

# ECCO STOVE®

Natural Heating



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The Heart Of Your Home

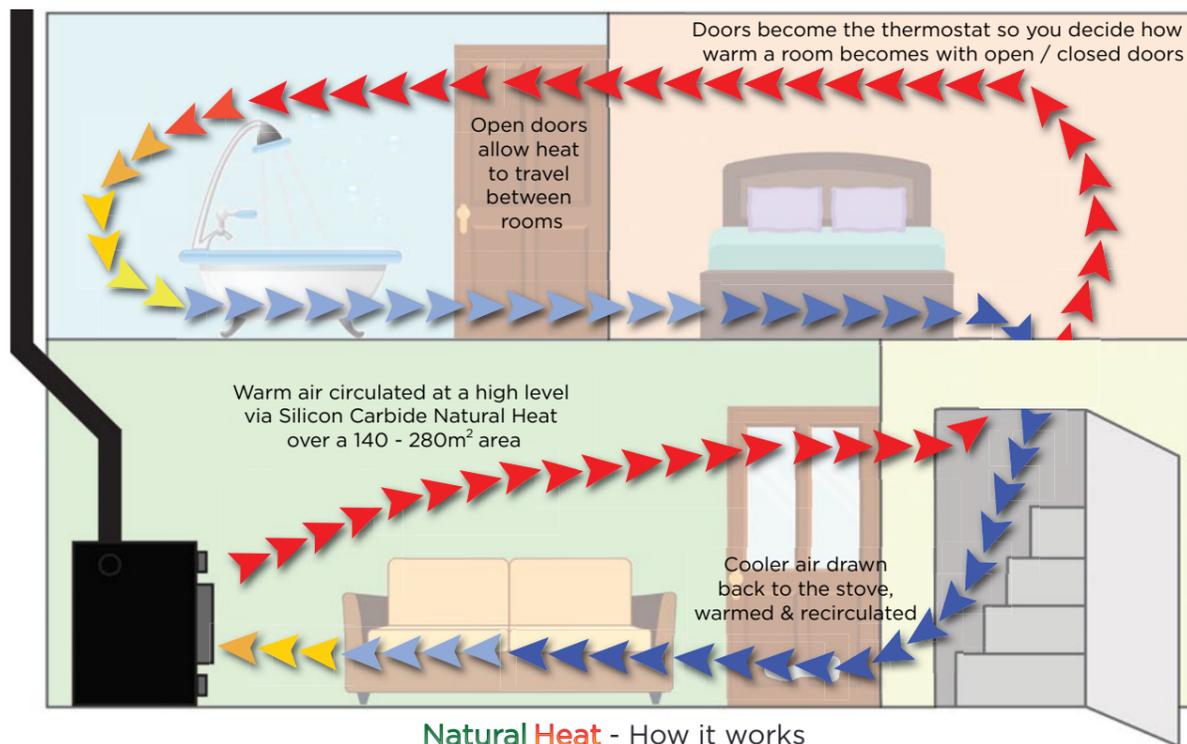
# THE ECCO STOVE®

The alternative home heating solution - No need for radiators, air ducting or electrical connections, just **Natural Heat**

First being produced in 2008, the Ecco Stove® is a hybrid masonry heater with a performance that balances the best of both traditional steel or cast iron wood burning stoves with masonry thermal mass heaters. As in the diagram below, the Ecco Stove® Natural Heat System drives warm air throughout a whole property using a lower frequency heat wave emitted by the Ecco Stove's Silicon Carbide body mass. The Ecco Stove® moves warmer air at a high level into each room, while cooler air is then drawn back at a low level to the stove and warmed up again using the heat stored

within the mass of the stove for up to 12 hours, (model dependent) after the fire has gone out.

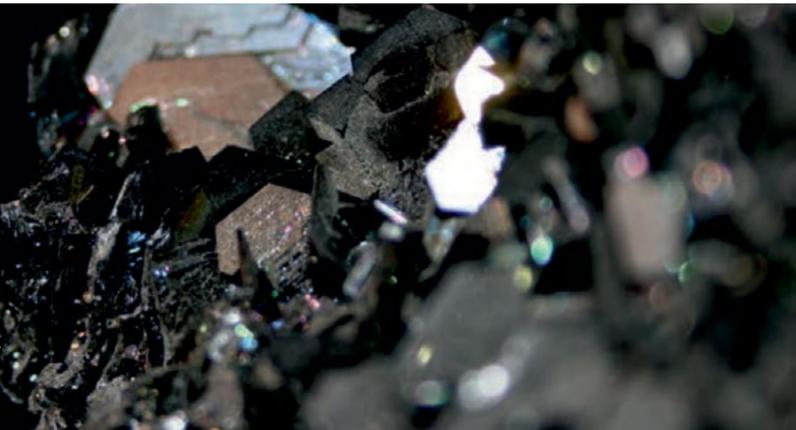
This simple process creates a circulation of warm air throughout the home providing a balanced temperature room to room, with typically only a 1-1.5°C temperature difference per room into which the heat migrates simply by keeping the room doors open. This also gives the home a fresh feel as air is allowed to circulate with the gentle warmth created by the Ecco Stove®.



