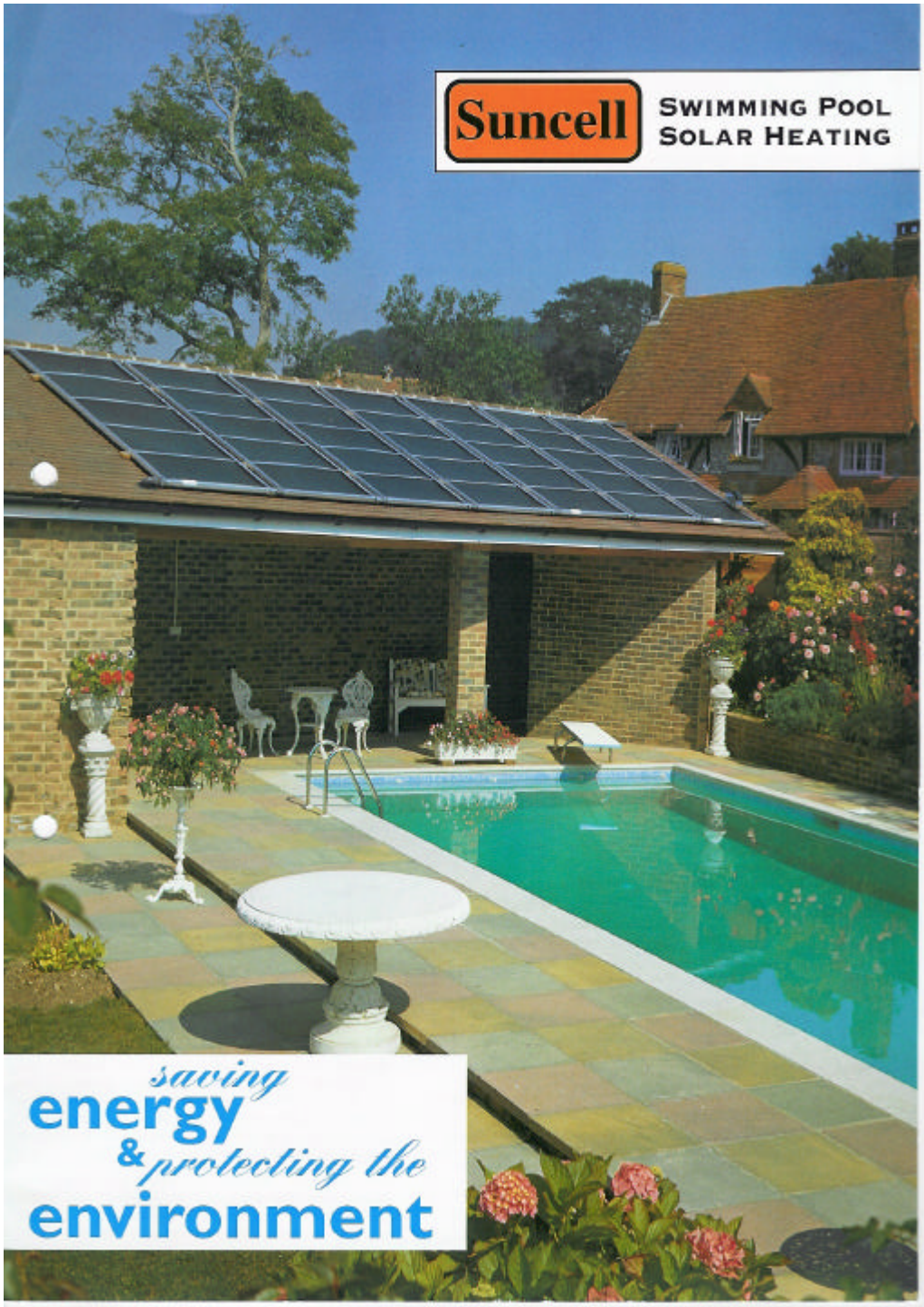


Suncell SWIMMING POOL SOLAR HEATING

Suncell solar panels are used to heat private pools as well as school, hotel and public swimming pools.

INSTALLATION DATA
Suncell panels should be fixed securely at 15° to 45° to the horizontal facing between S.E. and S.W. with a flow rate of 2 to 4 GPM (0.5 to 1 m^3/h) per panel.

ENVIRONMENTAL PROCESS SYSTEMS LIMITED
Unit 32, Mere View Industrial Estate, Yaxley, Cambridgeshire, PE7 3HS, United Kingdom
Tel: +44-(0)-1733 243400 Fax:+44-(0)-1733 243344 e-mail:info@epsltd.co.uk www.epsltd.co.uk

© 2001 Environmental Process Systems Ltd.
Printed in England

ENJOY A WARM POOL WITH SOLAR HEATING!

