**DESIGNER SPECIFICATION**

**SECTION 13 11 00**

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**SWIMMING POOL SPECIFICATION**

**SECTION 13 11 00**

**Perimeter Overflow System – Concrete Gutter**

1. A perimeter overflow system consisting of a continuous concrete and overflow channel as detailed and shown on the design documents shall be installed on the pool(s).
2. The sidewalls, floor of a concrete gutter shall be coated with an approved waterproofing application.

(PARALLEL GRATING) The grating shall be formed of molded PVC sections that are modular and interlocking. The grating surface bars shall run parallel to the pool wall for quick capture of water and with the gap providing at least 40% open space for unrestricted water flow. ALL grating, including corners, sweeps and radii shall be certified to NSF/ANSI/CAN-50 2020, Sec 22.3 for vertical load and deformation plus pull load all per ANSI/APSP-16 or greater; to comply with finger and limb entrapment per section 3 of ANSI/APSP-16. The space between the bars shall not exceed 0.315" (8mm) to also comply with or EN 13541-1 2020, including radii and corners sections. The top section shall have a raised herringbone design and certified to AS 4586-2013 Class C for Wet-Barefoot inclining platform (ramp) test for swimming pool surroundings and communal shower rooms. The width of the grating shall allow the insertion of the touchpad holding brackets between the grating and the gutter lip.

All inside and outside corners and custom radii sections under 3-feet inside diameter shall be custom fabricated and strengthened by manufacturer.

Grate width to be 10” *(4”, 12”,14”; 16”)* and supported each side by the pool gutter lip no less than 1.5” in width.

Grate color to be selected by the Architect/Owner. Colors available in white, bone and gray. The grating shall have a minimum 10-year manufacturer’s warranty.

Grating shall be DPAS (straight) or DPAR (radius) as manufactured by Daldorado LLC. Ph: (888) 509-8128, or approved equal.

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(PERPENDICULAR GRATING) The grating shall be formed of molded PVC sections, certified NSF/ANSI/CAN 50-2020, that are modular, interlocking pieces, UV stabilized in accordance with ASTM G154 and to the strength requirements of ANSI/APSP/ICC-16 2017 Section 22.3. The top section shall have a raised herringbone design and certified to AS 4586-2013 Class C for Wet-Barefoot inclining platform (ramp) test for swimming pool surroundings and communal shower rooms. Grating shall be 0.47” (12mm) wide and an outside depth of 1.0” (25.4mm) with a middle depth of 1.83” (46.6mm) for load strength requirements. The grating shall be certified under ANSI/AS 3996 Class A for covers and grates with load exceeding 10kN (2,248lb). The space between the bars shall not exceed 0.315” (8mm) to comply ANSI/APSP/ICC-16 2017 (PA) 2021 finger and limb entrapment certification. The grating surface bars shall run perpendicular to the pool wall and with the gap, providing at least 40% open space per foot for unrestricted water flow. Fasteners shall be SS-316 and be provided by the manufacturer. The width of the grating shall allow the insertion of the touchpad holding brackets between the grating and the gutter lip. All inside and outside corners and custom radii sections under 3-feet inside diameter shall be custom fabricated and strengthened by manufacturer. Radii sections will no longer comply with ANSI/APSP/ICC-16 2017 for finger and

Grate width to be 12” *(14”; 16”)* and supported each side by the pool gutter lip no less than 1.5” in width.

Grate color to be selected by the Architect/Owner. Colors available in white, bone and gray. The grating shall have a minimum 10-year manufacturer’s warranty.

Grating shall be manufactured by Daldorado LLC. Ph: (888) 509-8128, or approved equal.

**Perimeter Overflow Systems – Custom Width Parallel Grate - Straight**

The grating shall be formed of moulded PVC sections, certified NSF/ANSI/CAN 50-2020, that are modular, interlocking sections, UV stabilized, with the top section having a raised herringbone design. Grating shall be 0.625” (15.9mm) wide and an outside depth of 1.0” (25.4mm) with the space between the bars not exceeding 0.375” (9.5mm). The grating will have 4-15mm FRP rods and 5 connector pins for load strength requirements. FRP rods to be held in place with PVC caps that are glued on the ends. The grating surface bars shall run parallel to the pool wall and with the gap, provide at least 37.5% open space per foot for unrestricted water flow. Fasteners shall be SS-316 and provided by the manufacturer. The width of the grating shall allow the insertion of the holding brackets between the grating and the gutter supports. All inside and outside corners custom fabricated and strengthened by manufacturer.

