Pool Drainage
Design Considerations



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Indoor Pool
Tea Staining and Air Quality

All pools will outgas the chlorine in the form of trichloramines. This is a corrosive gas (think chlorine gas) that is heavier than air and will sit on and around the pool. This is of particular concern for indoor pools.

This gas is a health hazard. There are specific minimum ventilation requirements covered in AS 1668 part two.
As well as being a regulated health hazard, the gas is corrosive to a variety of metals and will cause tea staining on stainless steels.



Artistic demonstration of the layer of corrosive trichloramine gas

This pool, being an indoor pool, will require 24x7 mechanical ventilation to not only prevent health hazards, but also to reduce tea staining of any and all stainless grates and other stainless items such as hand rails, and also to comply with Australian Standards.
Grates should be electropolished to improve their resistance to tea staining, and this is the standard recommendation for any pool installation using Stormtech stainless grates.

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Earthing of Drains
Around Pools and Spas

Earthing of drains around pools and spas is an important safety consideration, and is covered in AS3000-2018.

The primary reason for earthing & bonding is due to lightning (for outdoor) and electrical faults (for indoor). It is Stormtech policy that grates/channels etc. ordered for pools must have an allowance for earthing/bonding. Arrangement for earthing is done by a licensed electrician.

Any Stormtech grates installed within 3.5m (within Zones 0, 1 & 2) of a pool must be connected together with a stainless or other non-reactive conductive wire or linking tab. This is called 'equipotential bonding'.

Stormtech grates only, or grates in uPVC channels, must be connected by a stainless wire/linking tab or other non-reactive conductive wire. All grates need to be joined together.

For Stormtech grates installed into stainless steel channel - only the channels must be connected together.

The complete joined (bonded) system then needs to be earthed. The earth connection needs to be completed by a licensed electrician.

Below is an extract of an example of bonding from AS3000:

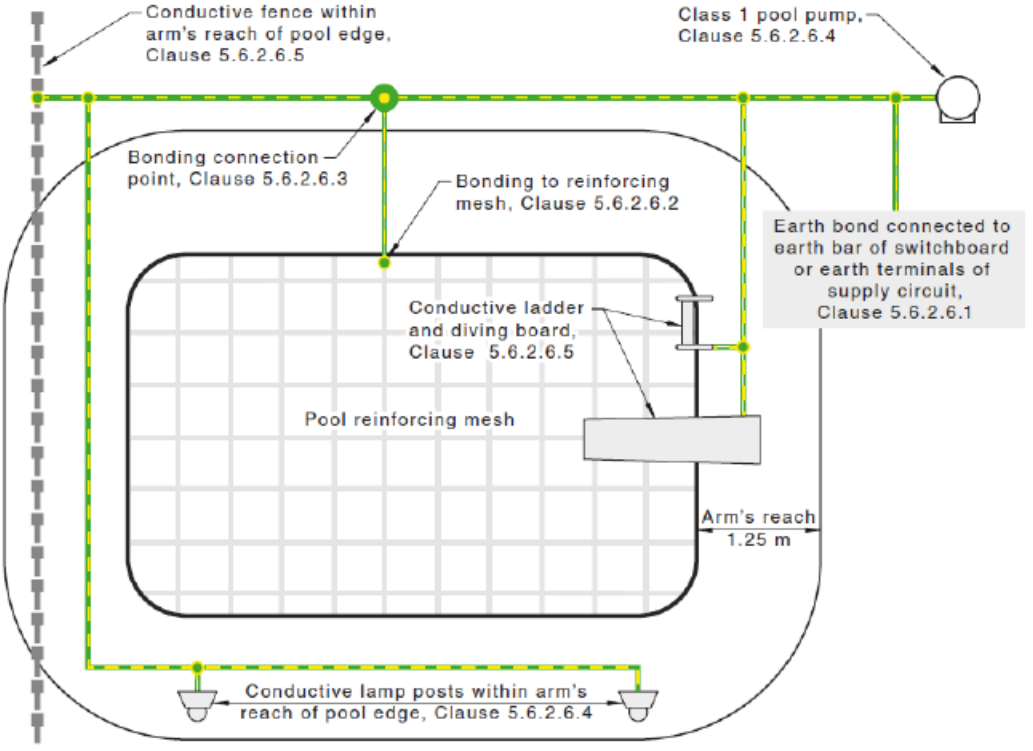
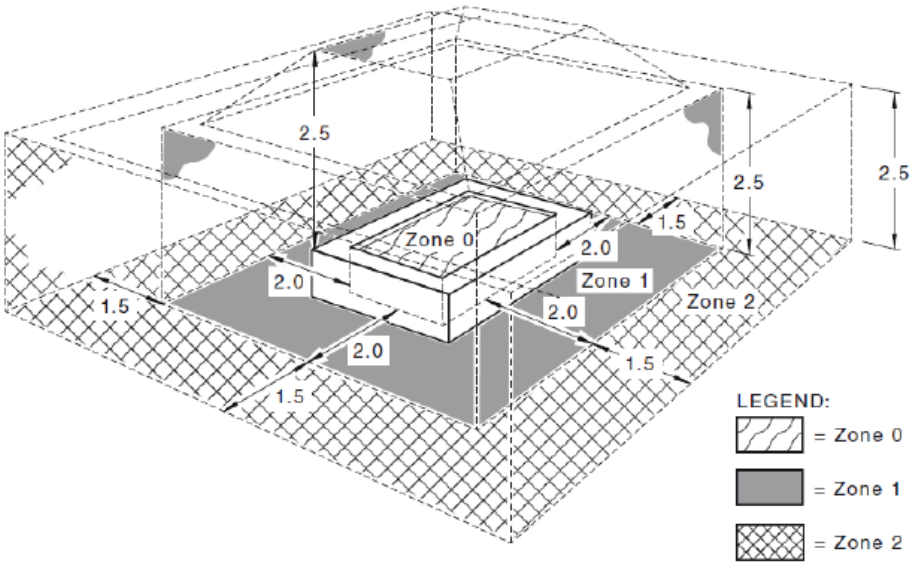