WHY SOLAR HEATING?

Solar heating is ideal for swimming pools and Suncell solar panels are designed for this specific application.

A pool can be expensive to heat but without heating a pool is a wasted investment. Heating by solar is an economic and effective solution. Unlike any other means of pool heating, with solar the energy source is free — and friendly to the environment.

Enjoy comfortable swimming temperatures during an extended season with a Suncell solar heating system — now proven in use over two decades by pool owners throughout the UK and overseas.

IS THERE SUFFICIENT SUNSHINE?

Solar panels can collect heat on bright overcast days — not just on the sunny days when their performance is of course at its best. During the average UK summer Suncell solar panels can typically heat a pool from the middle of May until late September.

Pools without any heating only rarely exceed 70°F (21°C) with temperatures typically in the chilly 60's °F. With solar heating, temperatures can generally be achieved in the mid to high 70's °F (23 to 26°C) with temperatures sometimes well into the 80's.

Many people are perfectly satisfied with these temperatures. If higher temperatures are required, any conventional heating system may be used in conjunction with solar to give a small extra boost. Indoor pools, in use all year round, will in any case require such a back-up heating system as there is not enough sunshine during the winter.

HOW DOES IT WORK?

The pool water is circulated through the panels which absorb heat from the sun's rays to warm the water. The solar panels can be installed in a sunny position, that is unshaded and facing roughly due South.

The panels should be inclined to catch the most sun and they can be fixed either at ground level or on a convenient roof. They are connected by pipework to the pool filtration circuit so that water can be pumped through the panels on its way back to the pool.

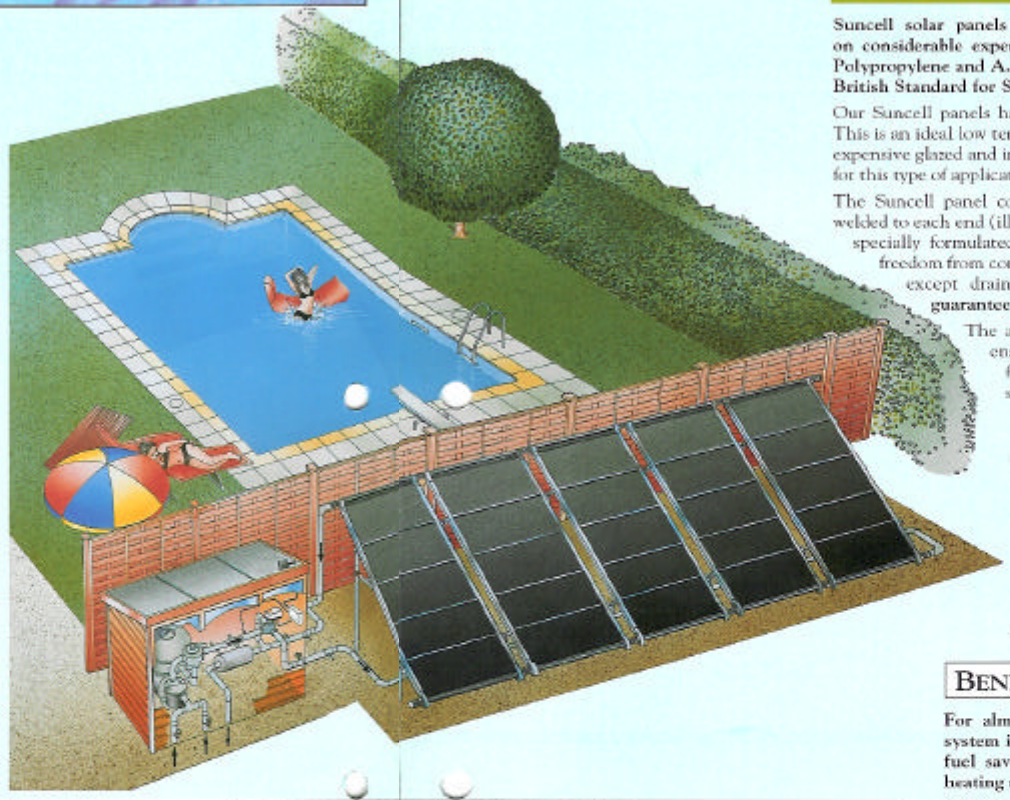
A simple control ensures that the water is only diverted via the panels when weather conditions offer a worthwhile heat gain.

HOW MANY PANELS?

A good deal of energy is needed to heat a pool, so a relatively large area of solar panels is required. This applies whatever solar panels are used, including those more expensive types intended principally for heating hot water rather than for pools.

