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Does Insulation Make A Big Difference?

Example:

In my garden, I have a 24-ft x 12-ft x 4-ft deep, 6400-gallon oval above ground pool; this was installed in the place of a rather tired 15-ft diameter 4-ft deep 4000-gallon pool. An under ground power cable was originally installed, with only enough capacity to supply a 6-kW heater. To up grade the cable would have meant digging up a patio, and tunnelling under a wall. I thought a 6-kW heater would not be sufficient, but in an attempt to rescue the situation, without upgrading the cable, I lined the pool floor and walls with 20-mm thick expanded polystyrene sheet (the heavy duty version that will support 10.2 tonnes per square metre).

This pool has been in use now for three years it is heated to a constant 28˚C from mid April to mid September. During good sunny weather the heater switches off for days on end, if the solar cover is not stripped off on a daily basis the temperature can raise dramatically.

The running costs of this pool are significantly less than its smaller non-insulated predecessor, with the heat up time remaining approximately the same.

The conclusion is simple; to insulate a pool pays dividend upon dividend:

And will repay the purchase cost of the insulation materials usually within the first season. Allow me to go further and liken it to heating a room in your home in mid winter, leaving the doors and windows open-the house will never reach temperature. Close the doors and windows on your pool “Insulate it”. Keep that valuable heat where you want it, don’t heat the neighbourhood.

Fact: It can be proven on paper that an Olympic size pool can be heated to boiling point with a candle (if there was no heat bleed to be written into the equation).
It would however take slightly over 70 years to do so! And require a 40 tonne candle.