

Heating indoor Swimming Pool Using Solar Energy with Evacuated Collectors

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Abstract

Solar energy is often used to heat swimming pools so that conditions of comfort can be obtained. The water temperature in swimming pools can be regulated using solar water heating systems, extending the swimming pool season and saving on the conventional energy costs. Solar water heating systems need very little maintenance. This paper presents the work on evaluating the thermal performance and life cycle energy cost of using solar energy for indoor swimming pool in west Amman-Jordan. A swimming pool of 50 m³ was considered in this work. 150 evacuated tubes, 47*1500 mm each, were used to achieve comfort conditions. It was found that thermal comfort is achieved using solar energy over 9 months. To reach comfort temperature in December till February Diesel or electric heater can be used in addition to solar energy system.