Harger provides pool grounding & bonding solutions that meet the requirements of NEC 2014 *Equipotential Bonding* Article 680.26
Typical Pool Grounding & Bonding Layout

1. One-Hole Tinned Copper Lay-In Lug
   - Suitable for direct burial.
   - Part No.: TCLI414DB
     - Conductor Range (AWG): 4 - 14
     - Bolt Hole Size: #10

2. Copper Split Bolt
   - Suitable for direct burial.
   - Part No.: GESB8
     - Range for Equal Main (AWG): 16 Str. - 8 Str.
     - Minimum Tap: 16 Sol.

3. Copper Offset Terminal Lug
   - Suitable for direct burial.
   - Part No.: GEOL2
     - Conductor Range (AWG): 14 Str. - 6 Str.
     - Bolt Hole Size: #8

4 & 5. Rebar & Water Pipe Ground Clamps
   - Part No.: RB12A
     - Pipe & Rebar Range: 3/8" - 1" - 10 Sol. - 2 Str.
   - Part No.: RB12B
     - Pipe & Rebar Range: 3/8" - 1" - 10 Sol. - 2 Str.
   - Other sizes available.

6. CPC Pipe Clamps
   - Part No.: CPC1.S/2
     - Material: Tinned Bronze
     - Nom. Pipe Size Range: 1-1/2" - 2" - Pipe Outside Diameter: 1" - 2-1/4"
   - Other sizes available.
   - Part No.: CPC2.S/3
     - Material: Tinned Bronze
     - Nom. Pipe Size Range: 2-1/2" - 3" - 2-2/5" - 3-1/2" - Pipe Outside Diameter: 1" - 2-1/4"
   - Other sizes available.

7. Other mesh sizes and wire gauges available.
   - Part No.: GM350812
     - Width (ft.): 3
     - Length (ft.): 50
     - Conductor Spacing (in.): 12
     - Approx. Wt. (lbs.): 32
   - Part No.: GM375812
     - Width (ft.): 3
     - Length (ft.): 75
     - Conductor Spacing (in.): 12
     - Approx. Wt. (lbs.): 42
   - Part No.: GM3100812
     - Width (ft.): 3
     - Length (ft.): 100
     - Conductor Spacing (in.): 12
     - Approx. Wt. (lbs.): 51

Pool Grounding & Bonding Components

9 & 10. Cable to Rebar
   - Ultraweld Exothermic Connection Molds
     - Part No.: RP38SB
       - Weld Metal: UltraShot
       - Required Handle: US25
       - Packing Mat? No.: NUWTUBE25
       - Mat'l No.: MH1
       - Welding Material: WRPSLV
     - Part No.: RPA48SB
       - Weld Metal: UltraShot
       - Required Handle: US25
       - Packing Mat? No.: NUWTUBE25
       - Mat'l No.: MH1
       - Welding Material: WRPSLV
     - Part No.: RO48SB
       - Weld Metal: UltraShot
       - Required Handle: US65
       - Packing Mat? No.: NUWTUBE65
       - Mat'l No.: MH1
       - Welding Material: WRPSLV
     - Part No.: RO8SB
       - Weld Metal: UltraShot
       - Required Handle: US65
       - Packing Mat? No.: NUWTUBE65
       - Mat'l No.: MH1
       - Welding Material: WRPSLV

11. Rebar Grounding Assembly
   - Part No.: RB2GAS8SB
     - Weld Metal: UltraShot
     - Required Handle: US25
     - Packing Mat? No.: NUWTUBE25
     - Mat'l No.: MH1
     - Welding Material: WRPSLV
     - Other sizes available.

12. UL Listed Prefabricated
    #8 Solid Copper Ground Mesh
    - Part No.: PT8S8SB
      - Width (ft.): 3
      - Length (ft.): 50
      - Conductor Spacing (in.): 12
      - Approx. Wt. (lbs.): 32
    - Part No.: PT8S6SL
      - Width (ft.): 3
      - Length (ft.): 75
      - Conductor Spacing (in.): 12
      - Approx. Wt. (lbs.): 42
    - Part No.: PT8S6SL
      - Width (ft.): 3
      - Length (ft.): 100
      - Conductor Spacing (in.): 12
      - Approx. Wt. (lbs.): 51