Grate width to be supported each side by the pool gutter lip no less than 1.5” in width.

*(Gutters without outside gutter lip, the grate shall be structurally supported across the width, by alternate support method, at 12” maximum on center, by others.)*

Grate color to be selected by the Architect/Owner. Colors available in white, bone and gray. The grating shall have a minimum 10-year manufacturer’s warranty.

Grating shall be DPE as manufactured by Daldorado LLC. Ph: (888) 509-8128, or approved equal.

**Perimeter Lane Line Anchor System**

1. The lane line anchor unit 12” (14” 16”) x 2” wide, must be non-corrosive and not require bonding. The unit shall be formed of two molded PVC sections, certified ANSI/NSF/CAN 50-2020 (Section 22.3), that are UV stabilized, these sections are a top opening flip-up grate hatch section connected to a base unit section with a 316SS pin. The grate on the top opening flip-up grate hatch section shall have a raised herringbone design and certified to AS 4586-2013 Class C for Wet-Barefoot inclining platform (ramp) test for swimming pool surroundings. Grate sections shall be 0.47” (12mm) wide and an outside depth of 1.0” (25.4mm) with a middle depth of 1.83” (46.6mm) for load strength requirements. The space between grate bars shall not exceed 0.315” (8mm) to comply with ANSI/APSP/ICC-16 2017 (and BS EN 13451) for finger and limb entrapment. The grate surface bars shall run parallel to the pool wall and with the gap providing at least 40% open space per foot for unrestricted water flow. The lane line anchor unit shall include a lane line extension constructed of a SS braided strap covered with silicon that is flexible and can be stowed within the unit and is capable of extending beyond the unit to connect to the pool lane line S-hook that is 8” (14”) long. The lane line anchor unit shall be tested to a load pull test of 1,200lb minimum based on 2500 psi concrete pour. The lane line anchor unit shall be secured in a perimeter concrete gutter system with SS-316 drop-in anchors and socket head cap screws as provided by the manufacturer. The lane line anchor unit shall be designed to minimize the use of metallic substances thus avoiding the requirement of electrical bonding as per NEC 680.26 (c);
2. Lane Line Anchor unit shall be DalFLEX-12 (or DalFLEX-14 or DalFLEX-16). Color: white only. As manufactured and supplied by Daldorado LLC. Ph: (888) 509-8128. No Known Equal.

**Deck Drain System**

1. Deck Drain: The deck drain base shall be 4” wide, shall have a 4” (2”) inside depth and be formed of extruded PVC 0.2” (5mm) thick in lengths of 10’-0” in straight or custom radii down to a 6’-0” (2-meter) inside diameter. Each deck drain section shall be provided with EPDM joiners that also perform as expansion joints. The deck drain base bottom base piece shall have 5/8” pre-drilled holes at 18” OC both sides. These holes are provided for the use of threaded rods with lock nuts, for ease of leveling. Size, location and number of storm water *(sanitary sewer)* drain outlets to be determined by designer and/or local rain/sewer water requirements. The deck drain shall be strength tested for light vehicle traffic. The deck drain shall be provided with a construction cap for protection during installation. Color: gray only.
2. Grate: The deck drain grating shall be formed of molded PVC sections, certified NSF/ANSI/CAN 50-2020, that are modular, interlocking sections, UV stabilized. The top section shall have a raised herringbone design and certified to AS 4586-2013 Class C for Wet-Barefoot inclining platform (ramp) test for swimming pool surroundings and communal shower rooms. Grating shall be 0.47” (12mm) wide and an outside depth of .83” (21.1 mm) with a middle depth of 1.1” (27.7 mm) for load strength requirements. The grating shall be certified under ANSI/AS 3996 Class A for covers and grates with load exceeding 10kN (2,248lb). The space between the bars shall not exceed 0.315” (8mm) to comply with ANSI/APSP/ICC-16 2017 (PA) 2021 finger and limb entrapment certification. The grating surface bars gap, provide at least 40% open space per foot for unrestricted water capture. Color to be selected by the Architect/Owner. Available in colors white, bone or gray.
3. Dropout drain boxes ~ 12”x12”x12” pre-manufactured sump shall be 12x12x12 fabricated by using fiberglass matt. Connection ports in sizes of 4-inch *(6-inch)* as indicated on the design documents, with a storm *(sanitary sewer)* outlet at the bottom of 1.5-inch *(2-inch, 3-inch)*. Color: internal gel coat to match grate color.

