

# ICC-ES Report

## ESR-2014

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Reissued 11/2018  
This report is subject to renewal 11/2019

EVALUATION SUBJECT:

## VIKING, TRILOGY, BLUE HAWAIIAN AND LIBERTY FIBERGLASS SWIMMING POOL AND SPA SHELLS

**DIVISION:**

13 00 00—SPECIAL CONSTRUCTION

**SECTION:**

13 11 13—BELOW-GRADE SWIMMING POOLS

Report Holder:

**LATHAM POOL PRODUCTS, INC. DBA VIKING POOLS**

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# ICC-ES Evaluation Report

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**DIVISION: 13 00 00—SPECIAL CONSTRUCTION**  
**Section: 13 11 13—Below-Grade Swimming Pools**

## REPORT HOLDER:

**LATHAM POOL PRODUCTS, INC. dba VIKING POOLS,  
BLUE HAWAIIAN POOLS, TRILOGY POOLS AND  
LIBERTY COMPOSITE POOLS**

[www.Latham.com](http://www.Latham.com)

## EVALUATION SUBJECT:

**VIKING, TRILOGY, BLUE HAWAIIAN AND LIBERTY  
FIBERGLASS SWIMMING POOL AND SPA SHELLS**

## 1.0 EVALUATION SCOPE

### Compliance with the following codes:

- 2018, 2015, 2012 & 2009 *International Building Code*® (IBC)
- 2018, 2015, 2012 & 2009 *International Residential Code*® (IRC)
- 2018 & 2015 *International Swimming Pool and Spa Code*® (ISPSA)
- 2012 & 2009 *International Plumbing Code*® (IPC)
- 2018, 2015 and 2012 *Uniform Swimming Pool, Spa & Hot Tub Code*® (USPSHTC)
- 2016, 2013 AND 2010 *California Residential Code*® (CRC)
- 2017 *City of Los Angeles Residential Code*® (LARC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)<sup>†</sup>

<sup>†</sup>The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

### Compliance with the following standards:

- APSP 5-2011, Standard for Residential Inground Swimming Pools
- APSP 3-2014, Standard for Permanently Installed Residential Spas and Swim Spas
- IAPMO/ANSI Z124.7-2013, Prefabricated Plastic Spa Shells
- AC274, ICC-ES Acceptance Criteria for In-ground Residential, Fiber-reinforced Plastic Swimming Pools and Permanently Installed Plastic Spas, dated December 2006 (editorially revised July 2017)

## 2.0 USES

The fiberglass pool and spa shells are for recreational use as swimming pools or spas in residential applications with water circulated through a filter in a closed system. The pools comply with APSP/ANSI-5 as Type O or Type I pools. The spas comply with APSP/ANSI-3 and IAPMO/ANSI Z124.7.

## 3.0 DESCRIPTION

### 3.1 General:

The fiberglass pool and spa shells consist of one-piece fiberglass construction shop- formed over a mold. The material is minimum 1/4-inch-thick (6.4 mm), fiberglass-reinforced plastic (FRP), composed of isophthalic resin, vinyl ester resin, fiberglass, and ceramic (ceramic in Viking Pools only). The surface finish is a neopentyl glycol gel coat.

The overall dimensions, depths and capacities are shown in Table 1 for pools, Table 2 for spas and Table 3 for models that are permitted to be installed up to 19 1/2 inches (495 mm) above ground.

**Notice:** The pool and spa shells are designed to remain full of water at all times. The shell may be damaged if the water level is allowed to drop below the skimmer. When appreciable drawdown is noticed or if it becomes necessary to drain the pool or spa, contact Viking Pools, LLC, or its dealers for instructions.

### 3.2 Aboveground Pools and Spas:

Models intended for installation up to 19 1/2 inches (495 mm) above ground, listed in Table 3, have vertical supports consisting of 1-inch-by-1 1/2-inch-by-36-inch-long (25 mm by 38 mm by 914 mm), Douglas fir, No. 2 wood members encapsulated in the FRP process at 4 1/2-foot (1337.2 mm) intervals.