For swimming pools the area of solar panels should generally equate to 50% of the pool surface area — more if the pool is in an especially exposed spot. Even in countries warmer than the UK a similar panel area is required. (The solar heating will be called upon to work correspondingly earlier and later in the year).

A floating pool cover is recommended to insulate the surface of any pool when not in use. For open air pools translucent bubble covers are ideal. We make pool rollers for easy handling of covers.



DESCRIPTION OF A TYPICAL SYSTEM

The illustration shows a typical system for a private pool – in this case the panels are mounted at ground level on Suncell tubular support frames.

The solar panels are linked into the filtration circuit, making use of the existing filter pump. Filtered water passes through the solar panels which are connected in ahead of any auxiliary heater. By this means free solar energy is used first, with more expensive back-up heating cutting in only when a further boost is needed.

Whether or not you have an auxiliary boiler or heat exchanger (as illustrated), the solar heating needs its own control system. This ensures that pool water passes through the solar panels whenever solar heat is available to be collected. Equally it prevents circulation through the panels during unfavourable weather when heat could be lost.

This control is achieved by installing a motorised (3-way) diverter valve in the filtration circuit, activated by a Suncell DTC electronic control unit. The DTC is equipped with two accurate temperature sensors which constantly monitor the pool and panel temperatures to signal to the valve when it is worthwhile directing pool water to the Suncell panels. Filtration continues even if there is no heat gain as the motorised valve will then divert the water to bypass the solar panels.

The water circulates through the Suncell panels from bottom to top, entering at one end of a bank of panels and exiting at the opposite top end. Up to 8 panels can be installed in a single bank with flexible hose connectors joining the individual panels and the pipework at each end. End Caps seal off the unused connectors. Ordinary swimming pool pipework with valves for winter isolation completes the installation. No insulation is necessary due to the system operating at close to ambient temperature.

For small and medium size pools the existing filtration pump will almost always cope easily with the addition of solar panels. For larger school, hotel or public pools (e.g. more than 16 panels) we can offer recommendations for an additional solar-circuit pump in place of the motorised valve.

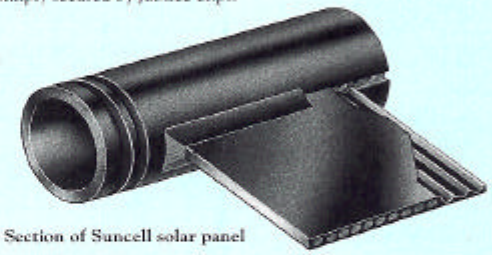
Suncell Solar Panels

Suncell solar panels have been manufactured since 1976, so we can draw on considerable experience in this field. (We are also leading manufactures of Polypropylene and A.B.S. pipework). Our solar systems conform to BS 6785 the British Standard for Solar Heating Systems for Swimming Pools.

Our Suncell panels have been developed specifically for swimming pool heating. This is an ideal low temperature solar application which does not necessitate a more expensive glazed and insulated style of solar panel. Suncell panels are highly efficient for this type of application, operating on a high flow rate principle.

The Suncell panel comprises a polypropylene collector plate with header pipes welded to each end (illustrated below) mounted in an aluminium frame. The use of a specially formulated grade of polypropylene ensures a long life and complete freedom from corrosion by pool water — even from sea water. No maintenance except draining for winter frost protection is required. **A five year guarantee is offered** subject to published conditions.

The aluminium frame which surrounds the polypropylene matrix enables easy attachment of the panel to a sloping roof or support frame. The header pipes are linked using hose connectors simply secured by jubilee clips.



Section of Suncell solar panel

BENEFITS OF SOLAR HEATING

For almost any pool, private or public, a Suncell solar heating system is a sound investment. The capital cost is recovered against fuel savings, making for a highly cost effective solution to pool heating needs.

Naturally solar heating is environmentally friendly, playing its part in the conservation of valuable fossil fuel resources and thus also sparing the emission of 'greenhouse gases'. In this respect it leaves all other forms of heating — including heat pumps — standing. Solar is silent and pollution free.

Swimming pool heating is the one solar application widely accepted as worthwhile. The summertime pool heating requirement is perfectly in phase with the months of maximum sunshine availability.

Suncell solar heating is generally straight-forward to install and does not interfere with the operation of other pool equipment such as filters, pumps, heaters or chemical dosing units. It is reliable and efficient.

Technical data on Suncell solar panels

Panel Type	*Model No.*	*Dimensions*	*Area*	*Weight empty*	*Weight full*
Suncell	020	1.20m wide x 2m (4ft wide x 6ft 6in)	2.4m² (26sq ft.)	11kg	22kg
Suncell	030	1.20m wide x 3m (4ft wide x 10ft)	3.6m² (39sq ft.)	15kg	29kg