

Entry Form

Energy Saving Product of the Year

This award recognises outstanding new and/or innovative products that will make significant contributions to improving building performance.

Entries should be for products introduced or launched between **1 September 2014 – 31 August 2015**.

Please complete the entry form below. The headings reflect the judging criteria and the judges will be looking for you to provide the relevant information under each heading.

Submission instructions

1. Complete and save this document
2. [Click here to submit your entry online](#)
3. Complete the required fields and follow the instructions on the online entry system
4. Upload your entry form and supporting documents
5. Click finish to submit your entry

If you have any questions then please contact us on 020 7880 7625 or by email to lois.hunt@redactive.co.uk.

Entrant details

Full name	Job title
Dale Edginton	EndoTherm Product Manager
Organisation	
Endo Enterprises (UK) Ltd	

Product details

Product name

As you wish the product to be referred to throughout the competition.

EndoTherm

Organisations

Please provide the names of all organisations that you would like to be credited in your entry. Please ensure that the company names you list are accurate as we may reproduce these on screen and in print. It is essential that you have the consent of all those named below to include them.

Endo Enterprises (UK) Ltd

Summary

Please provide a synopsis of the product and its objectives.

EndoTherm is an energy saving central heating additive independently proven to save 15% on heating bills. EndoTherm is suitable for ANY wet heating system from traditional wet heating systems, GSHP, ASHP and Solar Thermal. The technology can also work in improving chilled water systems.

EndoTherm is dosed at just 1% and changes the surface tension of water, reducing it by over 60%. This in turn breaks down the hydrogen bonds in water making the water wetter. A wetter substance can access the imperfections across a metal surface thus increasing available surface area for heat transfer. This increased surface area improves heat transfer efficiency ($Q = UA\Delta T$) meaning rooms heat up quicker and the boiler load is reduced to maintain temperature within a property!

Entry criteria

Please outline how your entry meets each of the entry criteria – judges will be looking for information in each of the sections when assessing the entries.

Any documents, charts or photos should be referenced and included in your supporting documents.

Evidence of research, testing, and development.

EndoTherm has been tested for performance, longevity, corrosion and compatibility with other chemical additives by a number of independent test houses.

Endo Enterprises are continuing to develop the product for new applications including Ground Sourced Heat Pumps, Solar Thermal, District Heating and Chilled Water Systems.

Performance

EndoTherm has been tested by ISO17025 testhouse Enertek International in Hull. Enertek conducted a number of trials over a 12 month period prior to product launch. Enertek recorded a 15% saving and produced a declaration of product performance to support this finding. EndoTherm was also tested by UCLAN and Tomorrow Air Solutions (Air Handling Unit system) achieving a 10.4% & 23.7% saving (respectably).

In the past 12 months there have been a multiple of EndoTherm trial installations serving as case studies. Savings have averaged at 17.5% (compensated with Degree Days) during that time period.

Corrosion

EndoTherm is less corrosive than hard and soft water. Testwork by Meadowhead Consultancy identified a reduction in corrosion in a variety of metals, plastic and rubber (seals) when compared with untreated water. Whilst not at BuildCert inhibitor levels, further testwork by Midland Corrosion proved that the product does not impact inhibitors and levels remained easily within BuildCert levels.

Longevity

A 21 month corrosion test was conducted at Carshalton Collegue looking at performance (average saving of 16%), thermal stability and corrosion of the product. EndoTherm was still thermally stable after those 21 months (Early installs during the development of the product which are 5 years old show no sign of EndoTherm thermal degradation) with no signs of significant corrosion during that time period.

Compatibility with other Additives – Glycol

EndoTherm has been shown by Enertek International & TAS to improve the performance of HTC (Heat Transfer Chemicals). A combination of EndoTherm and Propylene Glycol reduced the heat demand in the same system mentioned above by 35%.

An install of EndoTherm at Castle Howard (statly home in Yorkshire) into the primary Glycol filled circuit of a GSHP reduced the electrical workload of the compressor by 16.1% over a 6 month period.

Innovation in design, technology and/or application.

EndoTherm is a truly innovative product. Although there have been attempts to save energy by changing the physical chemistry of the water in a heating system; non have reached the same levels as EndoTherm. EndoTherm changes the surface tension of the water which allows radiators/ AHU etc to have a larger surface area without increasing the volume of water flowing around a system.

