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Position Statement #2

Energy and Resource Efficiency for Pools, Spas, and Water Features

Introduction

GENESIS provides an international forum for continuing education and the establishment of higher standards in watershape design, engineering, and construction. In pursuit of this goal, GENESIS hereby publishes this Position Statement regarding energy and resource efficiency.

This Position Statement was assembled with input from leading professionals in the pool and spa industry, including individuals that are not members of GENESIS. The contributors share a common goal of improving safety, reducing energy consumption, raising the current standards, and building better quality projects. The positions are not biased toward specific manufacturers or products.

This document is not a consensus standard or building code. It has not gone through the consensus procedures of any recognized standards writing authority. GENESIS has no interest in pursuing the consensus process that would only dilute these positions with inferior concepts based on specific products, technology, maintaining backwards-compatibility, or other conflicts of interest. Use of this document is completely voluntary.

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Format

There are two columns. The first column clearly and concisely states our position. The second column provides commentary and justification for the corresponding position statement.

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Position Statement	Commentary
2.1 Line Velocities	
<p>2.1.1 The velocity limit in pool recirculation systems is 6 feet-per-second by code. We recommend that the maximum design velocity on the suction side of the pump be limited to 5 feet-per-second.</p>	<p>See Position Statement #1 for additional commentary regarding velocity limits and configuration at suction outlets.</p> <p>Energy efficiency is greatly enhanced by limiting the velocity.</p>
<p>2.1.2 The maximum velocity on the discharge side of any pump shall be 6 feet-per-second maximum. We recommend that the maximum design velocity on the discharge side of any pump be limited to 5 feet-per-second.</p>	<p>Energy efficiency is greatly enhanced by limiting the velocity.</p> <p>Furthermore, noise is reduced and plumbing systems last longer when they are not stressed by high pressures and high headloss. This results in extended equipment life which conserves resources.</p>
2.2 Spa Jet Systems	
<p>2.2.1 We recommend that spa jet systems are configured with dedicated jet pumps.</p>	<p>A filtration system that includes venturi jets is wasteful when the jets are not utilized. Also, typically, jet systems do not require filtration. Since filtration and jets are usually two separate functions, they should each have their own dedicated pumps.</p>
<p>2.2.2 Combined jet/filtration systems where a two- or multi-speed pump is employed must have filters and lines sized for the highest possible flow rate from the pump.</p>	<p>Filtration pumps are often much lower horsepower than those required to operate jets. Therefore, a filtration pump must be oversized if also used as a jet pump. Using a combined system results in wasted energy by operating a pump that is larger than required for filtration since the jet function is only utilized a minimal amount of time.</p>
2.3 ENERGY STAR	
<p>2.3.1 ENERGY STAR listed equipment is preferred over non-ENERGY STAR listed equipment.</p>	
<p>2.3.2 Residential pumps shall be selected on the basis of ANSI/APSP-15a.</p>	
<p>2.3.3 All pumps used by builders in pools shall be tested and selected in accordance with federal Department of Energy regs and meet the minimum requirements for Weighted Efficiency Factor (WFE).</p>	



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2.4 Control System

2.4.1 All pumps and lighting equipment shall be connected to timeclocks or controllers that enable scheduling of the equipment and adjustment of variable frequency drives for pumps if used.

2.5 Alternative Heat Sources

2.5.1 All pool or spa filtration systems shall include provisions for the connection of alternative heat sources. This shall include 18-inches of pipe before any heater for the rough-in of supply and return lines for the future connection of solar, radiant, or geothermal heating.

2.5.2 Spas heated by electric-resistance heating units shall have thermal covers.