Natural Heat - How it works

# SILICON CARBIDE

Silicon Carbide (SiC) is used in a wide variety of industries due to its unique characteristics such as its high heat resistance, density and conductivity. Originally found in meteorites in its only natural form, it is now produced through a fusion of Carbon and Silica and is the next hardest wearing mineral to diamond. For the Ecco Stove® SiC serves several purposes allowing long range projection of heat and withstanding temperatures up to 2200°C.



# MORE THAN JUST A STOVE

Getting the most out of your fuel

The Ecco Stove® is designed to burn at a highly efficient level, capturing as much of the heat potential as possible while distributing heat evenly over a large area. The diagram below illustrates how air is taken in via the ash can and pre-set air points. Air is then driven throughout the fire chamber to produce a washing machine effect of tumbled unburned volatiles at incineration temperatures to minimise emissions and particulates before being released to atmosphere for a carbon neutral combustion.

The core temperature of the stove reaches an incredible 900-1100°C increasing the burn efficiency. The body shields this heat in the appliance, typically running at a surface

temperature of 150-200°C / 302-392°F (about half to a third the surface temperature of a metal stove) so as not to overheat the room. Waste heat from the flue gases is then collected as a heat exchanger would within the mass and evenly distributed throughout the body via contraflow channels with typically as little as 160-180°C being released into the chimney, as opposed to 350-450°C with a conventional metal stove.

The simple operation of the Ecco Stove® with only one control to use makes running your stove straightforward. Just sit back and enjoy the benefits of natural, efficient heat.

1. Air is drawn into the ash can (primary air) to rapidly heat the mass up to a minimum 150°C / 302°F (measured with the provided thermometer at top centre (ideally 200°C / 392°F)) when catalysing begins within the firebox. (When using the Hotbox with Domestic Hot Water, temperatures are approximately half those shown above).
2. Flue gas is deflected by a baffle system toward B and C simultaneously for clear glass operation and turbulence within the combustion process.
3. Gasification takes place via tertiary air introduction at point C for cleanest combustion after which flue gases pass through the appliance via double pass contraflow flue ways to absorb as much heat from the flue gases as possible before exiting to atmosphere.

Contra flow flue gas channels:  
645, 678, 730 & 850 models



- A. PRIMARY AIR: Air in.
- B. SECONDARY AIR: Pre-heated air for clear glass operation.
- C. TERTIARY AIR: Pre-heated for final re-burn within the fire chamber for cleanest combustion.

Using contra flow technology, the Ecco Stove® maximises heat absorption and distribution properties by evenly distributing heat through the stove body while reducing waste heat to atmosphere.



580

Natural Heat

Eco Ready 2022



580 in Honey Glow Brown



645

Natural Heat

Eco Ready 2022



645 in Light Grey



HEAT RETENTION  
5-6 Hours

ENERGY CLASS  
A

EFFICIENCY  
80.4%

DEFRA Exempt

AREA HEATED  
140m<sup>2</sup>  
(1500ft<sup>2</sup>)

ROOMS HEATED  
Up to 7

OUTPUT  
6.6kw  
(21500 BTU)

LOG LENGTH  
14.5"  
(370mm)

HEAT RETENTION  
8.4 Hours / 90 MJ

ENERGY CLASS  
A+

EFFICIENCY  
93%

DEFRA Exempt

AREA HEATED  
220m<sup>2</sup>  
(2368ft<sup>2</sup>)

ROOMS HEATED  
Up to 10

OUTPUT  
8.4kw  
(28662 BTU)

LOG LENGTH  
13.5"  
(340mm)

The smallest model in the range and the only model to use a tri-baffle system as opposed to contraflow channels. The 580 bridges the gap between the traditional stove design and size, while providing many of the benefits of the larger Ecco Stove® models. This model is capable of heating up to a two-bedroom property (up to 140m<sup>2</sup>) with an output of only

6.6kw using the Ecco Stove® Natural Heat System.