We are actually progressing the field of boundary layer thermodynamics which not a lot is currently known about. We continue to work with a number of universities around the country to progress the science behind the product. This will continue in academic research for years to come.

EndoTherm is also 100% organic, which gives the product an incredibly low Carbon Footprint (will touch on that later) and no restrictions in recycling or disposing of the product.

Improvement over existing products in terms of performance, energy or resource (e.g. water) efficiency and carbon saving.

The only similar product we are aware of is Fernox F6 which does a similar thing. However the savings identified by Fernox are 0.8-1.2% which are significantly smaller than the savings confirmed by Enertek International (15%). This is due to the large difference in the magnitidue of change that EndoTherm can make to the surface tension of water.

In terms of reducing the heating load, there are a number of products that work within a system and work in different ways. EndoTherm affects a different part of the heating system (the water itself) so the savings in can make are not affected by other energy saving products.

Mitigation of the environmental impact of production.

EndoTherm is 100% organic. This means it has a remarkably low Carbon Footprint. A 500ml bottle, suitable for a house up to 12 radiators has 0.58kg of embedded CO₂.

According to DECC, the average house uses 15,000kWh of gas per year. A 15% saving would be 2250kWh.

A 2250kWh reduction in gas is over 400kg per annum (0.203kg per kWh – Carbon Independent) or 2 tonnes over a 5 year period. This is almost 4000 times the initial input. A massive reduction in Carbon.

Use of recycled materials and recyclability of the product.

EndoTherm is 100% organic using materials that are easily reusable or recyclable.

Performance in operation as well as factory or laboratory test results.

EndoTherm has been tested by ISO17025 testhouse Enertek International in Hull. Enertek conducted a number of trials over a 12 month period prior to product launch. Enertek recorded a 15% saving and produced a declaration of product performance to support this finding. EndoTherm was also tested by UCLAN and Tomorrow Air Solutions (Air Handling Unit system) achieving a 10.4% & 23.7% saving respectably).

In the past 12 months there have been a multiple of EndoTherm trial installations serving as case studies. Savings have averaged at 17.5% (compensated with Degree Days) during that time period. These savings have included case studies in Council Buildings, Large Office Blocks, Care Homes, Hospital Buildings, Leisure Centres, Museums, University Buildings to name a few. All case studies are compensated with degree days and verified by the customer. Case Studies are available upon request.

Evidence of how the product reduces carbon emissions.

The Carbon Footprint of the product has been calculated by EuGeos during a Carbon Footprint report conducted on Endo Enterprises and EndoTherm. EuGeos used ISO14040 and ISO14044 & PAS 2050:2011 international standards covering life cycle assessments to conduct the study.

The calculation on Carbon Savings are based on independent verified results from DECC and Carbon Independent aswell as performance data from Enertek International to confirm product performance.

Clear product technical information for specifiers, designers, installers and operators.

Endo Enterprises (UK) Ltd supports all its products with comprehensive technical information and we have risk assessments, operation procedures and SDS for a variety of EndoTherm installations.

EndoTherm is installed at a 1% solution. It can be installed similar to other chemical additives via magnetic filters, dosing pots or through outlet valves (or even through radiator valves).

Operation and maintenance information.

Once installed, EndoTherm is a leave in place technology that requires NO collaboration and maintenance. EndoTherm only needs replacing if it is drained out of a heating system.

Further Information

Please provide any further information, evidence or references that you would like to include in your entry.

EndoTherm won the H&V News Awards 2015: Domestic Product of the Year (Sustainability and Safety) and was finalized for Commercial Product of the Year.

EndoTherm also won the M&S Big Innovation Pitch 2015 Live at EcoBuild and is now being tested by Marks & Spencers and installed in some of their stores with views of a potential roll – out based on performance.

Supporting Documents

Entries should include supporting documents or evidence to supplement this written part of the submission. All supporting documents should be collated into one PDF document for upload.

Please explain in a list or one or two sentences what your supporting documents add to your submission.

EndoTherm Brochure

Enertek Declaration of Performance

Enertek Summary Document – Overview of findings

Enertek Glycol Report – Compatibility with Glycol.

Meadowhead Corrosion Report

Midland Corrosion – Compatibility with Inhibitors

Tomorrow Air Solution – Performance with and without Glycol

Carshalton Longevity Report

EuGeos Carbon Footprint Report.

Example of 2 / 3 Case Studies from Winter 2015.