

To Blanket or Not to Blanket your indoor pool?

Blanketing the surface of an indoor pool arrests evaporation; almost totally except for the small strip around the edge. It is the combination of the heat loss from surface evaporation, the cost (thermal) of moisture removal and the electrical costs of air-handling which make up the majority of the utility costs. When uncovered, these 3 together will dwarf the smaller wall, ceiling, floor and glazing 'skin' losses typical of all heated buildings. The skin losses are unaffected by blanketing.

At today's preferred pool water temperatures of 85°F (29.4°C), a 16' x 32' pool surface (no hot tub) will evaporate* approximately 30 pounds of water per hour or 720 pounds per day. (72 gal/day) This process alone costs approx \$3000/year when a 90% natural gas boiler is used to supply this heat. On top of this one must add the cost to remove the evaporated moisture from the air to keep it from reaching an excessive level. Even with heat recovery, this will add \$1000 to 1500/yr. When the pool is covered for 23 hr/day, the evaporative cost alone can easily drop to approximately \$500/year as evaporation is limited to the 1 hour swim time after which wet decks and water trapped on top of the blanket are allowed to dry.

Blanketing will also reduce the moisture 'stress' on the building's exterior walls and ceiling. When uncovered and in use, the relative humidity (RH) of the indoor pool room air typically rises to 55 – 60%. This is normal and desirable. Over-drying to lower the RH will chill wet pool room users, cause run-away surface evaporation and increase the utility bill substantially. If the RH is allowed to rise above 60%, the moisture stress may exceed the level which even the best built building can withstand. Excessive window condensation is the obvious immediate result. During covered hours, the pool room enjoys a 'rest' as relative humidity and hence moisture stress drops**. Any imperfections in the exterior wall's or ceiling's air barrier which may have allowed moist air to pass outward are given a reprieve by flowing dry not wet air. This 'rest' period will reduce and in most cases totally prevent any moisture accumulation and the resulting serious structural damage which too often results. Yes, we do acknowledge that if the pool room enclosure is built tight and if the ventilation is set up correctly to maintain a small negative pressure, these 2 requirements in combination will allow a building to safely withstand the 60% RH stress indefinitely.

While commercial pools are normally left permanently uncovered due to long hours of use and the labour cost of routine blanketing, today more than ever residential pools today are blanketed. There, by comparison, the hours of use per day are relatively short and the utility bills are typically paid for with after tax income.

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* Chemical 'liquid' blankets ('Heatsavr' by Flexible Solutions Ltd. for example) are available. Some claim up to 40% saving on evaporation. We recommend them if a pool must remain uncovered.

** Controls are available to step-down heating and ventilation as the building dries.