



Swimming pools and spas: electrical bonding

Don't compromise on electrical safety. Always use a licensed electrical contractor when installing your swimming pool or spa to avoid the risk of electric shock.

The risk

Most pools and spas are fitted with water circulating pumps and cleaning equipment powered by electric motors. Faults can occur in these motors or in the motor's electrical wiring. This can expose bathers to the risk of electric shock. Signs of electric shock include a tingling sensation, muscle spasms or feeling 'stuck' or unable to move (paralysis), potentially leading to drowning. An electric shock may also affect the heart and cause death (electrocution).

Bonding to earth

To avoid the risk of electric shock, all metal items within arm's reach of a bather (1.25 metres from the pool edge) must be **electrically bonded** to the main earthing system of the premises. Metal items include fencing, light fittings, hand-rails, ladders, diving board structures and gates. The steel reinforcing of concrete pools and spas must also be electrically bonded to the earthing system.

Electrical bonding **must** be carried out by a licensed electrical contractor. It is important you consult a licensed electrical contractor when the construction of a pool or spa is being considered. The electrical contractor will ideally be involved at the planning and design stage – insist that your pool or spa supplier makes this happen.

The diagram on the following page shows the typical features of an outdoor pool arrangement that require bonding to the electrical earthing system.

Electrical bonding associated with a pool or spa must comply with Clause 5.6.2.6 of Australian Standard AS/NZS 3000:2018 (known as the 'Wiring Rules'). The electrical contractor will be responsible to ensure this compliance.

Your licensed electrical contractor will discuss:

- the power requirements to ensure safe operation of your pool or spa;
- if existing electrical equipment at your home needs to be relocated to fulfil safety requirements; and
- any other associated electrical requirements, such as outdoor lighting.

Pool construction timing

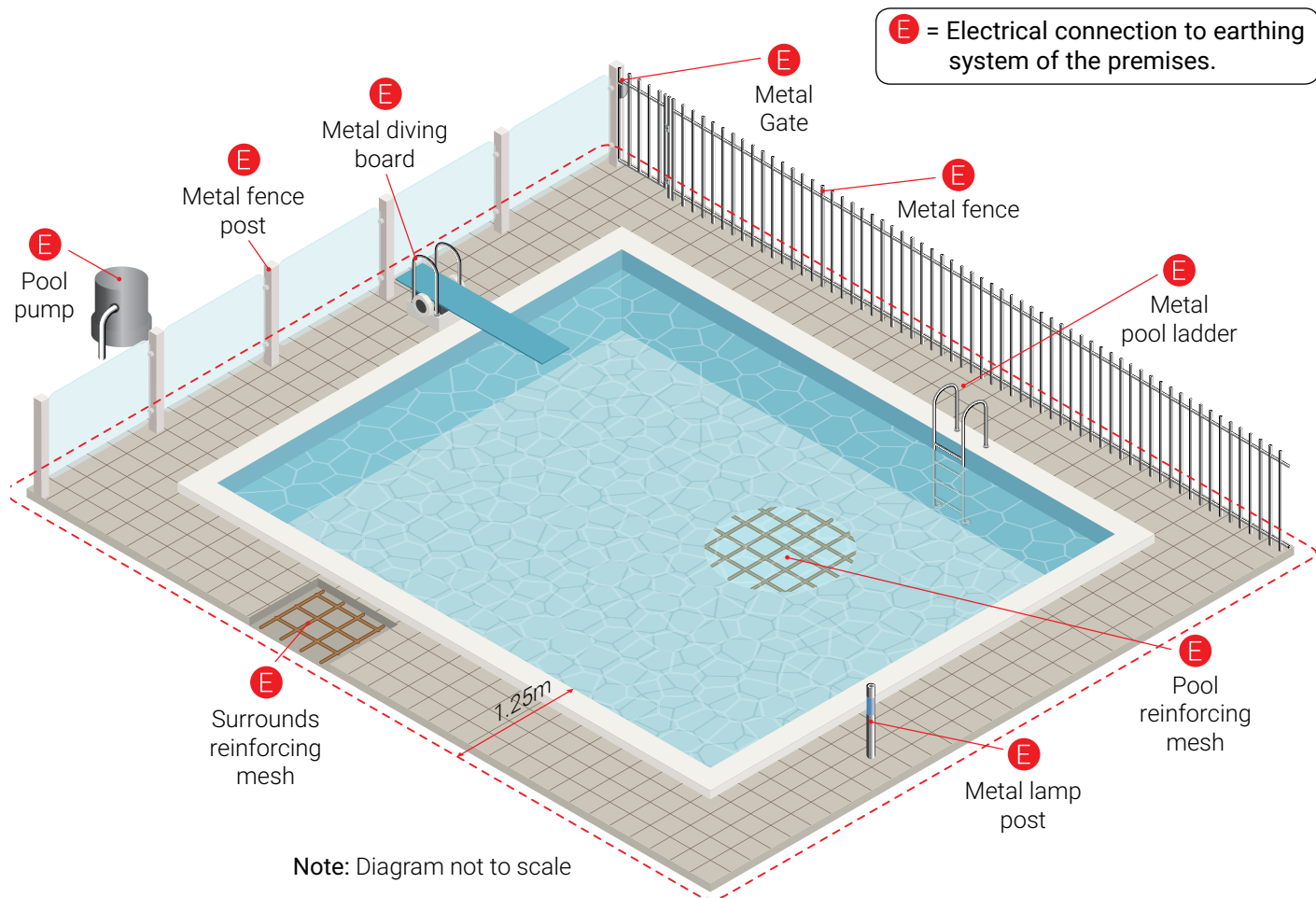
Three situations may occur, depending on pool construction timing:

1. **A pool or spa is included from the beginning for a new home or residential units.**

In this case, an electrical contractor will be involved at the start of the electrical installation, which will include the bonding requirements for the pool and/or spa.

2. **A pool or spa is planned to be installed at a future time for new premises.**

In this case, plan early in the electrical installation to allow the bonding required when the pool or spa project proceeds. An electrical contractor must be hired to complete the bonding work as part of the pool/spa construction. The electrical contractor should be included from the beginning to make sure the construction work does not compromise the essential bonding installation. Calling in the electrical contractor at the end will risk the pool/spa installation not complying with the Wiring Rules resulting in costly retrospective alterations.



3. The property owners decide to install a pool or spa at an existing premises where no particular provision was made to accommodate this.

It is important to involve an electrical contractor from the beginning of the work to plan and complete the bonding required. The electrical contractor will need to examine the home's electrical installation, main switchboard and, where applicable, the steel reinforcing arrangement in the concrete slab floor and determine how best to provide the bonding.

Remember: electricity and water do not mix! Use a licensed electrical contractor to ensure your pool is safe.

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