Each drain box to be supplied with grate to match the deck drain grate. *(Each drain box to be supplied with strainer for easier cleanout.)* Grate color to be selected by the Architect/Owner. Colors available in white, bone and gray. The grate shall have a minimum 10-year manufacturer’s warranty.

1. Optional strainer basket shall be mounted inside drop out box for easy removal and cleaning.

CAP-SHURE Deck Drain System as manufactured by Daldorado LLC. Ph: (888) 509-8128, or approved equal.

**Suction Re-circulation Fittings – Main Drain Sump Frame and Grates – (SOFA’s)**

1. Main suction outlet assemblies (SOFA’s) – (main drain sumps, frame and grates), must be certified ANSI/ICC/APSP-16 2017 (PA 2021) as a SOFA and NSF/ANSI/CAN 50-2020, sizes to be as indicated on the drawings. Grate cover must have a minimum Service Life of 25-Years and the Sump must have a minimum Service Life of the Life of the Aquatic Facility, with a minimum 10-year Manufactures Warranty.
   1. Sumps/drains shall be a fiberglass pre-manufactured SOFA (Suction Outlet Fitting Assembly) that is corrosion resistant, non-conductive, non-magnetic, high strength 8oz fiberglass matt with marine grade white gel coat applied inside. SOFA shall have a 1.5” water stop around the outside perimeter 5” below the top lip and a 2” FRP brace around the outside perimeter 15.5” below the top lip for strengthening. The sump shall come with two (2) pre-installed 2” sch-40 female threaded adapters on the bottom for hydrostatic connection and allow for single or multiple configurations of suction ports. The SOFA sump shall be supplied complete with frame and grate. The complete SOFA unit shall have been tested and pre-labeled for each sump depth by the manufacturer in compliance with ANSI/ICC/APSP-16 2017 (PA 2021), Suction-Outlet Fitting Assemblies for Use in Swimming Pools.

The sump shall have the manufacturers name stenciled on the outside to be visibly clear during piping inspections.

All sumps/drains and grates/covers to be USPC® certified.

Sizes as shown on the drawings. (24x24x12, 24x24x30, 24x48x34, 24x48x42, 18x36x24, 18x36x25, 18x36x28, 18x36x34, 18x54x24, 18x54x27, 18x36x28, 18x54x29, 18x54x34, 18x72x34, 18x72x42)

* DalMAX-SG/FG-24x24x12 - *(max. 3” suction port size)*

FLOOR only sump/drain - flow rate of 408gpm.

* DalMAX-SG/FG-24x24x12 - *(max. 4” suction port size)*

FLOOR only sump/drain - flow rate of 712gpm.

* DalMAX-SG/FG-24x24x12 - *(max. 6” suction port size)*

FLOOR only sump/drain - flow rate of 1664gpm.

* DalMAX-SG/FG-24x24x30 - *(max. 12” suction port size)*

FLOOR sump/drain - flow rate of 1734gpm.

WALL sump/drain - flow rate of 1600gpm.

* DalMAX-SG/FG-24x48x34 *- (max. 16”side, 24”bottom suction port)*

FLOOR only sump/drain - flow rate of 6,456gpm.

* DalMAX-SG/FG-24x48x42 - *(max. 24” suction port size)*

FLOOR only sump/drain - flow rate of 6,456gpm.

* DalMAX-SG/FG-18x36x24 - *(max. 8” suction port size)*

FLOOR sump/drain - certified max. flow rate of 1,984gpm.

WALL sump/drain - certified max. flow rate of 1,440gpm.

* DalMAX-SG/FG-18x36x25 - *(max. 8” suction port size)*

FLOOR sump/drain - certified max. flow rate of 1,984gpm.

WALL sump/drain - certified max. flow rate of 1,440gpm.

* DalMAX-SG/FG-18x36x28 - *(max. 10” suction port size)*

FLOOR sump/drain - certified max. flow rate of 2,480gpm.

WALL sump/drain - certified max. flow rate of 1,909gpm.