FIGURE 5.9 EXAMPLE OF BONDING ARRANGEMENT FOR POOLS AND SPAS

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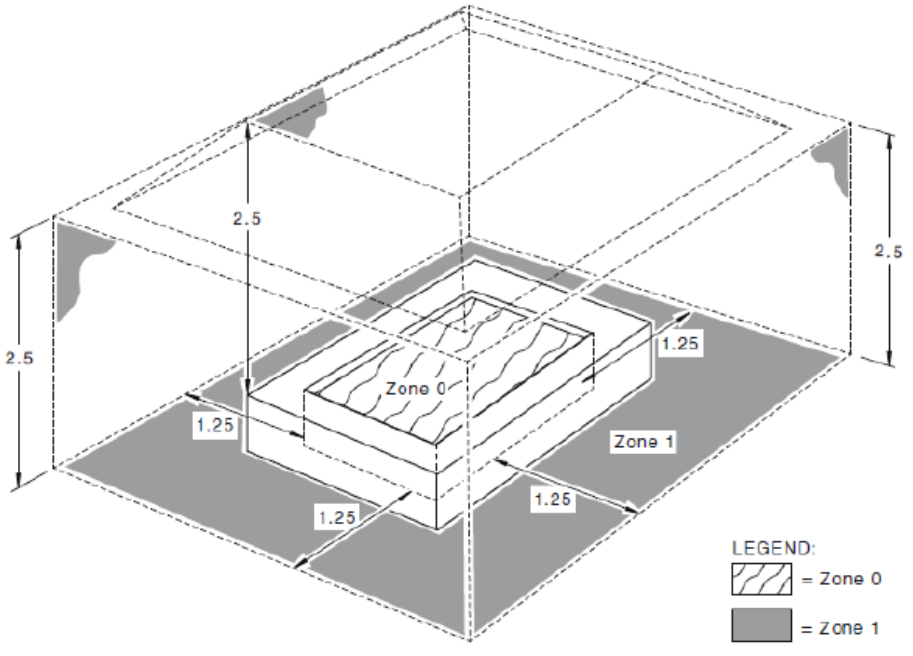
Earthing of Drains
Around Pools and Spas