## 4.0 INSTALLATION

### 4.1 General:

The swimming pool and spa shells must be permanently installed in-ground or, in the case of the models shown in Table 3, up to 19 1/2 inches (495 mm) above ground. All plumbing and electrical installations must comply with the relevant codes in effect at the construction site at the time of construction.

Subject to the code official's approval, the pool or spa shells may be installed without a soil investigation by a registered design professional, provided none of the following conditions is encountered at the site:

1. The existence of groundwater within the excavation, where the pool or spa floor will contact the soil at the time of installation.
2. The existence of an uncompacted fill in contact with any portion of the pool or spa shell.
3. The existence of any expansive-type soils.
4. The existence of any soil types with an angle of repose that will not support the walls of the excavation at desired slopes.

5. Danger to adjacent structures posed by the proposed pool or spa location.

If any of the above conditions is encountered, excavation must cease immediately. The specified conditions at the site must then be reviewed, and recommendations made, by a registered design professional. The code official must approve the registered design professional's recommendations; subject to the code official's approval, pools and spas may be installed in expansive-type soils in accordance with Section 4.2 before work is resumed.

The pool or spa excavation profile must coincide with the contours of the pool or spa. The overexcavation must be approximately 6 to 24 inches (152 to 610 mm) on the sides and ends. The overexcavation at the pool bottom must be a minimum of 3 inches (76 mm). The backfill for the pool or spa bottom must consist of a layer of bedding sand formed to match the pool or spa profile. This sand layer must be compacted using a manual tamper and water. The pool or spa shell must sit firmly on the sand and be within 1 inch (25.4 mm) of level. Simultaneous waterfill and sand backfill operations must then commence. The sand must be compacted with a tamper and water. The installer must ensure that the backfill level and water level are approximately the same throughout the filling procedure.

After completion of the backfill, the bond beam and decking must be installed in accordance with the manufacturer's published installation instructions, and approved by the code official.

#### 4.2 Expansive soils:

For installation of pools or spas in expansive soils, the following additional installation details must be followed subject to the code official's approval:

1. All surfaces adjacent to the pool or spas must be excavated to a depth of 12 inches (305 mm) beneath the pool bottom and 6 inches (152 mm) behind the horizontal pool walls.
2. Any soft or loose soils exposed by step 1 must be removed until exposed material is solid. If the soil is still soft and loose, the upper 6 inches (152 mm) of all horizontal excavation surfaces must be scarified and compacted with mechanical equipment. The compacted surfaces and the excavated wall surfaces must be maintained in a moist condition until the first lift of backfill or fill is placed against the surface. The term compaction implies any method necessary to consolidate the native and fill materials to keep the pool or structure from settling.
3. The excavated bottom area of the pool or spa must be backfilled with granular import material to approximately 6 inches (152 mm) below the bottom of the pool or spa, wetted and compacted.
4. The remaining 6 inches (152 mm) must be backfilled beneath the pool or spa and behind the pool walls with clean sand and compact. The pool or spa must be filled with water as backfilling progresses to a level equivalent to that of the backfill. The backfill must be placed in compacted layers of approximately 6 inches (152 mm) while a uniform height of backfill is maintained around the pool or spa.
5. Positive surface drainage away from the perimeter of the pool and surrounding deck is required and critical to installations in highly expansive soils. Surface area drains and surface drainage swales or subdrains must be placed as needed to prevent ponding or saturation of the soil around the perimeter and vicinity of the pool to prevent excessive shrink-swell or volume changes in the soil.

#### 4.3 Aboveground Pools and Spas:

Models shown in Table 3 may be installed up to 19<sup>1</sup>/<sub>2</sub> inches (495 mm) above ground. These pool and spa shells may be placed with or without concrete or wood decking. Unless the elevated external portions of the units are protected from sunlight by soil berms, decking, etc., these portions must be coated with a UV-inhibiting opaque paint that is compatible with the laminate.

