

New Heat Solutions

GEOTHERMAL HEATING SPECIALISTS



Gortnahoe,
Thurles,
Co. Tipperary.
Phone: 086 2265465
Fax: 0568834801
Email: info@nhs.ie

www.nhs.ie

04/12/16

Ken McCullagh.
Clonlea Lodge,
Ballinteer,
Dublin 16.

Quotation for underfloor heating - Supply and installation Ground Floor + First Floor.

Heat sources:

Air Source Heat Pump

Quantity	Details	
985m	17mm POEC Double Oxygen Barrier Piping	
2	Underfloor Manifolds	
11	Ports	
145m	Underfloor quick Track & Pipe Staples	
2	High Head Circulating Pumps	
3	Motorised valves	
1	2 Zone Zoescientific + Hot Water controller with remote access	
	Flow and Return pipework - from heat pump to underfloor manifolds only	
	Filling point & Expansion Tank	
	Fixtures and fittings	
	All Materials and Labour	5,328.38
Plus Vat @ % 13.5		719.33
Total €		6,047.71

- Quote is valid for 90 Days.
- The room stats are optional but not essential. The master controller would be controlling the complete house; this is normal and also the most efficient system.

Please note:

1. The Piping above is 17mm diameter double oxygen barrier piping.
2. The amount of piping required is based on 6" & 4" spacing.
3. Quote is based on drawings provided at the time of the quotation.
4. Quote does not include Insulation or the placing of insulation.

5. Recommended would be two layers totalling 150mm of minimum high-density insulation on base, Use Xtratherm or Kingspan, with 25mm edge/ perimeter insulation for the underfloor slab.
6. 50mm insulation is sufficient on the first floor slab.
7. On all floors the edge insulation is also required (25mm will suffice).
8. Total area to be clear of all materials prior to our arrival for the installation.
9. We recommend between 75 to 125mm of concrete screed to be used. Whatever depth you go for, it is vitally important that the depth remains constant across the complete floor area.
10. A number 10 aggregate is a superior final cement pour rather than standard readymix. It bonds around the pipe better and has better thermal characteristics.
11. All room stats (where supplied) will be digital.
12. See information on heating controls at www.zoescientific.com.
13. Locate the Datatherm controller as agreed at first fixing, we need to liase with the electrician at this time (this will be installed by your electrician for RECI purposes)
14. Controls include all time clocks etc for the underfloor **and** the hot water cylinder.
15. We would recommend at least a 300 litre hot water cylinder. Rapid recovery is preferable.(Not Included).We can supply if required.
16. Where stud work is to be nailed to the floor, we need to avoid these studs with the piping, to this effect, all walls to be marked out clearly in advance
17. All sewers, services and wastes to be fitted prior to insulation installation.

IMPORTANT

The above includes all of the controls, motorised valves and pumps, which will be required for the set up of the hot water & under floor circuits.

THIS should be borne in mind if comparing pricing. Give me a call to explain further. By pricing in this fashion we can take control of the "Primary heating circuit". This will ensure efficient operation of the heat pump, more importantly all controls are integrated and less confusion all around.

Terms of payment:

1. 75 % Payment on installation of underfloor piping, or appropriate zone / area.
2. 25% on completion of commissioning.

Any queries or clarification that you may need please contact us at 0862265465.

Regards,

Eric Norton

New Heat Solutions

GEOTHERMAL HEATING SPECIALISTS



04-12-16

Ken McCullagh.
Clonlea Lodge,
Ballinteer,
Dublin 16.

Gortnahoe,
Thurles,
Co. Tipperary.
Phone: 086 2265465
Fax: 056 8834801
Email: info@nhs.ie

Quotation for a Panasonic Air/Water heatpump installation

Air Source

Heat Source:

Panasonic Aquarea 5kw air to water Heat Pump

Model:

Air to Water heat pump.230v 50 Hz Single phase variable compressor.

Performance:

5kw at cop of 3.75 @ 2°C source air

5kw at cop of 5.08 @ 7°C source air

COP is based on EN-14511 which determines heat pump performance at 2°C source air and producing 35°C water on the load side.

Manufacturer:

Panasonic UK

Berkshire, England.

www.panasonic.co.uk

Panasonic heat pumps are fully CE certified as required by EN-14511.

