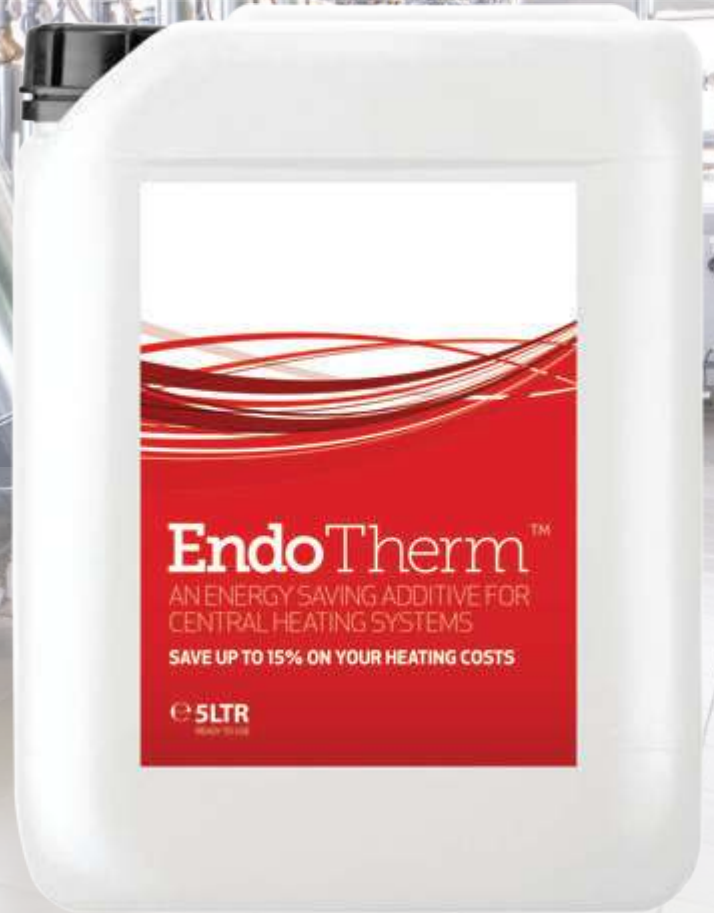




CIBSE BUILDING
PERFORMANCE
AWARDS 2016
ENERGY SAVING
PRODUCT OF THE YEAR



EndoThermTM

AN ENERGY SAVING ADDITIVE
FOR COMMERCIAL & INDUSTRIAL
HEATING SYSTEMS

**SAVE UP TO 15%
ON HEATING
COSTS**

EndoTherm™ Energy Savings Delivered



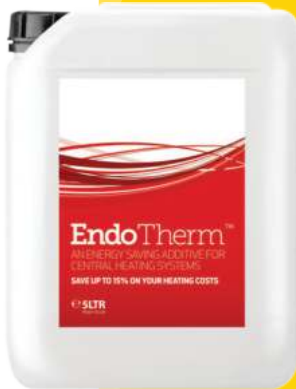
CORPORATE



SCHOOLS



OFFICES



EndoTherm™ works in any wet central heating system and can deliver real energy savings regardless of building size. Our team of experienced advisors will ensure the correct dosage is installed; optimising product performance and maximising savings.

We have many successful case studies covering a multitude of different areas of application from single occupancy residences to large commercial properties. Please contact us for case studies most relevant to your system.



HOTELS



CARE HOMES



LEISURE



HEALTHCARE



HISTORIC BUILDINGS



HOMES



SYSTEM HEATS
UP QUICKER...



STAYS HOTTER
FOR LONGER...



AND USES
LESS ENERGY!

EndoTherm™

A REAL ENERGY SAVING SOLUTION TO IMPROVE HEATING SYSTEM EFFICIENCY

EndoTherm™ is an energy saving additive which can be installed into any wet heating system.

Water is used in heating systems because it is cost effective and readily available, however in reality water alone is not the most efficient transporter of heat. EndoTherm™ simply improves the heat transfer properties of the water within a heating system resulting in a significant effect on the overall system efficiency.

Modern boilers are often marketed on their stand-alone efficiency, but not how they operate as part of a complete heating system. In fact, inefficiencies within a whole heating system (e.g. sizing of radiators/air handling units, oversized boilers, long pipe runs, etc) cause the boiler to overwork. EndoTherm™ reduces this overwork by reaching the desired temperature quicker, then retaining the heat for longer.