Harger Lightning & Grounding
- 301 Ziegler Drive, Grayslake, IL 60030
- Phone: 800-842-7437
- www.harger.com
<table>
<thead>
<tr>
<th>TECHNICAL NOTES:</th>
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<tbody>
<tr>
<td>• 680.26 Equipotential Bonding* (Summarized)</td>
</tr>
<tr>
<td>(A) Performance. The equipotential bonding required by this section shall be installed to reduce voltage gradients in the pool area.</td>
</tr>
<tr>
<td>(B) Bonded Parts. The parts specified in 680.26(B)(1) through (B)(7) shall be bonded together using solid copper conductors, insulated covered, or bare, not smaller than 8 AWG or with rigid metal conduit of brass or other identified corrosion-resistant metal. Connections to bonded parts shall be made in accordance with 250.8**. An 8 AWG or larger solid copper bonding conductor provided to reduce voltage gradients in the pool area shall not be required to be extended or attached to remote panelboards, service equipment, or electrodes.</td>
</tr>
<tr>
<td>(1) Conductive Pool Shells. Bonding to conductive pool shells shall be provided as specified in 680.26(B)(1)(a) or (B)(1)(b).</td>
</tr>
<tr>
<td>Poured concrete, pneumatically applied or sprayed concrete, and concrete block with painted or plastered coatings shall all be considered conductive materials due to water permeability and porosity. Vinyl liners and fiberglass composite shells shall be considered nonconductive materials.</td>
</tr>
<tr>
<td>(a) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent. Where structural reinforcing steel is encapsulated in a nonconductive compound, a copper conductor grid shall be installed in accordance with 680.26(B)(1)(b).</td>
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<tr>
<td>(b) Copper Conductor Grid. A copper conductor grid shall be provided and shall comply with (b)(1) through (b)(4).</td>
</tr>
<tr>
<td>(1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing. The bonding shall be in accordance with 250.8 or approved means.</td>
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<tr>
<td>(2) Conform to the contour of the pool.</td>
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<tr>
<td>(3) Be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.).</td>
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<tr>
<td>(4) Be secured within or under the pool no more than 150 mm (6 in.) from the outer contour of the pool shell.</td>
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<tr>
<td>(2) Perimeter Surfaces. The perimeter surface shall extend for 1 m (3 ft.) horizontally beyond the inside walls of the pool and shall include unpaved surfaces as well as poured concrete surfaces and other types of paving. Perimeter surfaces less than 1 m (3 ft.) separated by a permanent wall or building 1.5 m (5 ft.) in height or more shall require equipotential bonding on the pool side of the permanent wall or building. Bonding to perimeter surfaces shall be provided as specified in 680.26(B)(2)(a) or (2)(b) and shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four (4) points uniformly spaced around the perimeter of the pool.</td>
</tr>
<tr>
<td>For nonconductive pool shells, bonding at four points shall not be required.</td>
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<tr>
<td>(a) Structural Reinforcing Steel. Structural reinforcing steel shall be bonded in accordance with 680.26(B)(1)(a).</td>
</tr>
<tr>
<td>(b) Alternate Means. Where structural reinforcing steel is not available or is encapsulated in a nonconductive compound, a copper conductor(s) shall be utilized where the following requirements are met:</td>
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<tr>
<td>(1) At least one minimum 8 AWG bare solid copper conductor shall be provided.</td>
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<tr>
<td>(2) The conductors shall follow the contour of the perimeter surface.</td>
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<tr>
<td>(3) Only listed splices shall be permitted.</td>
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<tr>
<td>(4) The required conductor shall be 450 to 600 mm (18 in. to 24 in.) from the inside walls of the pool.</td>
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<tr>
<td>(5) The required conductor shall be secured within or under the perimeter surface 100 to 150 mm (4 in. to 6 in.) below the subgrade.</td>
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<tr>
<td>(3) Metallic Components. All metallic parts of the pool structure, including reinforcing metal not addressed in 680.26(B)(1)(a), shall be bonded. Where reinforcing steel is encapsulated with a nonconductive compound, the reinforce steel shall not be required to be bonded.</td>
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<tr>
<td>(4) Underwater Lighting.</td>
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<td>(5) Metal Fittings.</td>
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<tr>
<td>(6) Electrical Equipment.</td>
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<tr>
<td>(7) Fixed Metal Parts. All fixed metal parts shall be bonded including, but not limited to, metal-sheathed cables and raceways, metal piping, metal awnings, metal fences, and metal door and window frames.</td>
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<tr>
<td>Exception No 1: Those separated from the pool by a permanent barrier that prevents contact by a person shall not be required to be bonded.</td>
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<tr>
<td>Exception No 2: Those greater than 1.5 m (5 ft.) horizontally from the inside walls of the pool shall not be required to be bonded.</td>
</tr>
<tr>
<td>Exception No 3: Those greater than 3.7 m (12 ft.) measured vertically above the maximum water level of the pool, or as measured vertically above any observation stands, towers, or platforms, or any diving structures, shall not be required to be bonded.</td>
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<tr>
<td>(C) Pool Water. Where none of the bonded parts is in direct connection with the pool water, the pool water shall be in direct contact with an approved corrosion-resistant conductive surface that exposes not less than 5800 mm² (9 in.²) of surface area to the pool water at all times. The conductive surface shall be located where it is not exposed to physical damage or dislodgement during usual pool activities, and it shall be bonded in accordance with 680.26(B).</td>
</tr>
<tr>
<td>(D) Methods Not Permitted. Connection devices or fittings that depend solely on solder shall not be used.</td>
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</table>

**NEC 2014 Equipment Bonding Article 680.26  
NEC 2014 Connection of Grounding and Bonding Equipment Article 250.8**