All units are capable of delivering up to 60° Celcius, however we normally limit this to 50° C to ensure increased lifetime of compressor, but as ever the heat pump's efficiency is best at lower temperatures.

This quotation covers the complete installation of the heat pumps and mechanical components
The heat pump will be tested on commissioning and output readings taken for to complete the guarantee as per "Panasonic" requirements.

Quotation

Aquarea MDC05F.....5Kw Total

	Unit Price	Quantity	
Aquarea MDC05F	4,405.29	1	4,405.29
Sub total			4,405.29
Kilowatt rating is based on En 14511 ratings Plus Vat @ 13.5			594.71
as Per CE certification			Total
			5,000.00

- This quotation is valid for 90 days
- This quotation is dependant on a site survey prior to work commencing or else re-assurances from client on the ground conditions
- Deposit is non-refundable.
- Panasonic reserves the right to change prices. This is beyond our control.
Any changes will be notified in advance and in writing.
- Any work not completed within 12 months of the date of this quotation, will be subject to a price review
- Allow 3-6 weeks for delivery from Sweden after order has been received.

Please note:

2. The location of Heat pumps and associated services will be as agreed
3. Client to supply power to the unit or to junction box within 1 m of location.
4. A qualified RECI Electrician must be present during commissioning.
5. No responsibility will be undertaken for damage to underground services.
6. Below running costs are based on ESB rates using a day/night rate meter and on technical data supplied by Panasonic

For your information:

Based on an outside air temperature of 2 degrees C, and an output temperature of 35degrees C.

Average running costs per hour for an Aquarea MDC05F

Delivering 35 degrees C (High underfloor Temp. or low temperature radiators)

Day Rate	1.3 Kwh	@	18.61 Cent / hr	24 Cents
Night Rate	1.3 Kwh	@	9.22 Cent / hr	12 Cents

Terms of payment:

1. 10 % deposit of heat pump within 90 days of quotation date.
2. 50% of unit(s) at time of ordering, and 50% (less deposit) on delivery in Ireland
3. Commissioning: payment on completion of project, heat pump installed and running.

If you need any clarification or have any queries, please contact us at 086 2265465.

New Heat Solutions

GEOTHERMAL HEATING SPECIALISTS

www.nhs.ie



Gortnahoe,
Thurles,
Co. Tipperary.
Phone: 086 2265465
Fax: 0568834801
Email: info@nhs.ie

With regard to the quotation's for under floor and heat pump installation.

1. The system installed will be the primary source of space heating in the dwelling concerned with no need for additional backup of any kind.
2. The Kw output of the heat pump is based on the Insulation and air tightness levels being equal to the current building regulations.
3. In relation to hot water, our heat pump will heat the tank to 50 degrees Celsius. To comply with building regulation an immersion element will need to be fitted and timed to switch in for a short time (1/2-hour approx.) every day to bring the tank temperature to 65 degrees.
4. Included in the quote is a Datatherm system, which allows for greater control over your heating. Radiant floor heating can be very difficult to regulate with the standard room temperature thermostat. This is because of the large heat storage capacity that exists within the floor. Datatherm control systems were designed specifically with this in mind and allow the user very precise control of any under floor application.
5. Two layers totalling 125mm **minimum** high-density (Xtratherm or Kingspan) floor insulation is recommended and must cover the entire floor space with a 25mm edging to finished floor height on all room perimeters including internal walls.
6. It is important that sub floor levels do not vary more than 15mm across the whole floor space.
7. A base is required with a condensate soak away for the heat pump.
8. Conservatories by their nature are difficult to heat and control due to large amounts of glass ,large amounts of external wall area and often vaulted ceilings. We allocate a higher density of underfloor pipe work in these areas but special consideration must be taken regarding heat loss in these areas.
9. Electrical cable (6square min) with isolation switch plus a mains water supply will be required within one meter of pump location also Datatherm control cable should be installed at first fix stage which will be predetermined.
10. For remotely installed heat pumps we would require district flow and return piping to be installed between the building and the heat pump this prevents unwanted heat loss to the ground.(Not included in quotation please specify if remote location required)
11. On the day of final commissioning a certified electrician must be present.
12. An outlet is required for the heat pump supply and return pipes 4 inches in diameter each is adequate.
13. The location of the heat pump and its accessories will be pre determined and agreed upon with the customer.
14. If there are any queries please contact us at 0862265465.

Regards,

E. Norton.