EndoTherm™ has been independently proven to use up to 15% less fuel to maintain the same temperature levels as water alone.

EndoTherm™ is produced in the UK and has been successfully installed into thousands of commercial and domestic locations across Europe.



KEY POINTS

- EndoTherm™ is an energy saving additive for commercial heating systems proven to save up to 15%.
- The effects of EndoTherm™ have been independently tested and proven by leading R&D company: Enertek International.
- EndoTherm™ is proven to be non-corrosive and works with all brands of inhibitors.
- Easy 1% system dosage.
- EndoTherm™ will work in any closed, wet central heating system.
- 100% organic with low carbon footprint and high carbon reduction potential.

EndoTherm™ Commercial Case Studies

EndoTherm™ has now been installed in a large number of commercial properties. To support the accreditation achieved from independent test bodies, Endo Enterprises have recorded the savings achieved by users of EndoTherm™ in real-life situations.

Each installation is surveyed to identify the optimum volume of EndoTherm™ required to ensure the quickest return on investment (usually 6-12 months). Historic gas readings are then compared with the recorded usage after the product is installed to identify the savings delivered by EndoTherm™.

Degree days are used in each case study to compensate for the variances in external temperatures over different months and years. This provides a true reflection on the effectiveness of EndoTherm™ in a heating system.

The case studies that follow are just a few headlines from our large portfolio of case studies across a broad spectrum of installations. If you are looking for a case study that more closely matches your potential installation that is not featured here or you would like further detail on any of the following case studies don't hesitate to get in touch.

KEY INFORMATION

DURATION: 10 MONTHS

**REPORTED SAVING:
17.9%**

**FINANCIAL SAVING:
£10,434**

SPORTS & LEISURE CENTRE

- Large sports & Leisure Centre with swimming pool.
- Heated by 2 x Ideal Viceroy GT boilers with a 100,000L system volume.
- 100 Litres of EndoTherm was installed in January 2013.
- 10 month trial period. Compensated saving: 17.9%
- 84.7 tonnes of CO₂ saved.
- ROI achieved within trial period.

KEY INFORMATION

DURATION: 5 MONTHS

**REPORTED SAVING:
20.56%**

**FINANCIAL SAVING:
£3,636**

LOCAL COUNCIL - CIVIC CENTRE

- Centre heated via Air Handling Units by 2 large commercial boilers (3.6M BTW).
- Annual consumption of over 900,000 kWh.
- 30 Litres of EndoTherm was installed in November 2014.
- 5 month trial period. Compensated saving: 20.56%
- 26 tonnes of CO₂ saved.
- ROI within 5 months.

KEY INFORMATION

DURATION: 4.5 MONTHS

**REPORTED SAVING:
11.34%**

**FINANCIAL SAVING:
£1,303**

LARGE COMMERCIAL OFFICE BUILDING

- 9 storey commercial office building home to multiple businesses.
- Heated by 3 x 111kW Remeha boilers. Each floor serviced by 16 double radiators.
- 30 Litres of EndoTherm was installed in December 2014.
- 4.5 month trial period. Compensated saving: 11.34%
- 12.7 tonnes of CO₂ saved.
- Payback due within first year.

NOTE: Financial savings calculated using supplied historical energy bills for each case study, price per kWh varies.

KEY INFORMATION

DURATION: 3 MONTHS

**REPORTED SAVING:
15.67%**

**FINANCIAL SAVING:
£214.10**

HOUSING ASSOCIATION - HEAD OFFICE

- Head office of North West housing association. Heated by 70kW boiler.
- 4.5 Litres of EndoTherm was installed in November 2013.
- 3 month trial period. Compensated saving: 15.67%
- 1.5 tonnes of CO₂ saved.
- Projected ROI within 6 months.

