

SOLAR COLLECTOR DESIGN OPTIONS AVAILABLE IN POOLHEAT

Standard glazed flat plat solar water heating collector

Glazed with black absorber

Glazed with copper oxide selective surface absorber

Plastic tubes with fins between the parallel tubes mounted on

Insulated backing 100% coverage

Tiles 50% coverage

Metal ridged roof 50% coverage

Flat black metal 50% coverage

Flat white metal 50% coverage

Semi Glazed

Plastic tubes without fins between the tubes

Insulated backing 38% coverage

Insulated backing 80% coverage

Tiles 38% coverage

Tiles 80% coverage

Metal ridged roof 38% coverage

Metal ridged roof 80% coverage

Flat black metal 38% coverage

Flat black metal 80% coverage

Flat white metal 80% coverage

Semi glazed 38% coverage

Semi glazed 80% coverage

Plastic pipe spiral

Insulated backing 100% coverage

Tiles 50% coverage

Flat black metal 50% coverage

Flat white metal 50% coverage

Flooded absorber plastic panel

Insulated backing 100% coverage

Semi glazed

Wide plastic panel with tubes and fins

Insulated backing 100% coverage

Semi glazed

Copper pipes bonded to metal decking

2 tubes per pan

1 tube per pan

Semi glazed - 2 tubes per pan

Semi glazed - 1 tubes per pan

Evacuated tubes

User specified flat plate solar collector efficiency

Efficiency coefficients (A,B & C) determined using standards ISO9803.1 and ISO9806.3

$$Efficiency = A - (B + C * U) \frac{T_i - T_a}{G_n}$$

where

U = wind speed

T_i = inlet temperature

T_a = ambient temperature

G_n = nett irradiation (long and short wavelengths)

User specified evacuated tube solar collector efficiency

Efficiency coefficients (A,B & C) determined using standard ISO9806.1

$$Efficiency = A - B \frac{T_m - T_a}{G} - C \frac{(T_m - T_a)^2}{G}$$

and incidence angle modifiers.

where

U = wind speed

T_m = mean water temperature

T_a = ambient temperature

G = solar irradiation