

➤ Nonresidential, Single-family, and Multifamily Pool and Spa Heating



What's Included:

This fact sheet covers swimming pool and spa requirements from California's 2025 Building Energy Efficiency Standards (Title 24, Part 6 or Energy Code) and applicable Appliance Efficiency Regulations (Title 20).

How Does this Fact Sheet Apply to Your Project?

Use this fact sheet to answer the following questions about single-family, multifamily, hotel, motel, or nonresidential requirements for pool or spa installations, Alterations, and Repairs. These requirements are mandatory and set the minimum requirements that must be met (when applicable). The Performance Approach cannot be used to gain flexibility.

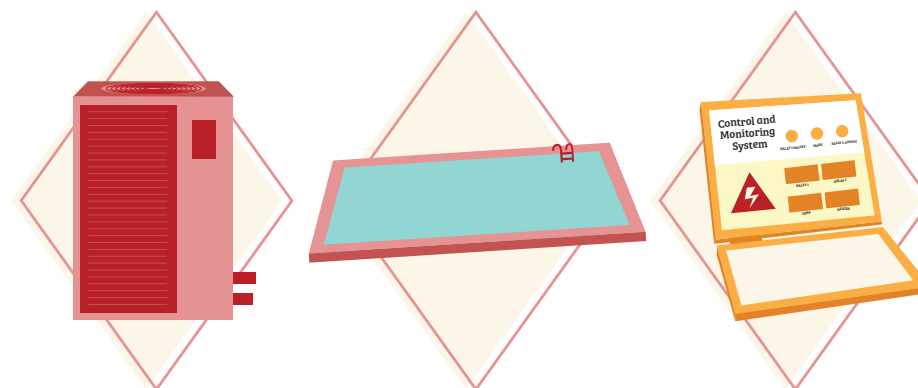
1. What requirements does your project need to meet to comply with the Energy Code?
2. What are the certification requirements for pool and spa equipment?
3. How should you document your project's compliance?

What's New:

New heating source, sizing, and controls requirements for newly installed pool and spa heating systems.

Table of Contents

Why Does the Energy Code Have Requirements for These Systems?	2
Project Scope Triggers	3
Key Terms	4
Applying the Pool and Spa Requirements	5
Pool and Spa Heating Sources and Sizing	7
Compliance Forms for Pool and Spas	15
For More Information	17



Why Does the Energy Code Have Requirements for These Systems?

Pools and spas use a lot of energy, especially their circulation pumps and heating systems.

The 2025 Energy Code adds mandatory requirements for pool and spa heating systems in §110.4 that apply to all occupancies (with some exceptions) in order to reduce wasteful and unnecessary energy use for heating pools and spas. Options include solar thermal heating systems and heat pump pool heating systems. Gas or electric resistance cannot be used as a primary heating system, however, it can be used for supplemental heating or combined with onsite renewable energy systems.

Solar thermal pool heating systems have a demonstrated record of more than 40 years of performance in California, are estimated to be cost-effective, and are expected to save \$179 million in system costs over 30 years across new pool projects in 2026.¹

Heat pump pool heating systems are also cost-effective in both residential and nonresidential new projects across all Climate Zones² and are estimated to operate at a Coefficient of Performance (COP) of 5.5, which is even more efficient than heat pumps used for space conditioning and domestic water heating systems.

Existing Pool and Spa Requirements

In addition to these new 2025 Energy Code requirements, several other elements of pools and spas are regulated in California.