KEY INFORMATION

DURATION: 6 MONTHS

**REPORTED SAVING:
16.1%**

**FINANCIAL SAVING:
£2,069**

GROUND SOURCED HEAT PUMP - STATELY HOME

- Grade I listed stately home with over 145 rooms and 250,000 visitors per year.
- 2 x 110kW GSHP with over 3 acres of collector pipework under adjacent lake.
- 65 Litres of EndoTherm was installed in July 2014.
- 6 month trial period. Compensated saving: 16.1%
- 46 tonnes of CO₂ saved.
- Expected payback 1 year. EndoTherm can also be installed in the secondary radiator circuit to further improve efficiency.

KEY INFORMATION

DURATION: 23 MONTHS

**REPORTED SAVING:
10.35%**

**FINANCIAL SAVING:
£2,877**

NHS - SPECIALIST CENTRE FOR REHABILITATION MEDICINE

- Stand-alone rehab unit within NHS hospital. 16 single occupancy rooms.
- 300kW boiler system and 70 radiators. Total system volume of 1400L.
- 14 Litres of EndoTherm was installed in November 2013.
- 23 month trial period. Compensated saving: 10.35%
- 20,862 tonnes of CO₂ saved. ROI 3.5 times over during 23 month period.
- Second trial site saved 22% over a 3 month trial period.

KEY INFORMATION

DURATION: 7 MONTHS

**REPORTED SAVING:
15.5%**

**FINANCIAL SAVING:
£227.87**

NHS - COMMUNITY HEALTH SERVICES CLINIC

- NHS 'Stay and Play' Clinic. Part of local community hospital.
- Single storey building with a 40kW combi-boiler and 17 radiators.
- 3 Litres of EndoTherm was installed in November 2013.
- 7 month trial period. Compensated saving: 15.5%
- 1.8 tonnes of CO₂ saved. ROI occurred during trial period.
- Similar install in neighbouring clinic saved 12.83% over 7 months.

KEY INFORMATION

DURATION: 6 MONTHS

**REPORTED SAVING:
12.5%**

**FINANCIAL SAVING:
£1,990**

CARE HOME - SHELTERED ACCOMODATION SCHEME

- 30 single bedroom flats, communal social areas, and library.
- 17 Litres of EndoTherm was installed in August 2014.
- 6 month trial period. Compensated saving: 12.5%
- 6.7 tonnes of CO₂ saved.
- Payback achieved within observed period.

EndoTherm™ Independent Studies



Enertek International are a privately owned independent R&D company who work on projects on behalf of major multinational corporations, leading private companies, trade associations, and government departments.



We have made it critical to our mission that all our product claims are tested, proven and accredited by key, respected, independent authorities which has led to Enertek completing a large portfolio of testing and development on our behalf.

Key headlines from the programme of works undertaken by Enertek using quality systems and instruments calibrated and traceable to national standards:

DECLARATION OF PRODUCT PERFORMANCE

"Direct comparison tests with and without EndoTherm™ in the system water indicate that the gas consumption of the boiler in the heating system can be reduced by up to 15%. This empirical evidence indicates that the addition of EndoTherm™ can significantly reduce gas consumption and therefore CO² emissions."

CORROSION INHIBITOR COMPLIANCE

"The addition of EndoTherm™ to a solution of (brand name removed) inhibitor in both hard and soft water applications does not affect the corrosion inhibition on mild steel, aluminium or copper."

ANTI SCALING AND SILENCING

Use of EndoTherm™ allows "the heating system to be maintained at its most effective operating conditions by reducing internal scaling as well as reducing noise levels."



The University of Central Lancashire has a number of internationally recognised research centres that provide access to the universities expertise and outstanding facilities.

EndoTherm™ was tested by UCLAN at the Burnley Campus workshops in November 2013.

The recorded gas consumption for the two tests was compared and the results showed that systems dosed with EndoTherm™ consumed 10.4% less gas than the systems containing only water.



Tomorrows Air Solutions are the most experienced manufacturer of heating equipment in the UK, offering independent advice and service to the restoration industry.

TAS created a sealed test chamber in which heat exchangers, moving 500m³ of air every hour aimed to heat a wooden block to a core temperature of 50°C.

Results showed that water dosed with EndoTherm™ used 23.7% less energy to raise the temperature of the block when compared with water alone.

Meadowhead Consultancy Ltd.

The Meadowhead Consultancy has over three decades of experience in providing consultancy and testing services to the United Kingdom water treatment industry.