#### 5.0 CONDITIONS OF USE

The pool and spa shells described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The pool and spa shells must be constructed and installed in accordance with this report and the manufacturer's published installation instructions. In the event of conflict, this report governs.
- 5.2 Electrical and plumbing installations must comply with the relevant codes in effect at the construction site at the time of construction.
- 5.3 Clearances of the pools and spas from slopes set forth in IBC Section 1805.3, CRC Section R403.1.7, IRC Section R403.1.7 or UBC Section 1805.3.3 must be observed.
- 5.4 A barrier must be installed in accordance with IBC Section 3109, ISPSC Section 305, IRC Section AG105, or UBC Appendix Chapter 4, as applicable.
- 5.5 Slip resistance is outside the scope of this evaluation report. Reports of slip resistance tests that demonstrate compliance with Section 8.1 of APSP/ANSI-5 for swimming pools, or Sections 5.4.1, 5.6.3.2 and 5.6.4.4 of APSP/ANSI-3 for spas, shall be submitted for approval by the code official.
- 5.6 Diving equipment may only be installed on Type I pools and must meet the minimum requirements of, and be installed in accordance with, Section 5.8 of APSP/ANSI-5.
- 5.7 Pools located in flood hazard areas established in accordance with Table R301.2(1) of the IRC must comply with Sections AG101.2 and AG103.3 of the IRC, Section AG101.2 of CRC or Section 304 of the ISPSC.
- 5.8 Suction outlets must be designed and installed in accordance with IBC Section 3109.5, CRC Section AG106, ISPSC Section 310 and IRC Section AG106.1.
- 5.9 The pool and spa shells are fabricated by Viking Pools Inc. at their Williams, California; Midland, Texas; Jane Lew, West Virginia; Rockingham, North Carolina; Fayetteville, Tennessee; Breaux Bridge, Louisiana; Dix, Illinois; or the Zephyrhills, Florida, facilities, under a quality-control program with inspections by ICC-ES.

#### 6.0 IDENTIFICATION

- 6.1 The pool and spa shells are identified by the following information imprinted on the top step of the pool or spa shell: manufacturer's name (Latham Pool Products, Inc. dba Viking Pools) and address, pool or spa shell designation, a coded serial number and the evaluation report number (ESR-2014).
- 6.2 A permanent sign, bearing the following statement, must be attached to the pumping equipment:

**Notice:** *The pool and spa shells are designed to remain full of water at all times. The shell may be damaged if the water level is allowed to drop below the skimmer. When appreciable draw-down is noticed or if it become necessary to drain the pool or spa, contact Viking Pool or its dealers for instructions.*

- 6.3** A permanent label must be attached adjacent to the above sign indicating the Viking Pools, LLC, distributor's name, address and telephone number.
- 6.4** The report holder's contact information is the following:

**LATHAM POOL PRODUCTS, INC. dba VIKING  
POOLS, BLUE HAWAIIAN POOLS, TRILOGY  
POOLS AND LIBERTY COMPOSITE POOLS  
176 VIKING DRIVE  
JANE LEW, WEST VIRGINIA 26378  
(304) 884-6954  
[www.Latham.com](http://www.Latham.com)**