- ✦ Newly installed dedicated-purpose pool pumps (DPPPs) manufactured after July 19, 2021, need to meet the U.S. Department of Energy (DOE) appliance standards, supported in the California Appliance Efficiency Standards (Title 20). See the [Title 20 DPPP Fact Sheet](#).
- ✦ Replacement dedicated-purpose pool pump motors (RDPPPM) that are between 0 and 5 total horsepower (THP) manufactured after July 19, 2021, must meet Title 20. See the [Title 20 RDPPPM Fact Sheet](#).
 - » Pool pump motors with THP less than 0.5 THP and between 1.15 THP and 5 THP manufactured after September 29, 2025, must meet [U.S. DOE appliance standards](#).
 - » Pool pump motors with a THP greater than 0.5 THP and less than 1.15 THP manufactured after September 28, 2027, must meet U.S. DOE appliance standards.
- ✦ Newly installed and replacement pool controls manufactured after September 29, 2025, must meet the Flexible Demand Appliance Standards. See the [FDAS for Pool Controls – Pool Professionals Fact Sheet](#).
- ✦ Newly installed, or newly heated, public pools and spas are required to meet the requirements of §§110.4 and 110.5 of the Energy Code. This includes pools or spas that serve a multifamily building and are open to all residents, per §160.7(b).
- ✦ Newly installed, or newly heated, residential pools and spas (serving single-family, or only one dwelling unit of multifamily buildings per §160.7(b)) are required to meet additional requirements supported in §150.0(p) of the Energy Code.

¹2025 Final CASE Report Swimming Pool and Spa Heating, p. 80 and 84, October 2023

²Ibid, p. 161

Does Your Pool or Spa Project Scope Trigger the Energy Code or Appliance Efficiency Standards?

Table 1: Project Scope Triggers

Project Scope	Project Type	Code Triggered?	Applicable Sections
Heating a new pool or spa	New Construction	YES	Title 24, Part 6: Meet applicable requirements of §110.4 Title 20: Confirm pool and spa pump(s) and heater(s) used are certified to MAEDbS before installing
Adding a spa to an existing unheated pool	New Construction	YES	Title 24, Part 6: Meet spa applicable requirements of §110.4 Title 20: Confirm heater used is certified to MAEDbS before installing
Heating an existing pool or spa for the first time	Alteration	YES	Title 24, Part 6: “Heating Source” requirements of §110.4(c) and cover requirements of §110.4(b)3 (if applicable) Title 20: Confirm pool or spa heater used is certified to MAEDbS before installing
Replacing a residential or public dedicated-purpose pool pump	Alteration	YES	Title 24, Part 6: N/A Title 20: Confirm pool pump used is certified to MAEDbS before installing
Replacing a pool or spa cover on an existing heated pool or spa using a gas or electric heating source	Alteration	YES	Title 24, Part 6: Cover requirements of §110.4(b)3 Title 20: N/A
Replacing piping for an existing pool or spa	Alteration	YES	Title 24, Part 6: Piping requirements of §110.4(b)2 and for Residential Pools §150.0(p)2 Title 20: N/A
Adding or replacing time switches for an existing pool	Alteration	YES	Title 24, Part 6: Time switch requirements of §110.4(b)4 Title 20: N/A
Replacing heating components of an existing pool or spa	Repair	No	Title 24, Part 6: N/A Title 20: N/A
Adding a solar system to an existing pool or spa	Repair	No	Title 24, Part 6: N/A Title 20: N/A

Note: New Construction and Alteration project scopes are typically scopes of work that will trigger requirements of Title 24, Part 6, Title 20, or both. Repairs do not trigger these requirements.

Key Terms

Pool Pump, Dedicated-purpose refers to a category of pumps designed specifically for various pool related functions. This includes self-priming pool filter pumps, non-self-priming pool filter pumps, waterfall pumps, pressure cleaner booster pumps, integral sand-filter pool pumps, integral-cartridge filter pool pumps, storable electric spa pumps, and rigid electric spa pumps, as defined by [Title 20 §1602\(g\)\(4\)](#).

Joint Appendices is a supporting document for the Building Energy Efficiency Standards adopted by the California Energy Commission (CEC).

