

## Pond Mats

### Features and Benefits

- High energy absorption
- Ease and low cost of installation
- Compatible with the whole Kensa range of heat pumps
- UK manufactured



### Product Description

Any large [water source](#) situated close to the proposed building to be heated is an ideal energy source for a ground source heat pump.

Using water has a number of advantages as the heat transfer rate from water is higher than that in the ground, and the water is in close contact with all of the pipe at all times.

The use of a water source also removes the need to dig large trenches, reducing the cost of installation.

[Kensa pond mats](#) are specifically designed to ease installation while maximising the energy absorbed from the water.

Approximately 250m of pipe is secured to a corrosion resistant stainless steel frame. This frame can then be weighted down on site to enable them to sink to the bottom of the water source.

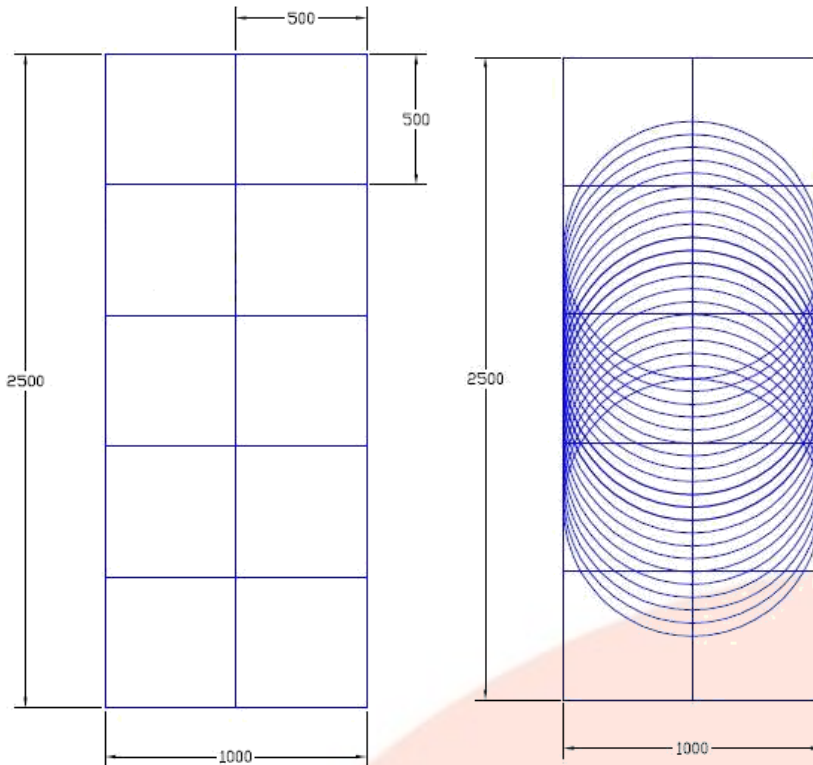
The ideal water source has a constant water flow into and out of it, which means the energy held within the water is continually replenished.

The benefits of using a closed loop system in water over an [open loop system](#) include a reduced risk of freezing within the heat pump and the reduced maintenance as there is no need for any filtration units.

Please note:-

- Any antifreeze used in water sourced arrays needs to be environmentally friendly and food quality.
- Silting of the lake can cause a reduction in performance in pond mats unless regular maintenance (i.e. removal and cleaning) takes place.

## Pond Mats



The height of the pond mat should not be higher than 1000mm.  
If extra header is required then extra pipe must be added to each pond mat in equal length to ensure a correct balancing of flows.

Each pond mat will extract approximately 4 to 5kW of energy from the water source.

**Frame:** Stainless Steel 304L or 316L round bar, TIG welded with self colour finish.

**Pipe :** 250m of 32mm OD HDPE.

To ensure the correct heat is extracted from the water source it is important that the pond mat is covered at all times with water and not covered with silt.

Heat Pump kW	Number of Pond mats						
	1	2	3	4	5	6	7
3	✓						
6		✓					
7		✓	✓				
9		✓	✓				
13		!	✓	✓			
15			✓	✓			
17			!	✓	✓		

The red boxes indicate that the pressure drop through the pond mat is above the available pressure produced by the heat pump internal water pump and this combination of pond mats should not be used with this heat pump. The table does not include any allowance for header pipe work or manifolds and the total pressure drop should be calculated before final confirmation. Orange boxes indicate that you should check the amount of headering used. The grey boxes indicate laminar flow within the pond mat and Kensa Heat Pumps should be consulted.