TABLE 1—POOLS

SERIES	LENGTH (ft-in)	WIDTH (ft-in)	MAX DEPTH (ft-in)	CAPACITY (gal)	POOL TYPE
AC	39'	16'	6'	16,700	Type 0
AL	26'	12'	5'6"	7,000	Type 0
AP	38'	16'	5'10"	17,500	Type 0
ARU	22'	11'	5'	5,200	Type 0
AT	40'	16'	8'	21,000	Type 1
B	25'5"	11'10"	4'6"	8,100	Type 0
BAR	38'	16'	7'	18,500	Type 0
BFF	25'7"	12'	6'	9,000	Type 0
BH38	18'	11'	4'-1"	3,600	Type 0
BHBA	30'	14'-5"	5'-10"	9,500	Type 0
BHBI	34'	15'	6'-6"	13,000	Type 0
BHBY	29'-10"	14'-6"	6'-6"	10,000	Type 0
BHCC	32'-10"	13'-6"	6'-2"	11,300	Type 0
BHCY	19'-11"	10'	5'	4,500	Type 0
BHGI	42'	16'	7'	19,300	Type 0
BHIB	29'-3"	12'-5"	5'-6"	6,600	Type 0
BHOB	41'	16'	7'	23,000	Type 0
BHPL	24'	11'	5'-6"	5,000	Type 0
BHPR	30'	14'	6'-7"	10,000	Type 0
BHSC	24'	12'	6'-4"	7,000	Type 0
BHSH	26'	12'	6'	7,000	Type 0
BHSR	24'	11'	5'-6"	6,000	Type 0
BHSW	34'	15'	6'-10"	14,000	Type 0
BHSY	32'	14'	5'-5"	10,000	Type 0
BHTB	34'	15'	5'-6"	12,000	Type 0
BHTC	27'-6"	11'-7"	5'-1"	6,800	Type 0
BHVI	28'	12'	6'-10"	8,000	Type 0
BKD	23'11"	12'3"	5'	6,000	Type 0
BL	38' to 45'	11'10"	4'6"	11,200 to 14,400	Type 0
BN	40'	16'	8'	22,000	Type 1
BP	38'	15'8"	5'11"	17,000	Type 0
BPD	38'	15'8"	8'	20,000	Type 1
CA	31'	14'	6'	12,000	Type 0
CC	35'	16'	6'6"	14,000	Type 0
CCX	35'	16'	6'-6"	11,500	Type 0
CD	33'	16'	5'5"	14,000	Type 0
CL	30'	14'	6'	12,500	Type 0
CM	23' 11"	12'3"	5'	6,000	Type 0
CO	40'	16'	7'	18,000	Type 0
CP	31'	12'	5'	10'500	Type 0
CR	39'7"	15'10"	8'	19,500	Type 1
CRBJ	40'	16'	7'	19,000	Type 0
CRBL	32'	14'	6'	12,000	Type 0
CRBM	28'	12'	5'	7,000	Type 0
CRDFJ	38'	16'	7'	17,600	Type 0
CRDFL	31'	14'	6'	11,000	Type 0
CRDFM	24'	12'	5'6"	6,000	Type 0
CRDJ	40'	16'	7'	19,000	Type 0
CRDL	30'	14'	5'6"	10,000	Type 0
CRDM	25'	12'	5'	6,000	Type 0
CRSBJ	38'	16'	7'	19,000	Type 0
CRSBL	30'	14'	6'	11,300	Type 0
CRSBM	24'	12'	5'6"	6,700	Type 0
CRSGJ	34'	16'	6'6"	13,800	Type 0
CRSGL	30'	14'	6'	9,700	Type 0
CRSGM	23'	12'	5'6"	5,500	Type 0
CRSGS	20'	10'	4'6"	3,400	Type 0
CRUD	26'	12'	4'7"	4,400	Type 0
CRUJ	35'	16'	6'6"	11,600	Type 0
CRUL	30'	14'	6'	8,000	Type 0
CRUM	26'	12'	5'	5,300	Type 0
CRUS	20'	10'	4'6"	3,000	Type 0

TABLE 1—POOLS (Continued)