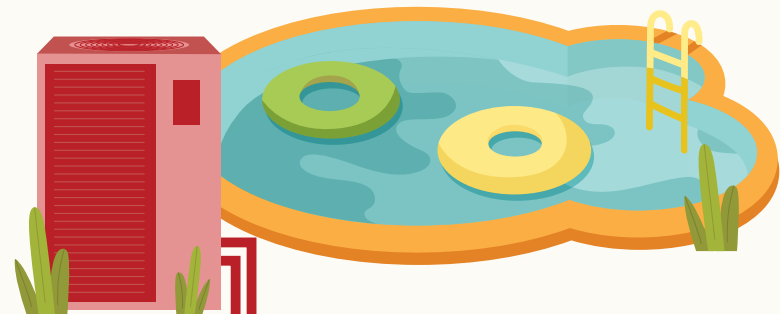
Pools is any structure or product intended for swimming, bathing, or wading; designed and manufactured to be connected to a circulation system; and not intended to be drained and filled with each use. This includes, but is not limited to, inground, aboveground, and on ground pools; and wading pools.

Pool, Public is a pool other than a residential pool, that is intended to be used for swimming or bathing and is operated by an owner, lessee, operator, licensee, or concessionaire, regardless of whether a fee is charged for use. Public pools include pools installed in private settings such as multifamily residential buildings or hotels that are available exclusively for use by tenants or guests.

Pools, Residential is a pool intended for use that is accessory to a residential setting and available only to the household and its guests, and with specifications as defined within the scope of either ANSI/APSP/ICC-4, 2012 (R2022) or ANSI/APSP/ICC-5, 2011 (R2022).

Portable Electric Spa is a factory-built electric spa or hot tub, supplied with equipment for heating and circulating water at the time of sale or sold separately for subsequent attachment, as defined by [Title 20 §1602\(g\)\(2\)](#).

Spa is a vessel that contains heated water in which humans can immerse themselves, is not a pool, and is not a bathtub.



What Needs to be Considered When Applying the Pool and Spa Requirements



1. Does the Project Scope Include Heating a New Pool or Spa, or Adding Heating for the First Time to an Existing Pool or Spa?

Yes — Meet the requirements of:

- ✦ §110.4(a) "Certification by Manufacturers" for heaters and pumps including efficiency, on-off switch, and instructions
 - » If a **residential** pool or spa, meet the additional requirements of "Pump sizing and flow rate" per §150.0(p)1, "Filters" per §150.0(p)3, and "Valves" per §150.0(p)4
- ✦ §110.4(b)1 "Installation of Heating Equipment" for heating equipment standards
- ✦ §110.4(b)2 "Piping" for newly installed piping
 - » If a **residential** pool or spa, meet the additional "System Piping" requirements of §150.0(p)2
- ✦ §110.4(b)3 "Covers" when using electric or gas heating system
- ✦ §110.4(b)4 "Directional inlets and time switches for pools" for a heated pool
- ✦ §110.4(c) "Heating Source Sizing". Choose between one of the following:
 - » **Solar collector** meeting sizing requirements of §110.4(c)1 with any supplemental heating type
 - Meet requirements for "non-continuously burning pilot light," if using supplemental gas heating system, per §110.5(c)
 - Meet the Controls for Heat Pump Pool Heaters with Supplemental Heating per §110.4(d) if using heat pump
 - » **Heat pump as primary heating source** combined with any supplemental heating type meeting §110.4(c)2
 - Meet the Controls for Heat Pump Pool Heaters with Supplemental Heating per §110.4(d)
 - » Meet requirements for "non-continuously burning pilot light," if using supplemental gas heating system, per §110.5(c)
 - » Heating system with at least **60% annual heating energy from on-site renewable system** (such as photovoltaics (PV) system) meeting §110.4(c)3
 - Meet requirements for "non-continuously burning pilot light," if using gas heating system, per §110.5(c)
 - » Or combination of solar and heat pump heating system with NO supplemental heating source per §110.4(c)4
 - Meet the Controls for Heat Pump Pool Heaters with Supplemental Heating per §110.4(d) if using heat pump

Exceptions:

- ✦ **Spas:** Portable electric spas compliant with Title 20; Alterations to existing spas; Spas solely heated by solar heating systems without any backup heater; Permanent spas being added to existing buildings when gas is available; New spas in which there is inadequate Solar Access Roof Area (SARA)
- ✦ **Pools:** Alterations to existing heated pools; Pools solely heated by solar heating systems without any backup heater

Move on to questions 2 and 3! ➔



2.

