

The Role of Electrical Bonding and Grounding in Pool Safety

Electrical bonding and grounding are among the important safety features provided by pool installation professionals to ensure your family's safety. Pool safety is achieved in a variety of ways. We usually think of physical elements such as non-skid pool decks, pool covers, and fences when we think about pool safety. Another pool feature that is not noticeable but is critical to your family's safety is bonding and grounding of the pool's electrical system.

Like your home, pool environments rely on electricity to power important equipment. Pool pumps, lights, most heaters and other pool equipment are powered by electricity. The pump that moves pool water and keeps it clean could not operate without electricity. Pool lights would not illuminate the water in the evening. Electric powered pool heaters would not maintain the water at a comfortable temperature. The same goes for other pool equipment. When electricity is properly connected, your pool is up and running! But if it is not properly connected, small amounts of electricity may be felt by pool occupants and their safety may be compromised. A properly connected pool electrical system is an important but largely unknown element of pool safety.

Bonding and grounding the pool's electrical system, a largely misunderstood concept of pool safety. We can look at the difference between bonding and grounding and explore how they work together to ensure your electrical safety poolside.

What is bonding?

Bonding is the process by which the electrical and metallic components of the pool are joined together with a wire to form a non-resistive path between the components. The goal of bonding is to connect, contain and prevent the transmission of any harmful electrical voltage to pool equipment, people and pets.

Bonding connects the pool's electrical and non-electrical metal components into a network that contains the electricity. The low impedance path back to the power source allows the harmful current to flow and trip the breaker at the panel.

Without a bonding system in place, you might conduct stray electrical current when touching the metal pool rail or pool water.

What is grounding?

Grounding is the process by which the bonded pool components are connected to the earth. The goal of grounding is to direct and dissipate any harmful electrical current to the ground and away from pool equipment, people and pets.

Grounding connects the pool's electrical network to the electrical panel and then to the earth to direct and dissipate excess electricity. Without a grounding system in place, people or pool equipment may become the conductor. Harmful electrical current may move toward people, pets, or equipment instead of moving away and to the earth.

How do bonding and grounding work together in a pool?

Bonding and grounding work together to provide an important element of pool safety. Electrical components, such as pumps, and non-current-carrying metallic components, such as pool rails, are electrically interconnected (bonded) and grounded to the earth so that electrical potential cannot exist between them. Together, proper bonding and grounding ensure the electrical safety of your pool.