SERIES	LENGTH (ft-in)	WIDTH (ft-in)	MAX DEPTH (ft-in)	CAPACITY (gal)	POOL TYPE
CSA	34'	15'	6'	13,000	Type 0
CTL	16'	10'	4'	2,450	Type 0
FDM	30'	14'	6'	12,000	Type 0
FF	30'	13'8"	6'	12,000	Type 0
FJI	34'	15'	6'	12,000	Type 0
FP	25'1"	12'	5'5"	6,000	Type 0
FSP	25'	12'	5' 6"	8,700	Type 0
FR12	26'	12'	5'8"	7,600	Type 0
FR14	30'	14'	6'	11,200	Type 0
FR16	35'	16'	6'6"	15,250	Type 0
GB	33'9"	14'8"	6'6"	14,300	Type 0
GC	39'7"	15'10"	7'11"	19,600	Type 1
GS	34'8"	15'7"	5'10"	15,000	Type 0
HMT	34'	15'	6'	12,000	Type 0
JV	26'9"	12'	5'5"	6,800	Type 0
K	33'9"	14'8"	8'2"	16,000	Type 0
KL	30'	14'	5'11"	12,800	Type 0
L	31'6"	14'	7'	13,700	Type 0
LBBST	15'	12'	4'	2,500	Type 0
LBCST	21'	15'4"	4'-4"	12,000	Type 0
LCN	30'	14'	5'9"	10,800	Type 0
LD	19'9"	9'10"	5'	3,750	Type 0
LG	30'	14'	6'	10,000	Type 0
LGX	30'	14'	6'	9,000	Type 0
LN	36'	16'	7'	18,000	Type 0
MC	23'8"	12'	5'5"	6,000	Type 0
MFF	14'3"	8'7"	4'	1,700	Type 0
MK	27'7"	14'6"	5'10"	10,000	Type 0
MLL	15'10"	8'6"	4'	2,200	Type 0
MP	14'6"	9'6"	4'	2,500	Type 0
MR	40'	16'	6'6"	17,000	Type 0
MT	35'	14'	5'7"	12,400	Type 0
MTK	16'	9'3"	4'	2,300	Type 0
NB	21'	15' 4"	4' 4"	7,000	Type 0
NT	34'8"	15'7"	5'10"	14,500	Type 0
OB	40'	16'	5'8"	18,900	Type 0
PRT	23'	12'	5'5"	6,700	Type 0
PS	40'	16'	7'	17,500	Type 0
RP	30'	14'	5'11"	10,000	Type 0
RS	30'	14'	6'6"	12,500	Type 0
RYBR	33'8"	16'	5'4"	11,500	Type 0
RYDC	39'6"	16'	6'	15,500	Type 0
RYDKS	33'4"	15'10"	6'	10,000	Type 0
RYJW	32'10"	14'7"	6"	11,000	Type 0
RYNB	30'	14'3"	5'6"	8,300	Type 0
RYQN	41'	15'	6'	13,500	Type 0
RYRM	27'6"	11'10"	5'	5,000	Type 0
RYSPB	34'5"	15'11"	4'4"	10,000	Type 0
SFF	25'	11'10"	5'6"	9,000	Type 0
SH	35'	14'	5'10"	10,500	Type 0
SK	19'9"	9'10"	5'	2,750	Type 0
SL	39'	7'7"	4'	6,500	Type 0
SP	20'	10'11"	5'	3,600	Type 0
SR	39'	16'	6'	16,300	Type 0
ST	27'7"	14'6"	5'10"	10,000	Type 0
TCAS	36'	16'	5'4"	16,000	Type 0
TCOR	25'4"	12'	5'5"	5,300	Type 0
TEQU	34'8"	15'4"	5'6"	9,000	Type 0
TEU	28'	14'	5'4"	9,200	Type 0
TEUT	28'	14'	5'4"	9,400	Type 0
TGEM	32'7"	16'	5'4"	9,000	Type 0
TGEN	40'2"	16'	8'6"	17,000	Type 1

TABLE 1—POOLS (Continued)