Following are examples of how ‘zones’ work for pools and spas:



DIMENSIONS IN METRES

FIGURE 6.16 ZONE DIMENSIONS OF ABOVE-GROUND SWIMMING POOLS

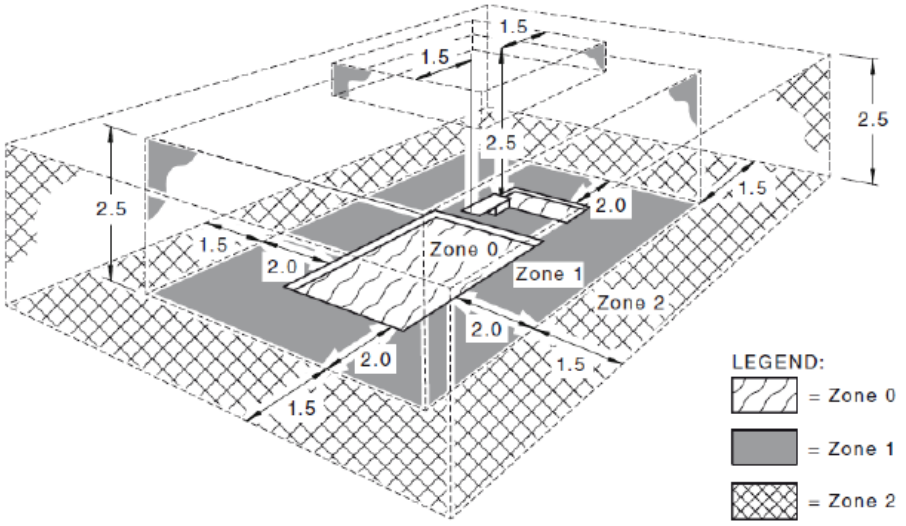


DIMENSIONS IN METRES

FIGURE 6.19 ZONE DIMENSIONS OF ABOVE-GROUND SPA POOLS AND TUBS WITH WATER CAPACITY NOT EXCEEDING 5000 L

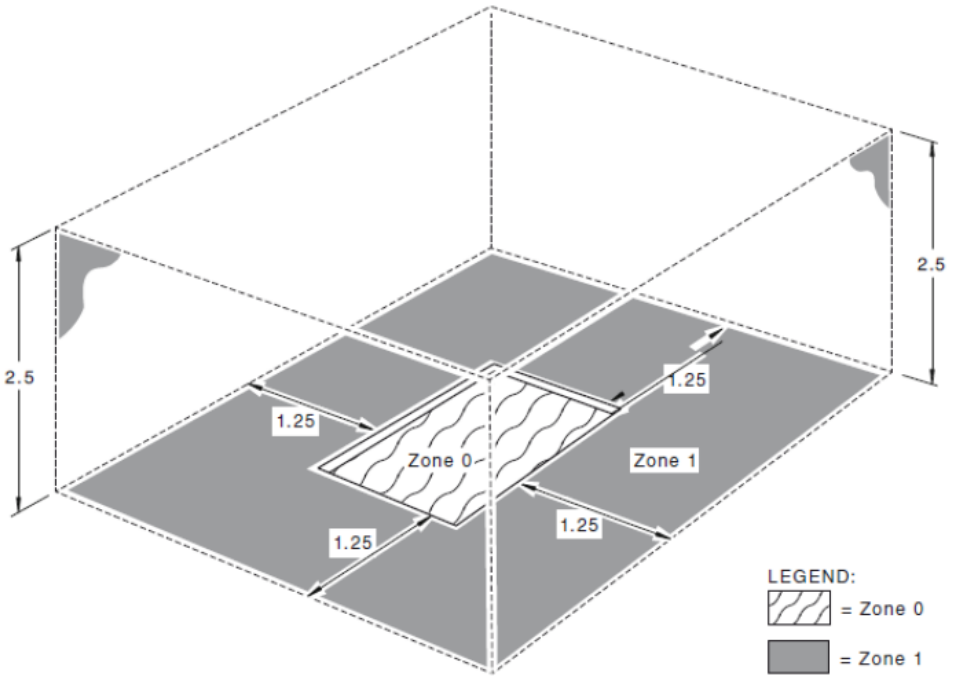
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Earthing of Drains
Around Pools and Spas



