top of the skirting and butt joint the **SEMPATAP THERMAL** to it.
5. Apply a liberal coat of **SEMPATAP ADHESIVE** to the wall using a notched **SEMPATAP ADHESIVE SPREADER**, notched trowel or medium pile roller. Only apply the adhesive to one drop length area at a time. For subsequent lengths apply the **SEMPATAP ADHESIVE** not only to the wall but also to the vertical edge of the previously hung length of **SEMPATAP THERMAL**.
6. **SEMPATAP THERMAL** is applied foam side to the wall. Cut **SEMPATAP THERMAL** to required length using wallpaper shears or large scissors allowing 25mm overlap at each end then roll up with foam side facing out.
7. Apply **SEMPATAP THERMAL** to wet adhesive on the top of the wall at the junction with the ceiling then roll out and smooth using the **SEMPATAP SPATULA**.
8. When **SEMPATAP THERMAL** is in the required position, apply firm pressure using the **SEMPATAP SPATULA**, smoothing out any air pockets.
9. Continue application of **SEMPATAP THERMAL** by applying subsequent lengths until the wall is covered but leaving a narrow gap of 1-2mm between each drop. For application to flat ceilings, dormers and mansard roofs, apply the **SEMPATAP ADHESIVE** to the ceiling surface, leave for 10-15 minutes to go tacky then apply **SEMPATAP THERMAL** as per instructions above. It is advised that application to ceilings, dormers etc. is a two man job.

10. Using a snap off knife or similar and the **SEMPATAP SPATULA** as a straight edge, cut off any excess at ceiling level and at the junction with the skirting. Plugs and switches – star cut **SEMPATAP THERMAL** and use longer screws to refit.
11. Ensure that **SEMPATAP THERMAL** is applied behind the radiator. If there is sufficient space between the radiator and the wall, apply **SEMPATAP ADHESIVE** to the wall using a long neck radiator roller. Insert the **SEMPATAP THERMAL** behind the radiator and smooth out using a clean long neck radiator roller. Alternatively, it may be necessary to drop the radiator to gain access to the wall to apply **SEMPATAP THERMAL** in the normal manner.
12. Gun the **SEMPATAP SEALANT** into all vertical joints between the **SEMPATAP THERMAL** drops. Also, use to achieve a neat finish at the junction with ceiling and skirting. Wipe off any excess. When dry, fill any sealant shrinkage with **SEMPATAP FILLER** to totally hide joints.
13. Use **SEMPATAP EDGING TAPE** to achieve a neat finish on all outward facing corners, window reveals, window heads etc. Cut **SEMPATAP EDGING TAPE** to required length, fold along the plastic crease line to form a right angle with the plastic facing inside.
14. Brush **SEMPATAP ADHESIVE** along the plastic and the paper and leave to soak for a couple of minutes. Locate over the corner of the **SEMPATAP THERMAL** and smooth out using a damp sponge or cloth. Remove excess adhesive and leave to dry. When dry use **SEMPATAP FILLER** to hide the edge.
15. **SEMPATAP THERMAL** can be decorated with virtually any finish – wallpaper, emulsion, even tiles. For a perfect finish when using emulsion, cross line with lining paper to totally hide the joints.
16. To hang wallcoverings (including lining papers and woodchip), seal the surface of the **SEMPATAP THERMAL** by applying a coat of PVA primer or **SEMPATAP 'A' PRIMER** and allow to dry thoroughly for at least 24 hours in good drying conditions with adequate ventilation. Read fully and carefully follow the wallcovering manufacturers instructions. Use the recommended wallpaper paste/adhesive made up in accordance with the manufacturers instructions.

*** APPLICATION DVD AVAILABLE ***



Steven Leach
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bre

24 February, 2010

Our Ref. Proposal job 260292 & 258487

Dear Steven,

CERT CO₂ savings for 10mm Sempatap Thermal

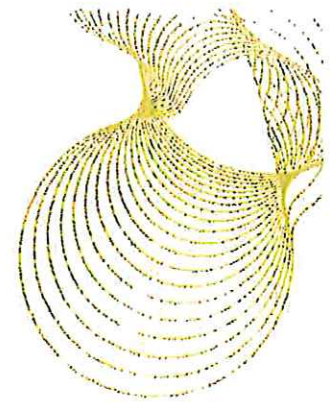
I'm pleased to attach the results from the above studies to calculate the CERT and CO₂ savings per m² for 10mm Sempatap Thermal.