Weighing in at 270kg the 580 has a great deal more mass than a conventional stove, allowing for 5-6 hours of heat production after the fire has gone out. Options include a hot box for ducting air to closed rooms and domestic hot water.

The 645 model is currently the most efficient in the range at 93%, utilising its catalysing properties. Airflow for the secondary air intake has been directed from the rear of the stove ensuring a preheated, very efficient airwash to give a sleek finish and clear glass. Modelled on the smaller 580 model but with contraflow channels and more mass at 600kg, the 645 has all the features of a conventional stove and

a masonry heater. With up to 8 hours of heat retention at 25% of the initial heat charge after the fire has gone out, the 645 is able to heat up to a three bedroom home (up to 220m<sup>2</sup>) using the Ecco Stove® Natural Heat System.

Also available with an external air kit and a hot box for ducting air to closed rooms or adding heating for domestic hot water.

Colour Options



(Please note: Final colours may differ due to natural variations in material)

Colour Options



(Please note: Final colours may differ due to natural variations in material)



Sparkle Black



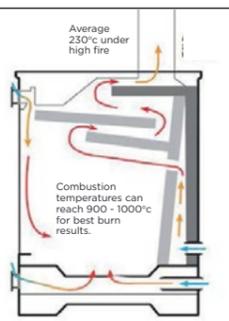
Mojave Red



Metallic Blue



Natural



580 Gas Flow



Light Grey



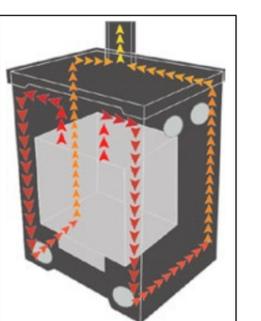
Honey Glow Brown



Light Grey



Natural



645 Gas Flow

678

Natural Heat

Eco Ready 2022



678 in Sparkle Black and Light Grey with Heat Shield



730

Natural Heat

Eco Ready 2022



730 in Natural and Light Grey



- HEAT RETENTION: 12.3 Hours / 114 MJ
- ENERGY CLASS: A/A+
- EFFICIENCY: 80.8% / 88%
- DEFRA Exempt
- AREA HEATED: 240m<sup>2</sup> (2300ft<sup>2</sup>)
- ROOMS HEATED: Up to 10-12
- OUTPUT: 9.4kw (32000 BTU)
- LOG LENGTH: 15.75" (400mm)

Combining a timeless design with a balanced heat retention and distribution - the 678 is our most popular model in the range. Using the Ecco Stove® Natural Heat System this model will heat up to a three to four bedroom home (up to 240m<sup>2</sup>). Built in contraflow channels absorb heat from the flue gases ensuring as much waste heat as possible is captured. Also available with our catalysing effect, you can decide whether you want a highly or super-efficient heater. With up to 12.3 hours of heat retention at 25% of the

initial heat charge after the fire has gone out, the 678 makes heating your home as simple as possible.

It comes with a range of options such as the extension section which raises the combustion chamber to add height and mass; the hot box adding a ducting option to closed rooms; domestic hot water heating and an external air kit. We also offer a heat shield for situating the stove on combustible floors or adjacent to combustible walls.

### Colour Options



(Please note: Final colours may differ due to natural variations in material)



Mojave Red Natural Light Grey Honey Glow Brown 678 Gas Flow

- HEAT RETENTION: 7 Hours / 120 MJ
- ENERGY CLASS: A+
- EFFICIENCY: 83.9% / 86.5%
- DEFRA Exempt
- AREA HEATED: 260m<sup>2</sup> (2500ft<sup>2</sup>)
- ROOMS HEATED: Up to 12
- OUTPUT: 10.5kw (34000 BTU)
- LOG LENGTH: 15.75" (400mm)

With a large glass door and 600kg of mass, the 730 provides a faster distribution of heat than the other models in the range, while still holding onto 7 hours of heat retention at 25% of the initial charge. The larger glass door makes for a fantastic display of the fire. This makes it perfect for open plan properties and up to a four bedroom home (up to 260m<sup>2</sup>)

utilising the Ecco Stove® Natural Heat System. Built in contraflow channels absorb heat from the flue gases ensuring as much waste heat as possible is captured. Also available with our catalysing effect, you can decide whether you want a highly or super-efficient heater.