Tests on the corrosive nature of EndoTherm™ were conducted using a Buildcert test rig over 14 days in both hard and soft waters. Both metals and seal materials showed less corrosion in EndoTherm™ dosed systems then compared with untreated hard and soft water. This test backed up an ongoing study carried out at a local college. An inspection of the heating system after 21 months confirmed that the system was in excellent condition and there was no deterioration whatsoever in the Buderus boiler aluminium heat exchanger, or in the copper pipework of the system.

EndoTherm™ FAQs

HOW MUCH ENDOTHERM™ DO I NEED?

EndoTherm™ is dosed at a 1% ratio of total system volume. For more advice on calculating system volume please contact a member of the EndoTherm™ team.

WHAT VOLUME CONTAINERS IS ENDOTHERM™ AVAILABLE IN?

EndoTherm™ is available in 500ml and 5L containers. 10L and 20L containers are available on request.

DOES ENDOTHERM™ WORK IN ANY HEATING SYSTEM?

Yes, EndoTherm™ is suitable for any wet heating system regardless of size.

HOW LONG DOES ENDOTHERM™ LAST?

EndoTherm™ will remain in a closed heating system without any deterioration for at least 5 years, according to independent tests.

DOES ENDOTHERM™ DAMAGE MY HEATING EQUIPMENT?

Extensive testing has been carried out and EndoTherm™ has been proven to have no corrosive or damaging effects on the materials found within heating systems.

SHOULD ENDOTHERM™ BE APPLIED TO A CLEAN OR EXISTING FILLED SYSTEM?

EndoTherm™ will work in any existing system whether “clean” or “dirty”. It is recommended that systems are flushed before the installation of EndoTherm™ to maximise energy savings.

CAN ENDOTHERM™ WORK IN CONJUNCTION WITH AN INHIBITOR?

EndoTherm™ complements inhibitor products. EndoTherm™ has some inhibitor properties itself and functions alongside inhibitors without issue.

IS ENDOTHERM™ GREEN?

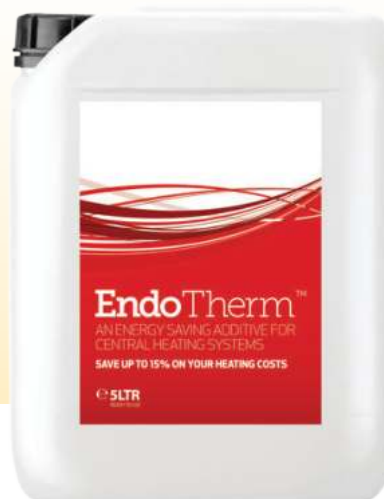
EndoTherm™ is 100% organic with a low amount of embedded carbon. Per litre there is 1.1kg of CO₂ and the potential to save 1000 times that amount of CO₂ per annum.

1% SYSTEM DOSAGE

ROI 9-12 MONTHS
(10% SAVING ASSUMED)

6x PAYBACK
OVER 5 YEARS

BUSINESS CASE



1.1kg OF CO₂ INPUT
PER LITRE

1000x CO₂ SAVING
PER ANNUM

5000x CO₂ SAVING
OVER 5 YEARS

EndoTherm™

SOME TESTIMONIALS

"The trial of EndoTherm™ at our head office has demonstrated a saving of 33% compared with the same period last year. Consideration is now being given to implementing this technology into a larger site such as the Town Hall!"

- Cabinet Member: Public Health and Housing

"EndoTherm™ was installed into a low secure inpatient service in South Wales. Within days the temperature in the home had noticeably increased. Our maintenance department had to lower the setting on the boiler to compensate. At the end of the month our gas consumption was 15.6% lower than the same month last year adjusted with degree days. Obviously we are very pleased with this result!"

- Director, South Wales healthcare group

"The trials with EndoTherm™ in our boilers have been very impressive. We have noted less circulating noise and better conductivity. We will install EndoTherm™ into any central heating systems we install in the future."

- Heating Engineer



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THE **BIG** in association with
M&S
INNOVATION **PITCH** WINNER
EST. 1884



GMS Services Ltd
GMS House, Grove Lane
Standish, Wigan
WN6 0ES

Tel. 01257 424 459
Mob. 07740 102 757
Web. www.gmsservicesltd.co.uk