The thermal resistance of 10mm Sempatap (Nolam) insulation material has been measured by the National Physical Laboratory. Their test report, reference 2009110310/1", 12 Jan 2010, states the measured thermal resistance to be 0.194 m²K/W.

The CERT savings in Table 1 are calculated for a single layer of Sempatap Thermal 10mm insulation applied on masonry built solid wall dwellings for the seven standard dwelling types used in CERT. The savings have been calculated using BREDEM (for gas, LPG, electric, oil and solid fuel heating) and a weighted average all fuels, taking a 'before' U-value of 2.1 W/m²K and an 'after' U-values of 1.49 W/m²K and following the calculation methodology for CERT.

Yours sincerely

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CERT CO₂ savings for 10mm Sempatap Thermal.

		10mm Sempatap Thermal (kgCO ₂ /yr)					
dwelling	no.beds	Gas	LPG	Electric	Oil	Coal	Wtd ave
Flat	1	261	293	557	331	691	289
Flat	2	314	354	671	399	832	348
Flat	3	379	427	811	481	1,005	420
Mid-Terrace	2	322	363	689	411	853	357
Mid-Terrace	3	361	406	772	460	955	400
End-Terrace	2	618	696	1,267	773	1,620	680
End-Terrace	3	692	779	1,418	865	1,815	761
Semi-bungalow	2	464	522	956	579	1,218	511
Semi-bungalow	3	501	564	1,032	626	1,315	551
Det-bungalow	2	552	622	1,166	690	1,476	610
Det-bungalow	3	596	671	1,258	744	1,593	658
Det-bungalow	4	640	721	1,352	800	1,711	707
Semi-house	2	674	760	1,380	844	1,769	742
Semi-house	3	725	817	1,484	907	1,902	798
Semi-house	4	776	874	1,589	971	2,036	854
Det-house	2	1,019	1,148	2,176	1,277	2,747	1,128
Det-house	3	1,095	1,234	2,339	1,373	2,952	1,212
Det-house	4	1,177	1,325	2,513	1,474	3,171	1,302

Table 1 Annual carbon savings for CERT and weighted average all fuels kgCO₂/yr.

Notes.

1. The savings assume solid masonry wall of U value 2.1 W/m²K is insulated to U value of 1.49 W/m²K using a single layer of 10mm Sempatap Thermal.
2. All values include the 15% comfort factor reduction
3. All other assumptions identical to CERT calculations done by BRE for OFGEM in 2007.

Fuel	Emissions / kWh	
	kgC	CO ₂
Gas	0.0518	0.1899
Elect	0.1175	0.4308
Oil	0.0680	0.2493
Coal	0.0817	0.2996
LPG	0.0584	0.2140

Table 2 CERT fuel emission data.

Evaluated by BRE using BREDEM
February 2010



CO₂ saving per m² for Sempatap Thermal DIY 10mm insulation

dwelling	no.beds	CO ₂ savings for 10mm Sempatap (kgCO ₂)						Dwelling wall area m ²	Fuel Wtd Ave annual saving kgCO ₂ /m ²	Stock
		Gas	LPG	Electric	Oil	Coal	Wtd ave			
Flat	2	314	354	671	399	832	348	37.6	9.25	19%
Mid-Terrace	3	361	406	772	460	955	400	43.4	9.21	18%
End-Terrace	3	692	779	1,418	865	1,815	761	77.4	9.84	10%
Semi-bungalow	2	464	522	956	579	1,218	511	53.2	9.60	3%
Det-bungalow	2	552	622	1,166	690	1,476	610	65.7	9.29	5%
Semi-house	3	725	817	1,484	907	1,902	798	81.8	9.75	28%
Det-house	3	1,095	1,234	2,339	1,373	2,952	1,212	128.3	9.45	16%

all values include the 15% comfort factor reduction
 Yellow rows above represent base case dwellings.

Stock weighted average saving
 9.39 kgCO₂/m²

Stock weighted average saving (including allowance for wastage)	
Wastage	5.0%
8.92	kgCO ₂ /m ²

Table 3 Annual CO₂ savings per m² for 10mm Sempatap Thermal insulation (kgCO₂/yr)

Notes.

1. The m² wall areas relate to the seven standard typical dwelling types used in CERT.
2. Housing stock percentages from the Domestic Energy Fact File and English Housing Condition Survey.
3. All values include the 15% comfort factor reduction.
4. All other assumptions identical to CERT calculations done by BRE for OFGEM in 2007

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