### Colour Options



(Please note: Final colours may differ due to natural variations in material)



Light Grey Honey Glow Brown Natural Flat Black 730 Gas Flow

850

Natural Heat



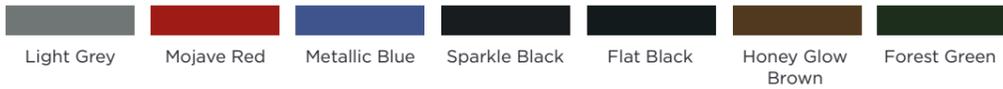
850 in Flat Black and alloy

- HEAT RETENTION**  
 7 Hours / 134 MJ
- ENERGY CLASS**  
A+
- EFFICIENCY**  
 85.3%
- DEFRA Exempt**
- AREA HEATED**  
 280m<sup>2</sup> (3000ft<sup>2</sup>)
- ROOMS HEATED**  
 Up to 15
- OUTPUT**  
 11.5kw (38000 BTU)
- LOG LENGTH**  
 19" (483mm)

The original Ecco Stove® is also the largest with 800kg of mass. The curved front design with solid lines can be utilised for traditional or modern spaces depending on your colour choice. This model is able to heat up to a four to five bedroom home (up to 280m<sup>2</sup>) using the Ecco Stove® Natural Heat System. Built in contraflow channels absorb heat from the flue gases ensuring as much waste heat as possible is captured. Our simple control

process and batch loading allows you to get the most out of your fire for the minimum effort. With 7 hours of heat retention at 25% of the initial charge and a large surface area to distribute heat, the 850 will become the heart of your home. The 850 is also available with an external air kit and heat shield for siting on combustible floors or adjacent to combustible walls.

Colour Options



(Please note: Final colours may differ due to natural variations in material)



Light Grey    Honey Glow Brown    Almond    Flat Black    850 Gas Flow

# HEAT RETENTION AND DISTRIBUTION

Heat retention	Rooms Heated
<b>580</b> 580 Output 	
<b>645</b> 645 Output 	
<b>678</b> 678 Output 	
<b>730</b> 730 output 	
<b>850</b> 850 output 	

Key:

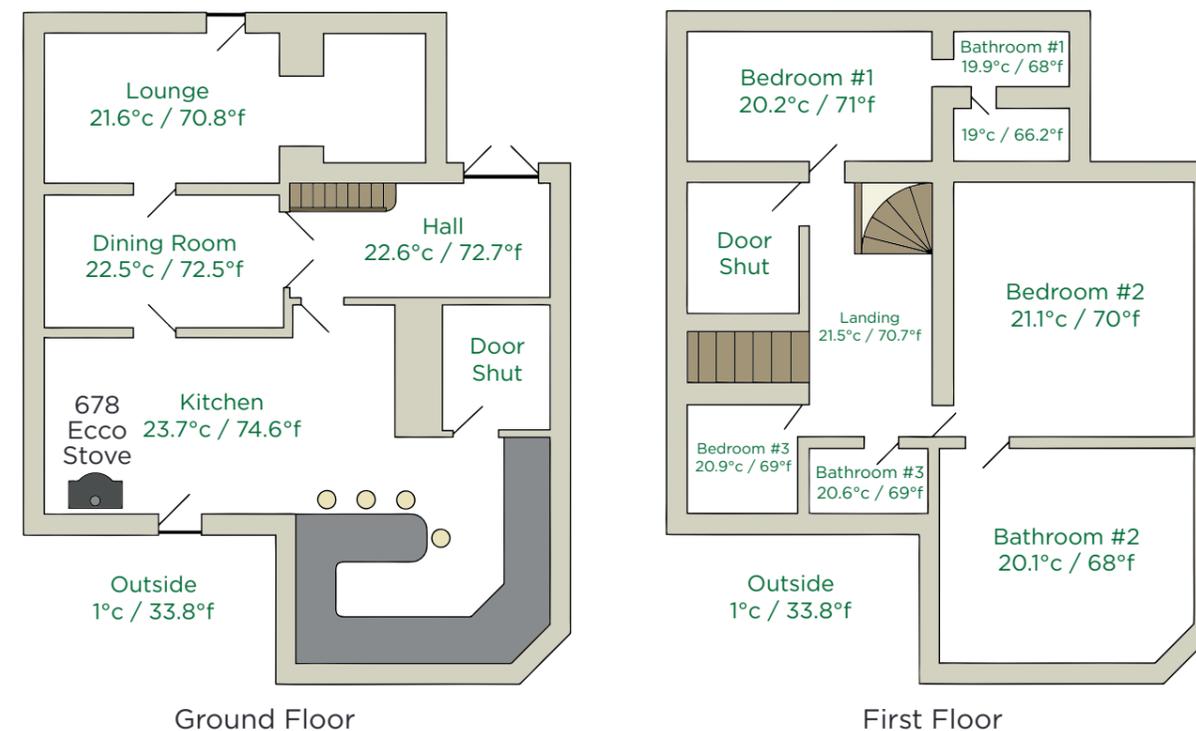
- 23°C / 73°F: Room containing Ecco Stove and temperature
- °C / °F: Room temperatures in celsius and fahrenheit
- : Natural Heat circulation
- : Stairs

