



E n e r t e k  
International  
Limited

Project Number: E3363  
Project Title: EndoTherm™  
Client: Endo Enterprises Ltd  
Date: 17 January 2014

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## BRIEF

To establish if adding a prescribed amount of Endo-Therm™ Solution to the water of a typical central heating system can result in a reduction in the gas consumed by the heating boiler.

Test	Test Solution	Room Stat ambient °C	Boiler Return °C	Boiler Flow °C	Boiler Fuel Lab ambient °C	Room air inlet °C	Room air outlet °C	Radiator 1 °C	Radiator 2 °C	F&R Diff Temp	Gas Used m3	Saving %
PV7	Test 1 Water	27.5	38.9	49.7	43.1	26.7	29.1	51.2	53.6	10.8	5.41	
PV7	Test 2 Endo/Water	27.5	36.9	49.5	41.4	26.8	28.9	48.7	51.0	12.7	4.59	-15.2
PV8	Test 3 Endo/Water	26.7	34.2	47.5	38.2	27.4	27.7	43.4	46.1	13.3	3.26	-8.4
PV8	Test 4 Water	26.9	34.7	48.9	38.6	26.8	28.0	45.0	47.7	14.2	3.56	
												Avg 11.8%

**Conclusions**

Under the specified test conditions the use of EndoTherm results in a reduction in gas consumed by the boiler over a 24hr period

The laboratory ambient was consistent for all x4 tests

The system water is hotter when the system contains water only (no EndoTherm)

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Each test result was consistent with it comparator eg PV7 test 1 & 2 or PV8 test 3 & 4.

There's a 5.3% deviation/inconsistency between the results of tests PV7 & PV8 perhaps due to 'soaking' or residual effect of Endo solution or alternatively change in heat loss.

## CONCLUSIONS

When operated under the test conditions described within this report, the addition of EndoTherm™ solution to the heating system water resulted in a reduction in the gas consumed by the heating boiler of up to 15% within the 24hr test period.

Tests also show that the introduction of EndoTherm™ solution into the system water resulted in a reduction in the number of boiler-burner cycles (24hr), without affecting the average room temperature (24hr) by more than 0.2°C.

Results also appear to indicate that leaving the EndoTherm™ solution in the heating system for an extended period (>7 days) resulted in a further reduction in gas consumption.

A number of theories exist as to how and why introduction EndoTherm™ solution into the heating system, can cause a reduction in fuel consumption. In order to substantiate some of these theories, it is necessary to establish a greater scientific understanding of the solution and to consider the need for further, more refined test methods.

## DECLARATION OF PRODUCT PERFORMANCE

EndoTherm™ solution was tested in a gas fired central heating system at the Enertek International Research Establishment during December 2013.

Direct comparison tests with and without the recommended concentration of EndoTherm™ additive 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™ (additive 1.02) can significantly reduce gas consumption and therefore CO2 emissions.

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