* DalMAX-SG/FG-18x36x34 - *(max. 16” suction port size)*

FLOOR sump/drain - certified max. flow rate of 2,869gpm.

WALL sump/drain - certified max. flow rate of 2,080pm.

* DalMAX-SG/FG-18x54x24 - *(max. 10” suction port size)*

FLOOR sump/drain - certified max. flow rate of 2,872gpm.

WALL sump/drain - certified max. flow rate of 2,872pm.

* DalMAX-SG/FG-18x54x27 - *(max. 10” suction port size)*

FLOOR sump/drain - certified max. flow rate of 2,872gpm.

WALL sump/drain - certified max. flow rate of 2,872pm.

* DalMAX-SG/FG-18x54x28 - *(max. 12” suction port size)*

FLOOR sump/drain - certified max. flow rate of 2,944gpm.

WALL sump/drain - certified max. flow rate of 2,872gpm.

* DalMAX-SG/FG-18x54x29 - *(max. 12” suction port size)*

FLOOR sump/drain - certified max. flow rate of 2,944gpm.

WALL sump/drain - certified max. flow rate of 2,872gpm.

* DalMAX-SG/FG-18x54x34 - *(max. 16” suction port size)*

FLOOR sump/drain – certified max. flow rate of 4,412gpm.

* DalMAX-SG/FG-18x72x34 - *(max. 16”side, 24”bottom suction port)*

FLOOR only sump/drain - flow rate of 7,715gpm.

* DalMAX-SG/FG-18x72x42 - *(max. 24” suction port size)*

FLOOR only sump/drain - flow rate of 7,715gpm.

* 1. Grate/covers to be supplied complete with the sump/drain and in corresponding sizes to the sump. Grate/cover shall be formed of molded PVC sections that are UV stabilized and certified NSF/ANSI/CAN 50-2020. The top section shall have a raised design and certified to ANSI/APSP/ICC-16 2017 (PA 2021). Grating shall be 0.20” (5mm) wide and an outside depth of 1.0” (25.4mm) with a middle depth of 1.45” (36.8mm) for load strength requirements. The grating shall be certified under ANSI/APSP/ICC-16 2017 (PA 2021), NSF/ANSI/CAN 50-2020. The space between the bars shall not exceed 0.39” (10mm). The grating shall provide at least 62% open space for unrestricted water flow. Fasteners shall be SS-316 or Brass as tested to ANSI/APSP/ICC-16 2017 (PA 2021) and provided by the manufacturer with complete sump, frame and grate unit, no others shall be permitted. Grate/covers shall be USPC certified un-blockable in 18”x18” *(24”x24”)* multiples. Color: White only
* DalMAX-GO-1818 (single) x 2 *(x 3, x 4).*
* *DalMAX-GO-2424 (single) (x 2).*
  1. SOFA (Sump, frame and grate) shall not exceed the flow rates as tested and stated by the manufacturer in compliance with ANSI/APSP/ICC-16 2017 (PA 2021). Suction outlets, size and numbers can be changed and specified and ordered through the manufacturer provided design flow rates as tested and certified by ANSI/APSP/ICC-16 2017 (PA 2021) are not exceeded.

1. All sump suction ports shall be supplied with slip couplings *(or, threaded adaptor connectors; or, flanged fittings )* in schedule 80 *(40)*.
2. *Optional Winterization: All sump suction 12” or less in diameter, shall be supplied with “ threaded adaptor connections” and corresponding “threaded adaptor plugs” for the purposes of winterization. All sump suction ports 14” or greater shall be supplied with flanged fittings in schedule 80 (40) and hardware for the purposes or winterization.*
3. *Optional Winterization: Each large area main drain suction outlet sump shall be supplied with removable ¼” PVC top cover protector to shield the internals of the sump from debris during the winterization period. The cover shall be secured in place of the grates, for the duration of winterization, and be shipped with 3/16” SS screws for seasonal fixing and removal for storage for repeat annual use.*
4. Each Main Drain Suction Outlet (SOFA) grate covering shall have a manufacturers minimum service life of 25-years. Each Main Drain Suction Outlet (SOFA) sump body shall have a service life of the life of the facility, and the SOFA shall have a manufacturer’s warranty of 10-years.
5. Main Drain Suction Outlets (SOFA) shall be Dal-MAX-SG manufactured by Daldorado LLC. Ph: (888) 509-8128, or approved equal.

