



*Quote Reference: Friends Clump Ground Floor UFH System*

<b>Description</b>	<b>Cost</b>
<p><b>1<sup>st</sup> Fix Underfloor Heating System</b></p> <p>Supply and installation of ground floor underfloor heating system for the property. Supply of the edge strip insulation to go around the perimeter of each ground floor room (to be installed by the sceeding or insulation contractor). This allows the expansion and contraction of the screed once heated. Pipework will be 16mm pert-ali-pert stapled to the rigid Celotex insulation; laid at 200mm or 150mm centres where necessary. All ground floor underfloor heating will be linked into a single ground floor manifold. Manifold will have a low energy extra shunt pump, pump isolating valves, drain valve and an air release valve. Where necessary the floor area will be split to allow the installation of expansion edge strip insulation. Where underfloor heating pipes pass through this strip the pipe will be installed in a pipe conduit. This design allows the expansion and contraction of the screed, and allows movement over the underfloor heating pipes where the join meets.</p> <p>Installation of the 1<sup>st</sup> fix 230v electrical supplies to each thermostat location in the property. Each thermostat cable will be run back to the manifold controller on that floor level. Floor will be split into seven zones, one of which will be a wet room zone with probe in the bathroom.</p>	<p>Materials &amp; Installation: £1,437.00</p>
<p><b>2<sup>nd</sup> Fix Underfloor Heating System</b></p> <p>Pipework connections into the underfloor heating manifold. This includes the installation of a Wilo 15-50 circulating pump with full bore butterfly valves at the manifold inlets.</p>	<p>Materials &amp; Installation: £160.00</p>
<p><b>Final Fix Underfloor Heating System</b></p> <p>Final connection and commissioning/balancing of the underfloor heating manifold. Balancing of the underfloor heating loop flow rates at the manifold heads. Maintenance and drain valves provided at the manifold. Commissioning includes pump speed selection to ensure a balanced pressure against the 1<sup>st</sup> floor heating system. Filling of the heating primary system will be completed at this point with the addition of a Fernox system inhibitor.</p> <p>Supply and installation of thermic actuators on the return loop heads to control each zone on the underfloor heating. Supply and installation of a manifold controller at the manifold.</p> <p>Connection of the underfloor heating shunt pump to the manifold controller. Connection of each thermostat sensor cable to the manifold controller. Supply and installation of seven programmable room thermostats for each zone on the floor of the property. This includes hanging the thermostats, connection and commissioning of the set temperature ranges.</p>	<p>Materials &amp; Installation: £842.00</p>



<p>Electrical installation includes all the wiring centres required for the system, and starts from the fused spur outlets already installed by other electrical contractor.</p> <p>Commissioning records and manufacturers unit warranties handed over on job completion. All systems and units left in good working order.</p>	
<p><i>First Fix UFH £1,437.00</i> <i>Second Fix UFH £160.00</i> <i>Final Fix UFH £842.00</i></p> <p><b>Sum: £2,439.00</b></p> <p>+ VAT 0% Zero Rated : £0.00</p> <p><b><u>Total : £2,439.00</u></b></p>	

### *Additional Notes:*

Certain 1<sup>st</sup> fix electrical supplies must be provided by the main electrical contractor. These include an un-switched fused spur at the underfloor heating manifold.

Main plumbing contractor will install a 22mm flow and return pipe to the manifold, to be later connected onto by a Solo Heating Installations operative.

Standard 65mm – 75mm deep sand and cement screed is applied over underfloor heating tubing. If a reduced depth of screed is required, pumped liquid screed may be used down to a thickness of 50mm. Screeding performed by the client and is not included in this quote.

Client to supply and install a minimum 50mm rigid Celotex across the ground floor area of the property, ready for our underfloor heating installation.

Underfloor heating pipework will be charged and tested with air to a pressure of 90 psi, and will be left on pressure for the duration of the build until 2<sup>nd</sup> fix manifold connections are made.

Any additions or modifications to this specification on site *may* incur an extra charge.