# TECHNICAL SPECIFICATIONS

ECCO STOVE®	580	645	678	730	850
<b>Dimensions</b>					
Height	730mm   28 3/4"	884mm   34 3/4"	878mm   34 3/4"	1046mm   41 1/4"	1120mm   44"
Width	580mm   22 3/8"	645mm   25 1/3"	678mm   26 3/4"	730mm   28 3/4"	850mm   33 1/2"
Depth	500mm   19 3/4"	525mm   20 3/4"	525mm   20 3/4"	500mm   19 3/4"	540mm   21 1/4"
Log length	370mm   14 1/2"	340mm   13 2/5"	420mm   16 1/2"	400mm   15 3/4"	483mm   19"
<b>Output / Retention / Efficiency</b>					
KW	6.6	8.4	9.4	10.5	11.5
BTU	21,500	28,662	32,000	34,000	38,000
MJ Stored	N/A	90	114	120.7	134
Heat stored	5-6 hours @ 25%	8.4 hours @ 25%	12.3 hours @ 25%	7 hours @ 25%	7 hours @ 25%
Area Heated	140m <sup>2</sup>   1500ft <sup>2</sup>	220m <sup>2</sup>   2368ft <sup>2</sup>	240m <sup>2</sup>   2583ft <sup>2</sup>	260m <sup>2</sup>   2800ft <sup>2</sup>	280m <sup>2</sup>   3000ft <sup>2</sup>
Rooms Heated	Up to 6	Up to 10	Up to 12	Up to 13	Up to 15
Efficiency	80.40%	93%	80.8 - 88%	83.9 - 86.5%	85.30%
<b>Clearances to Non Combustibles</b>					
Top	125mm   4 7/8"	125mm   4 7/8"	125mm   4 7/8"	125mm   4 7/8"	150mm   5 7/8"
Sides	100mm   4"	125mm   4 7/8"	125mm   4 7/8"	125mm   4 7/8"	125mm   4 7/8"
Rear	75mm   3"	80mm   3 1/7"	75mm   3"	75mm   3"	75mm   3"
Front	300mm   11 3/4"	300mm   11 3/4"	300mm   11 3/4"	300mm   11 3/4"	300mm   11 3/4"
<b>Clearances to Combustibles</b>					
Top	350mm   13 3/4"	350mm   13 3/4"	350mm   13 3/4"	350mm   13 3/4"	350mm   13 3/4"
Sides	350mm   13 3/4"	500mm   19 3/4"	750mm   29 1/2"	500mm   19 3/4"	600mm   23 5/8"
Rear	200mm   7 7/8"	500mm   19 3/4"	550mm   21 3/4"	500mm   19 3/4"	600mm   23 5/8"
Front	400mm   15 3/4"	400mm   15 3/4"	400mm   15 3/4"	400mm   15 3/4"	400mm   15 3/4"
<b>Minimum opening size (to non combustibles)</b>					
Height	855mm   33 15/8"	1084mm   42 1/2"	1003mm   39 1/8"	1171mm   46 7/64"	1270mm   50"
Width	780mm   30 3/4"	895mm   35 1/2"	828mm   32 1/2"	880mm   34 1/2"	1000mm   39 3/8"
<b>Flue connection</b>					
Flue Size	150mm   6"	150mm   6"	150mm   6"	150mm   6"	150mm   6"
CL Top Flue from rear	136mm   5 1/3"	145mm   5 3/4"	136mm   5 5/14"	143mm   5 10/17"	115mm   4 1/2"
CL Rear Flue from Base	N/A	744mm   29 1/2"	N/A	N/A	N/A
<b>Other Information</b>					
Weight	270kg   595lbs	600kg   1323lbs	550kg   1212lbs	600kg   1323lbs	800kg   1763lbs
Fuel Types	Multifuel	Multifuel	Multifuel	Multifuel	Multifuel
Tested to EU (on wood logs)	EN13240	EN13240   EN15250	EN13240   EN15250	EN13240   EN15250	EN13240   EN15250
Tested to USA / Canada			UL 1482-10 ULC 5627 Method 28A Exemption Test CSA/CAN/B415.1 WA & CO EPA Parallel		UL 1482-10 ULC 5627 Method 28A Exemption Test CSA/CAN/B415.1 WA & CO EPA Parallel
<b>Options Available</b>					
Hot Box	Yes	Yes	Yes	No	No
DHW	Yes	Yes	Yes	No	No
External Air	Yes	Yes	Yes	Yes	Yes
Extension	No	No	Yes	No	No
Heat Shield	No	No	Yes	No	Yes

