

Comparison between Evacuated Tube Collector & Flat Plate Collector:-

Sr.No	Evacuated Tube Collector	Flat Plate Collector
1	Quick heat generation	Slow heat generation
2	Collector efficiency on higher temperature is high	Collector efficiency on higher temperature is low.
3	Heat loss in the tubes during the daytime is negligible (evacuated tubes)	Heat loss in the collector & tank during the day-time is high due to convection.
4	Convection and Convecting losses is low.	Convection and Convecting losses is high.
5	Emissivity is low.	Emissivity is high.
6	Satisfactory performance even in extreme cold condition (-18 deg. C)	Freezing of water will take place at high altitude causing damage to the collector.
7	Temperature range from 60deg. to 120 deg.	Temperature range from 60 deg. to 80 deg.
8	System hot water tank only is insulated using polyurethane insulation material which does not absorb water or moisture	Collector & tank insulated with glasswool/ rockwool, absorbs moisture & gets wet during monsoons reducing the efficiency of the system
9	Negligible scaling of tubes which can be cleaned manually (inner tube dia. Is 37mm). Loss of efficiency consequently is minimal	Heavy scaling of the copper/aluminum tubes which cannot be cleaned manually as the bore dia. is 12.50 mm. giving rise to substantial loss in efficiency of the system.
10	The collector glass tube absorbers being cylindrical the incident sun's rays on the tubes is at 90 degrees throughout the day. Hence peak heat absorption always.	The collector fins & tubes being flat the incident sun's rays will be at 90 degrees at noon only for peak absorption
11	In locations with average availability of solar energy over-sizing of the system glass tube collectors is not required.	Higher system sizing is required to get the desired result. Hence added cost.
12	Heat exchanger not required	Heat exchanger required
13	Advanced technology at competitive prices that is	Old technology at higher prices

	System Cost per unit water is low.	
14	Hot water availability for 350 days in a year.	Hot water availability for 300 days in a year claimed.
16	It is very easy to replace glass tube.	Difficult and expensive to replace glass sheet
17	Water quality is not effect the system.	Water quality effect the heating system forming scale over metal tube.
18	It has low maintenance	Its required high maintenance.