**Custom Large Area Custom Suction Grate**

The grate shall be formed of molded PVC sections that is UV stabilized and certified to ANSI/NSF/CAN 50-2020 with the top section having a raised herringbone design. Grating shall be 0.625” (15.9mm) wide and an outside depth of 1.0” (25.4mm) with the space between the bars not exceeding 0.375” (9.5mm). The grating shall have 4-15mm FRP rods and 5-connector pins for load strength requirements. FRP rods shall be held in place with PVC caps that are glued on the ends. The grating gap, shall provide at least 37.5% open space per foot for unrestricted water flow. Fasteners shall be SS-316 and be provided by the manufacturer. The grating shall allow the insertion of the holding brackets between the grating and the gutter supports.

24 x 24 tested and certified to ANSI/APSP/ICC-16 2017 (PA) 2021, all other sizes greater than 18 inches in one direction and/or 23 inches in the other direction shall have the maximum flow rate calculated using the “Q” formula as stated in the standard. This flow rate to be laser engraved on 2-ply acrylic and fastened to grate with 316 SS drive screws. Widths up to 30” do not need additional support.

Color to be selected by the Architect/Owner. Available in white *(bone; gray)*. The grating shall have a minimum 10-year manufacturer’s warranty.

Grating as manufactured by Daldorado LLC. Ph: (888) 509-8128, or approved equal.

**Perimeter Custom Width Straight Grate**

The grate shall be (X-inches *(6 to 30)* wide) formed of molded PVC sections that are modular, interlocking 24” sections, UV stabilized and certified ANSI/NSF/CAN 50 – 2020 with the top section having a raised herringbone design. Grating shall be 0.625” (15.9mm) wide and an outside depth of 1.0” (25.4mm) with the space between the bars not exceeding 0.375” (9.5mm). The grating shall have 4-15mm FRP rods and 5-connector pins for load strength requirements. FRP rods shall be held in place with PVC caps that are glued on the ends. The grating gap, shall provide at least 37.5% open space per foot for unrestricted water flow. Fasteners shall be SS-316 and be provided by the manufacturer. The grating shall allow the insertion of the holding brackets between the grating and the gutter supports.

Color to be selected by the Architect/Owner. Color: available in white, bone and gray. The grating shall have a minimum 10-year manufacturer’s warranty.

Grating as manufactured by Daldorado LLC. Ph: (888) 509-8128 or approved equal.

**Custom Non-Suction Flat Grate – (rectangular, square, triangular, circular, ect.)**

The grate shall be (X-inches *(12” minimum* wide) (X-inches in diameter *(18” minimum dia)*) formed of molded PVC sections that are modular, interlocking 24” sections, UV stabilized and certified ANSI/NSF/CAN 50 – 2020 with the top section having a raised herringbone design. Grating shall be 0.625” (15.9mm) wide and an outside depth of 1.0” (25.4mm) with the space between the bars not exceeding 0.375” (9.5mm). The grating shall have 4-15mm FRP rods and 5-connector pins for load strength requirements. FRP rods to be held in place with PVC caps that are glued on the ends. The grating gap, shall provide at least 37.5% open space per foot for unrestricted water flow. Fasteners shall be SS-316 and provided by the manufacturer. The grating shall allow the insertion of the holding brackets between the grating and the gutter supports.

Color to be selected by the Architect/Owner. Color: available in white, bone and gray. The grating shall have a minimum 10-year manufacturer’s warranty.

Grating shall be manufactured by Daldorado LLC. Ph: (888) 509-8128 or approved equal.

***Note to Specifier:***

1. *Grate cover rectangular or square from 12-inches and up in width.*
2. *Grate, greater than a 12-inch span shall require additional structural support.*
3. *Grate cover triangular or circular from 18-inch min. and up.*
4. *Circular and Triangular grates to have 1-inch PVC edging welded/glued to provide a stable and secure edge finish.*

***Possible Application for large area grate covers – including but not limited to;***

1. *catch basins*
2. *water-slide run-out over flow grate*
3. *lazy river seat opening cover grate*
4. *water play area gravity flow grate*
5. *bulk heads*

**Wall Weir with Grate**

Moving River *(Current Channel, Spa)* straight or radius Wall Weir with Grate shall be pre-manufactured, corrosive resistant. Lengths up to 8-feet. Radii can be either concave or convex and pre-plumbed per project design detail.

