

# The Advantages of Evacuated Tube Solar Collectors

Residential and  
Commercial Solar  
Energy Systems

People used to go out and buy long lengths of black plastic hose to make their own homemade solar pool heater. Then pre-manufactured black rubberized mats were developed as roof-mounted solar pool heaters. Although still sold as a cost-effective solution, black rubberized mat systems (i.e. unglazed systems) are no longer the best long-term investment as solar pool heaters.

Evacuated tube solar collectors provide much higher thermal efficiency and operating durability, especially for the extreme summer temperatures in Ontario.

## Premature Shingle Damage

Evacuated tube solar collectors tubes are mounted in aluminum frames that allow the roof shingles to breathe. As rubberized solar mats lie directly on the roof without proper air circulation, moisture can sit underneath the mat and over time cause premature deterioration of the shingles. Any initial solar cost savings are then compromised by an early and expensive replacement of the roof, and reinstallation of the entire solar mat system.

## Much Less Roof Space Needed

High efficiency evacuated tube solar collectors will generate over 2,500 Btu/hr of energy per square meter per day. The equivalent energy from a mat pool solar heater would need up to 90 square meters (or a 48 x 20 feet) of roof space. Backyard pools usually only need two to three evacuated tube solar collectors, so the total roof space needed is about ¼ the size of a rubber mat system. That's not only more visually appealing, it allows mounting flexibility in choosing the best roof space for maximum sun exposure.

## Solar Mat Deterioration

Like any soft rubber or plastic, black mat solar pool

heaters deteriorate in prolonged sunlight. While manufacturer's claim life expectancies of 10 years, most of our solar pool customers tell us that cracking and leaking reduce the average life span of solar mat collectors to usually 5 years or less. Our evacuated tube solar collectors carry a 15 product warranty and have a low maintenance lifespan of 20-25 years.

## Wind Loss

Because black mat solar pool heaters require so much roof space, and the roof is generally windier than the ground, the wind significantly decreases their thermal efficiency and heating performance. Our solar pool heaters have zero wind loss and are much more efficient at heating your pool even on windy cloudy days. So you get more consistent water temperatures, and an extended season to enjoy your pool. We recommend regularly using a pool cover to minimize evaporation and heat loss from a windy pool location.

## Thermal Heat Loss

Black plastic absorbs solar energy very well. However, it also releases a large amount of heat back into the air at the same time. Evacuated solar tubes collectors absorb up to 92% of solar UV rays, yet they release less than 6% of their heat. Even on a hot summer day, an evacuated tube collector will not feel hot, though the internal tubes may be generating 300°F.

## Return on Investment

With no moving parts to wear out or replace and no deterioration from prolonged sun exposure, evacuated tube solar collector systems have a payback nearly 10 times that of plastic mats. With better thermal performance, decades of durability, and virtually no maintenance, the ROI of an evacuated tube solar system is far higher and more dependable.



**Your Best Clean Energy Investment.**

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