DIMENSIONS IN METRES

FIGURE 6.15 ZONE DIMENSIONS OF IN-GROUND SWIMMING POOLS



DIMENSIONS IN METRES

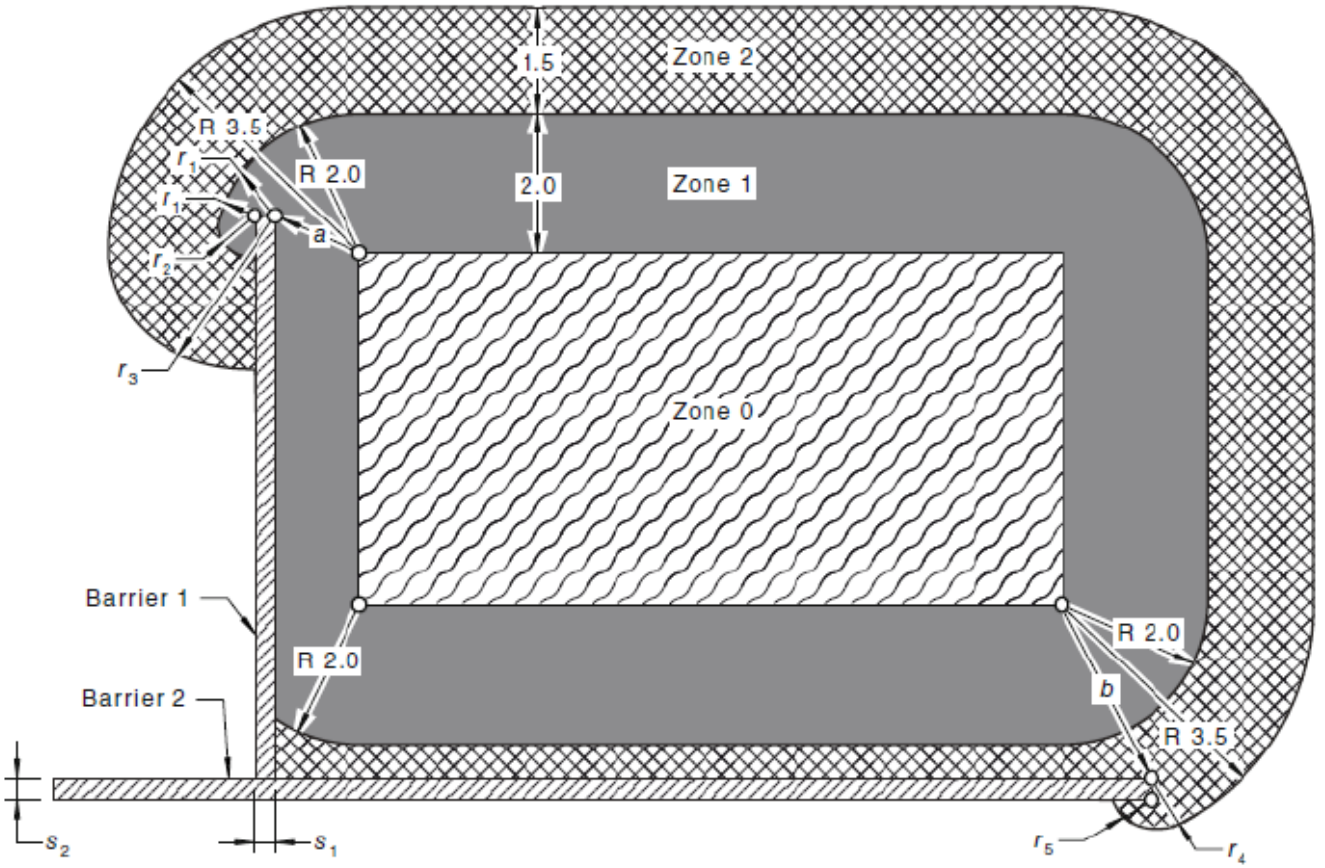
FIGURE 6.18 ZONE DIMENSIONS OF IN-GROUND SPA POOLS AND TUBS WITH WATER CAPACITY NOT EXCEEDING 5000 L

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Earthing of Drains
Around Pools and Spas

Below is an example of zones for pools with barriers like fences etc.