Weir shall have tabs welded onto the body with predrilled holes provided for the use of threaded rods with lock nuts, for ease of levelling and installation. Additional tabs with predrilled holes to be utilized for tying into rebar for stability during concrete pour. The weir shall be provided with internal PVC supports for added strength.

The weir to be supplied with plywood installed across the opening of the weir to keep debris out of the weir throughout construction. The front face surface of the weir shall be provided with stainless steel mesh to provide a base that will allow application of pool finish material to the face of the weir.

Weir Grating shall be parallel grate 4” *(6” or 8”)* wide. The grating shall be formed of molded PVC sections that are modular, interlocking sections, UV stabilized and certified NSF/ANSI/CAN 50-2020. The top section shall have a raised herringbone design and certified to AS 4586-2013 Class C for Wet-Barefoot inclining platform (ramp) test for swimming pool surroundings and communal shower rooms. Grating shall be 0.47” (12mm) wide and an outside depth of 1.0” (25.4mm). The space between the bars shall not exceed 0.315” (8mm) to comply with ANSI/APSP/ICC-16 2017 (PA) 2021 for finger and limb entrapment. The grating surface bars shall run parallel to the pool wall and with the gap, provide at least 40% open space per foot for unrestricted water flow. Fasteners shall be SS-316 and be provided by the manufacturer.

Color to be selected by the Architect/Owner. Color: available in white, bone and gray. The Weir and Grate shall have a minimum 10-year manufacturer’s warranty.

Weir and Grate shall be DWW as manufactured by Daldorado LLC. Ph: (888) 509-8128.

**DalLUX Tile/Stone Support Grate**

Tile/Stone Paver Support Grate shall be provided in interlocking 12” x 12” (305mm x 305mm) PVC sections with recessed groves providing 3.58” (91-mm) openings separated by 5/16” (8-mm) spacers to secure, cut sections of tile or stone paver, as specified by the architect, and allow free water flow through each opening. Across the span of the Tile/Stone Paver Support Grate there shall be 3-sections of tile/stone paver offering four (4), 5/16” (8-mm) openings for water flow. (4-sections of tile/stone paver offering five (5), 5/16” (8-mm) openings for water flow). The open 5/16” (8-mm) open slots for water flow shall be parallel to the pool edge. Tile/Stone Paver Support Grate shall be designed for minimal deflection and tested under AS 3996 at over 10Kn (2,248-lbs).

Tile/Stone Pavers (as specified by the architect and supplied and installed by the tile contractor), shall be designed and specified for approval in wet, barefoot areas, in accordance with DIN 51097 ([Pendulum DCOF Test](https://safetydirectamerica.com/floor-friction-testing/pendulum-floor-test/)) CTIOA, HB 198/AS 4663-2013, EN 13036-4, 15676, EN 14231, etc.), guidelines of minimum wet Pendulum Test Slip Resistance or equal as approved by the Ceramic Tile Institute of America (CTIOA). Each tile section must have bevelled sides and ends to avoid bare foot injury. Each Tile/Stone Paver shall be adhered to the support grate bars with a PU based adhesive as recommended by the manufacturer.

All Tile/Stone Paver Support Grate corners shall be custom assembled by the manufacturer with NO exceptions.

Tile/Stone Paver Support Grate: Color: black.

Support Grate shall have a minimum 10-year manufacturer’s warranty.

Tile/Stone Paver Support Grate system shall be provided in interlocking 12” x 12” (305mm x 305mm) PVC sections with recessed groves providing 3.58” (91-mm) openings separated by 5/16” (8-mm) spacers to secure the cut sections of tile or stone paver and allow for water flow through each opening. Across the span of the Tile/Stone Paver Support Grate there shall be 3-sections *(4-sections)* of tile/stone paver offering four (4), 5/16” (8-mm) openings for water flow *(4-slimmer sections of tile/stone paver offering five (5), 5/16” (8-mm) openings for water flow).* The open 5/16” (8-mm) slots for water flow shall be parallel to the pool edge.

Tile/Stone Paver Support Grate shall be designed for minimal deflection and tested under AS3996 at over 10Kn (2,248-lbs).

Tile/Stone Pavers (specified by the architect and supplied and installed by the contractor), shall be approved slip-resistance and must have bevelled sides and ends to avoid bare foot injury.