# HEAT PLAN

If you are able to send a floor plan of your property to Ecco Stove®, our staff can draw up a free of charge, no obligation Heat Plan showing the temperature band room by room, with suggested fuel usage. Please see below an example Heat Plan (with actual temperatures) achieved by a 678 Ecco Stove® in a 17<sup>th</sup> Century Cotswold Stone house that is approximately 280m<sup>2</sup>.



# TESTIMONIALS

A small selection of the feedback we get from other Ecco Stove® owners.

*"I have been meaning to write to you for a while now - just to thank you so very much for all the help you have given, taking me through the steps necessary for a successful firing and answering my many questions with such patience! The service given by you, and your staff, has been impressive! Just as delighted, am I, with the efficiency of this little stove. In a relatively large house, it gets warm really quickly and it is quite surprising how much heat the stove gives out so soon after firing - and goes on giving it out some time after I've stopped putting logs on too. We have all been really enjoying it because it has made such a difference to the whole house."* Antoinette - UK

*"Our electricity bill for 2017 January was 24% less than 2016 January. Plus the hallway, staircase, and some parts of the upper floor was a lot warmer so we hardly needed to use our other heat source."* Aki Yoshimizu - Japan

*"We could have our old stove raging so hot that we couldn't sit near it but none of that heat ever got upstairs. Also our old stove would become cold very very quickly once it had gone out whereas the heat stayed in the Ecco Stove for a good few hours afterwards, clearly all the while cooling but when touched in the morning after being out for 7 hours the stove material would be a little over room temperature still, this HAS to be a huge help to kick out heat over night or when we've been out of an evening."* Stuart - Tuscany, Italy

*"With this alternative heating solution, we've made a huge reduction on our oil heating bill, as that is used for heating only for a one and a half hour boost at getting up and going to bedtime."* Adrian - UK

*"The performance of the Ecco Stove has exceeded all our expectations, as we have only used our oil boiler to heat the house when we haven't been at home, otherwise our house is now heated entirely by the wood burning stove. They came out and thoroughly surveyed our house and not only prepared both a works plan and quote but gave us an idea of how the stove we had chosen (an Ecco Stove 730) would perform and heat each room, which turned out to be accurate."* Mark - UK

*"Our house is a 1840's cottage, stone built and was notoriously difficult to heat. We installed the Ecco Stove in the place of an old cast iron stove. The old stove would excessively heat the room and leave all the surrounding rooms cold without having to put on the central heating. Now since the E580 has been installed we have a much more comfortable home and find that the central heating is hardly ever turned on. The heat travels around the whole house."* Paul - Ireland

# ECCO STOVE®

Natural Heating



## ECCO STOVE®

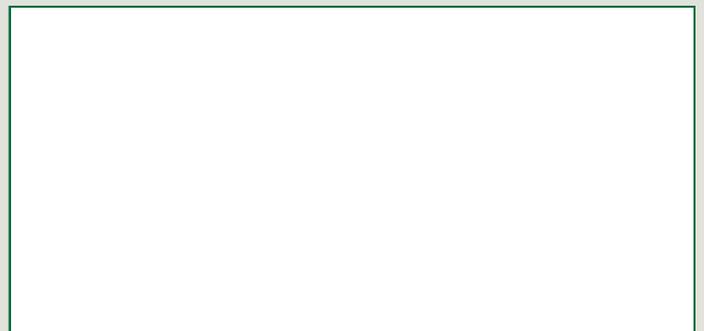
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Your local Ecco Stove® Specialist:



Specific technical information should be sought direct from the Ecco Stove® Specialist in your area.

We reserve the right to change dimensions and specifications in our products without notice. Contact us for new developments.