SERIES	LENGTH (ft-in)	WIDTH (ft-in)	MAX DEPTH (ft-in)	CAPACITY (gal)	POOL TYPE
THEL	24'	12'	5'4"	7,500	Type 0
THYSB	43'8"	16'	5'4"	18,000	Type 0
THYSS	43'8"	16'	5'4"	17,700	Type 0
THYST	43'8"	16'	5'4"	17,300	Type 0
TMRC	20'	8'	5'3"	3,800	Type 0
TN	30'	14'	5'11"	13,500	Type 0
TND	44'	16'	7'	19,300	Type 0
TPIC	24'-1"	12'-2"	5'-4"	5,600	Type 0
TRGSB	43'-8"	16'	5'-4"	18,500	Type 0
TRGSS	43'-8"	16'	5'-4"	17,800	Type 0
TRGST	43'-8"	16'	5'-4"	17,400	Type 0
TRMSB	39'-2"	16'	5'-4"	13,400	Type 0
TRMSBT	39'-2"	16'	5'-4"	14,300	Type 0
TRMSS	39'-2"	16'	5'-4"	13,800	Type 0
TRMST	39'-2"	16'	5'-4"	13,300	Type 0
TSOL	20'-8"	11'-9"	5'-4"	5,100	Type 0
TSYN	40'-2"	16'	6'-3"	16,000	Type 0
V	33'	14'	5'4"	11,700	Type 0
HZA	18'	8'6"	6'	4,500	Type 0
HZB	18'	8'6"	6'	4,300	Type 0
HZC	18'	8'6"	5'6"	4,050	Type 0
HZD	18'	8'6"	5'6"	3,850	Type 0
HZDXL	18'	8'6"	5'	3,000	Type 0
HZE	18'	8'6"	5'	3,600	Type 0
HZF	18'	8'6"	5'	3,400	Type 0
HZG	9'	8'6"	4'6"	1,200	Type 0
HZH	9'	8'6"	5'	1,350	Type 0
WL	26'	16'	5'	10,500	Type 0

For **SI**: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 gallon = 3.785 L.

TABLE 2—SPAS

SERIES	SHAPE	DIAMETER OR WIDTH (ft-in)	DEPTH (ft-in)	CAPACITY (gal)
BOS	Octagonal	8'4"	3'	475
BOSSP	Octagonal	8'4"	1'6"	270
BOSSW	Octagonal	8'4"	3'	475
CS	Octagonal	8' x 12'5"	3'	700
CSSP	Octagonal	8' x 12'5"	1'6"	430
CSSW	Octagonal	8' x 12'5"	3'	700
LOS	Dodecagon	7'6"	3'	450
LOSSP	Dodecagon	7'6"	1'6"	220
LOSSW	Dodecagon	7'6"	3'	450
LRS	Round	7'	3'	420
LRSSP	Round	7'	1'6"	180
LRSSW	Round	7'	3'	420
M	Round	10'	3'4"	550
MSP	Round	10'	1'6"	325
MSW	Round	10'	3'4"	550
RG	Freeform	8' x 10'	3'4"	600
RGSP	Freeform	8' x 10'	1'6"	470
RGSW	Freeform	8' x 10'	3'4"	600
RY	Rectangle	8' x 10'	3'4"	600
RYSP	Rectangle	8' x 10'	1'6"	330
RYSW	Rectangle	8' x 10'	3'4"	600
RS	Round	5'8"	3'0"	275
RSSW	Round	5'8"	3'0"	275
RSSP	Round	5'8"	1'6"	150
OS	Octagonal	6'0"	3'0"	375
OSSW	Octagonal	6'0"	3'0"	375
OSSP	Octagonal	6'0"	1'6"	125
SPKM	Kidney	7' x 10'	3'	350
SS	Square	6'6'	3'0"	295
SSSW	Square	6'6'	3'0"	295
SSSP	Square	6'6'	1'6"	150
TMRD	Square	7'-9"	2'-11"	675
TNEP	Round	8'	2'-11"	575

For **SI**: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 gallon = 3.785 L.

TABLE 3—ABOVEGROUND POOLS AND SPAS (19½ INCHES MAXIMUM ABOVE GRADE)

POOLS		SPAS			
AL	MLL	BOS	LRS	RG	SPKM
ARU	MTK	BOSSP	LRSSP	RGSP	SS
B	SK	BOSSW	LRSSW	RGSW	SSSP
BFF	SL	CS	M	RS	SSSW
BKD	SP	CSSP	MSP	RSSP	
CTL		CSSW	MSW	RSSW	
FP		LOS	OS	RY	
MFF		LOSSP	OSSP	RYSP	
MK		LOSSW	OSSW	RYSW	