Tile/Stone Pavers shall be adhered to the support grate bars with a PU based adhesive as supplied by the manufacturer.

Tile/Stone Paver Support Grate corners are to be custom assembled by manufacturer and must be used. No exceptions.

Tile/Stone Paver Support Grate: Color shall be black. Support Grate shall have a minimum 10-year manufacturer’s warranty.

Support Grate shall be DalLUX-STS as manufactured by Daldorado LLC. Ph: (888) 509-8128.

**Porcelain Pool Tile**

**Perimeter Handhold Tile**

Handhold tile shall be 100% dry pressed porcelain so it shall be resistant to impacts, acids, alkali and to expansion and contraction due to heat and cooling factors with a water absorption rate of no greater than 0.03%. The handhold tile shall be unglazed and have a surface slip resistant classification of no less than SRV P5=>44.

The Handhold tile shall be 12” in length and 4” (6”) in width with a handhold front profile of 1” and top profile of 2”.

Handhold tile colors to be selected by the Architect. Colors to be cobalt/cobalt; *(cobalt/white; back/white)*

Perimeter Handhold tile shall be DalLUX-TILE-D802 as manufactured by Daldorado LLC. Ph: (888) 509-8128. No known equal.

**Perimeter Finger Grip Tile**

Finger Grip tile shall be 100% dry pressed porcelain so it shall be resistant to impacts, acids, alkali and to expansion and contraction due to heat and cooling factors with a water absorption rate of no greater than 0.03%. The finger grip tile shall be unglazed and have a surface slip resistant classification of no less than SRV P5=>44.

The Finger Grip tile shall be 10” in length and 5” in width with a finger grip front profile in a dark contrasting color.

Finger Grip tile colors to be selected by the Architect. Colors to be cobalt/white, *(cobalt/bone; black/white).*

Perimeter Finger Grip tile shall be DalLUX-TILE-FG-05 as manufactured by Daldorado LLC. Ph: (888) 509-8128. Or approved equal.

**Perimeter Anti-Slip Tile**

Anti-Slip flat perimeter bond beam tile shall be 100% dry pressed porcelain so it shall be resistant to impacts, acids, alkali and to expansion and contraction due to heat and cooling factors with a water absorption rate of no greater than 0.03%. The anti-slip flat tile shall be unglazed and have a surface slip resistant classification of no less than SRV P5=>44.

The anti-slip flat tile shall be 10” in length and 5” in width.

Anti-slip tile color to be selected by the Architect. Color to be white, *(bone).*

Anti-Slip flat tile shall be DalLUX-TILE-AS-05 as manufactured by Daldorado LLC. Ph: (888) 509-8128. Or approved equal.

**(ADDITONAL NOTES TO SPECIFIER)**

**Information required in other Sections in the Project Specifications are as follow:**

**SUBMITTAL Documents for Daldorado Product**

* Certifications support the QUALITY of a product, ANSI/NSF/CAN 50-2020, STRENGTH of a product, SLIP RESISTANCE of a product.
* Certifications support the SAFETY of a product, ANSI/APSP/ICC-16 2017 (PA) 2021 for finger and limb entrapment, hair entrapment, strength, point load and pull strength.

If, as a designer, or customer, you require a **QUALITY** product then specify and request the appropriate Laboratory Testing and Certifications for each specified product to be submitted during the submittal process.

Daldorado Submittal and Certification documents can be easily obtained and downloaded from the Daldorado LLC website at: [www.daldorado.com](http://www.daldorado.com)

**WARRANTY and CERTIFICATIONS for Daldorado Product**

* Warranty information supports the manufacturer’s warranty on life expectancy of the product. Life expectancy on grate “25-year service life”; Life expectancy on sumps “life of the facility”; 10-year minimum manufacture’s warranty on product.
* Certifications support the QUALITY of a product, NSF/ANSI/CAN 50-2020, STRENGTH of a product, SLIP RESISTANCE testing of a product.

If, as a designer, or customer, you require a QUALITY product then request the appropriate Laboratory Testing Certifications for each product to be submitted during the submittal process.

Daldoraro Warranty information, Certifications and Submittal supporting documents can be easily obtained from the Daldorado LLC website at: [www.daldorado.com](http://www.daldorado.com)

**OPERATION and MAINTENANCE Manuals**

Please request and ensure that the Swimming Pool Contractor supply all documentation as supplied by the **SOFA** (sump, frame and grate) manufacturer and additional documentation as required by **APSP-16 2017** at completion and sign-off of the finished project to the Owner of the facility.

