

**INTERPRETATION IC 90.1-1989-12 OF
ASHRAE/IES STANDARD 90.1-1989
ENERGY EFFICIENT DESIGN OF NEW BUILDINGS
EXCEPT LOW-RISE RESIDENTIAL BUILDINGS**

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Request from: Laurie E. Reid, P. Eng., Commercial Programs Department, Ontario Hydro, 777 Bay Street, 26th Floor, Toronto, Ontario, Canada M5G 2C8.

References: This request refers to ASHRAE/IES Standard 90.1-1989, section 11.4.6.2 Heated Pools.

Background: Section 11.4.6.2 requires pool covers for heated swimming pools, except where over 70% of the energy for heating the pool over a typical annual operating season is recovered from site-recovered or site-solar energy.

Question: Since even manufacturers of dehumidification/heat recovery units claim only 50% to 60% recovery, do such heat recovery units have to be combined with solar heating to fall under the exception?

Answer: The 70% figure in the exception refers to the total annual energy required to heat the pool. Heat may be recovered from any site source (e.g., air-conditioning system condenser heat, boiler stack heat recovery), not just from natatorium dehumidification/heat recovery units. However, it should be noted that most dehumidification/heat recovery system designs will comply with the exception without the need for site-solar or additional site-recovered heating systems since they should be able to recover 100% of the pool heating energy, with some left over (depending on how much outside ventilation air is introduced and under what outside air conditions) due to compressor heat and possibly space cooling loads. The 50% to 60% figures in the question above may refer to another energy component other than pool heating requirements, or they may be based on a design that uses large amounts of outside air which prevents the recovery of pool latent heat. (Since a pool cover is not practical for many large indoor pools, dehumidification/heat recovery systems meeting the performance requirements of the exception are generally the best option for meeting the standard.