LEGEND:

r_1 = 2.0 – a
s_1 = Width of barrier 1
r_2 = r_1 – s_1
s_2 = Width of barrier 2
r_3 = 3.5 – a
r_4 = 3.5 – b
r_5 = r_4 – s_2

= Zone 0
= Zone 1
= Zone 2

NOTE: These dimensions apply to swimming pools, paddling pools and wading pools.

DIMENSIONS IN METRES

FIGURE 6.17 ZONE DIMENSIONS OF SWIMMING POOLS WITH FIXED BARRIERS (MINIMUM 1.8 m HIGH)

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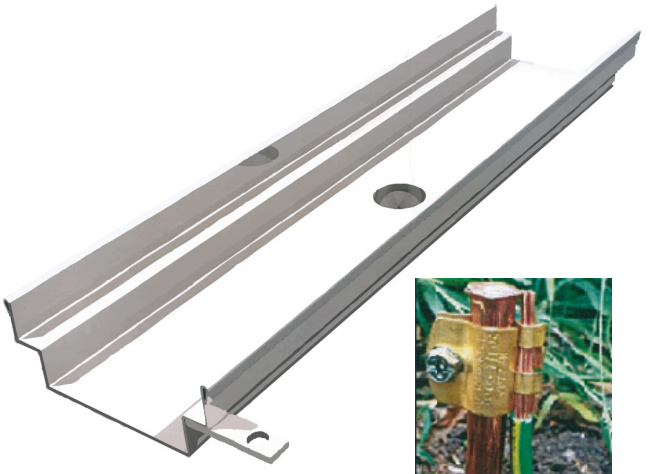
Earthing of Drains
Around Pools and Spas

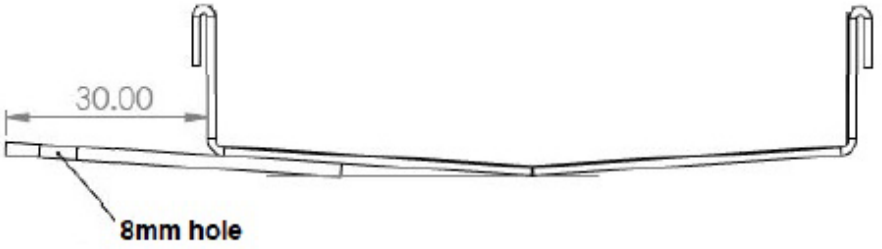
Stormtech recommend earth tags for all stainless steel drainage channels to be used in pool areas.

For each single channel, the earth point should be located 100mm in from one end (which side must be specified when ordering).

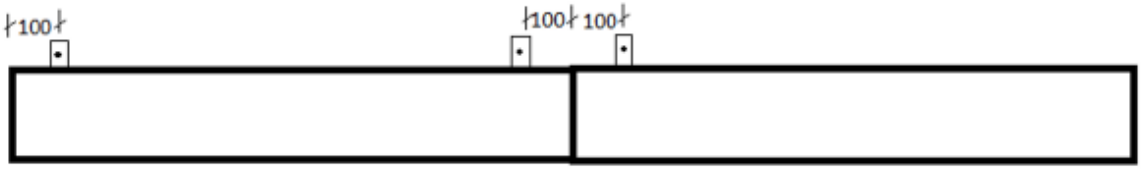
For channel sections that are joined by a fyschplate, provide one earth point on both sides of the join, 100mm in from the join.

See below detail:





- Along one side of the channel only (what side must be on the drawing), approximately 100mm in from one end and 100mm in from each join as per diagram below



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