This documentation shall include but not be limited to General Certificate of Conformity (GCC) for each SOFA as required by 16 CFR Part 1450, this must include attachment points and installation of compliant fasteners as supplied by the SOFA manufacturer and as certified under the requirements of **APSP-16 2017.**

**SOFA (Suction Outlet Fitting Assembly) – Labelling and Documentation**

**MAIN DRAIN’s (SOFA’s) Installation Information** - (manufactured sump, frame, grate).

Each manufactured SOFA (Main Drain) cover/grate shall be supplied complete and packaged with a label made from materials designed to exceed the service life of the cover/grate, and be of sufficient size and format to be legibly filled-in by the contractor/installer at the time the cover/grate is installed.

Instructions shall be provided with the label requiring the cover/grate contractor/installer to fill-in the balance of the information required before giving the label to the pool owner.

The label instructions shall be permanently posted as near as feasible to the pump control, and that an additional copy of this information shall be provided to the pool owner, to be kept with other important pool related documents and/or included in the Operations and Maintenance Manuals at completion of construction.

**This Documentation shall include:**

* Manufacturers name.
* Cover/grate part number.
* Service life of the cover/grate.
* The certified Cover/grate flow rating(s), as they are permanently marked on the grate by the manufacturer.
* The certified flow rating specific to the Main Drain (SOFA) configuration and installed orientation (wall or floor) for cover/grates permanently marked “For Flow Ratings”.
* Location of the installed Main Drain (SOFA), such that it can be successfully identified in the future.
* The date the cover/grate was installed in the pool, where the month and year indicators on the label are easily identified in the field.

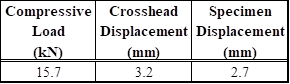
**Equivalent Markings - Field Built - Registered Design Professional Certified Main Drain (SOFA)**

The Registered Design Professional (RDP) that certifies a Main Drain (SOFA) shall either apply the applicable markings to the Main Drain (SOFA) in conformance with APSP-16 2017, Suction-Outlet Fitting Assemblies for Use in Pools, Spas, and Hot Tubs, Sections 8.1 through 8.3 and provide an information label in conformance with Section 8.4, or the equivalent information shall be posted on a permanently mounted sign, that is adjacent to the pool circulation pump(s).

When posting this sign adjacent the pump(s) is not feasible, the sign shall be posted in the equipment area and clearly indicate which pump(s) to which the Main Drain’s (SOFA’s) is installed.

**DalLUX TILE/STONE PAVER Support Grate PROJECT DESIGN REQUIREMENTS**

* + Above grade or elevated perimeter overflow swimming pools require that the ‘Building Structural Engineer’ design the swimming pool support structure (platform or vault) so that the maximum long term deflection shall not exceed 1/4” in the vault and/or supporting platform floor.
  + Tile or Stone Pavers – as specified by the architect, shall be designed and specified for approval in wet, barefoot areas in accordance with DIN 51097 ([Pendulum DCOF Test](https://safetydirectamerica.com/floor-friction-testing/pendulum-floor-test/) /CTIOA, HB 198/AS 4663-2013/AS 4586-2013, EN 13036-4, TS 15676, EN 14231, etc.), recommendations/guidelines of minimum wet Pendulum Test Slip Resistance, SRV slider 55, or equal as approved by the Ceramic Tile Institute of America.
  + DalLUX Stone Tile support grate is supplied either in 3 or 4 stone or tile supports, (4 or 5 slot openings), specify the number of openings according to water capture preferences.
  + Tile Contractor cutting and laying the tile or stone pavers shall be prequalified by the general contractor to be proficient in completing similar work on and around pool deck areas. Following the cutting of tile and stone pavers, all edges of each tile/stone paver must be bevelled on all sides, including ends, after cutting, so that they will not cause wet bare foot injury. Each tile or stone paver must be adhered to the tile/stone support grate with a PU based adhesive as recommended by the manufacture of the support grate.
  + Tile/Stone Paver Grate support load/deflection testing chart – at the onset of load/deflection details at the onset of cracking in ceramic tile. (15.7 kN equals 3,529 pounds force).



**END OF DOCUMENT**