Does the project scope include replacing a pool pump on an existing public or residential pool?

Yes — Meet the **dedicated-purpose pool pump requirements of Title 20.**



3.

Does the project scope include replacing or adding a pool control on an existing public or residential pool?

Yes — Meet the **Flexible Demand Appliance Standard requirements.**



No —

The requirements for heated pools and spas will not apply.

If making repairs to an existing heating system, the project is not subject to the Energy Code or the Appliance Standards.

The project may need to show compliance with CALGreen (Title 24, Part 11) if not required to meet the Energy Code due to local ordinance adoption. Check with localenergycodes.com.

Pool and Spa Heating Sources and Sizing

› Section 110.4(c)

The 2025 Energy Code allows for five different options for pool and spa heating systems, applicable to both new pools and spas and existing pools and spas with new heating systems. Compliant choices include heat pump pool heating **and/or** solar heating systems. Gas or electric resistance heating systems can be used, but only if combined with on-site renewable energy systems or used as a supplemental heat source. Options include:

1. A **solar** pool heating system:
 - » Nonresidential and multifamily public pools and spas with solar collector surface area of at least 65% of the pool and spa surface area
 - » Single-family or multifamily residential pools and spas with solar collector surface area of at least 60% of the pool and spa surface area
2. A **heat pump** pool heater sized to manufacturer recommendations, or the sizing guidelines in Joint Appendix (JA) 16.3 if manufacturer provides no guidance on sizing
3. A heating system **derived from at least 60% on-site renewable sources** on an annual basis. JA16.4 defines the process for documenting compliance with this option, of which a licensed mechanical engineer is required to document that the heating system meets the 60% threshold which is submitted with the Certificate of Installation compliance form provided by the installing contractor.
4. A **combination of solar and heat pump** with no supplemental heat source.
5. **Another heating system** determined by the Executive Director at the CEC to use no more energy than Options 1–4 above. This allows for technology not supported above to be considered as alternatives during a code cycle by the CEC. See the CEC “[Blueprint](#)” quarterly newsletter throughout a code cycle to see if any have been adopted.

Exceptions:

- ✦ Portable electric spas compliant with [Title 20](#)
- ✦ Alterations to existing heated pools and spas
- ✦ Pools and spas solely heated by solar heating systems without any backup heater
- ✦ Permanent spa applications in existing buildings with gas availability
- ✦ Permanent spa applications where there is inadequate Solar Access Roof Area (SARA) to allow for a spa heating system to be installed must be supported with a solar assessment report using a [CEC-approved solar assessment tool](#).



See our “2025 Single-family and Low-rise Multifamily Solar and Battery Systems” for more information about applying SARA.

Additional Resources for Solar and Heat Pump Pool Heaters

Check the U.S. DOE’s [Solar Swimming Pool Heater webpage](#) and the U.S. DOE’s [Heat Pump Swimming Pool Heaters webpage](#) to understand:

- ✦ Why you should use these systems for water heating
- ✦ How these systems work
- ✦ How to properly select, evaluate, and size a system
- ✦ How to locate a solar collector
- ✦ How to determine the efficiency of a system
- ✦ How to compare system costs
- ✦ How to ensure proper installation and maintenance

Pilot Lights

› Section 110.5(c)–(d)

Per §§110.5(c) and 110.5(d) “Natural Gas Central Furnaces, Cooking Equipment, Pool and Spa Heaters, and Fireplaces: Pilot Lights Prohibited,” if natural gas heaters are used, a continuously burning pilot light is not allowed.

Controls for Heat Pump Pool Heaters with Supplemental Heating

› Section 110.4(d)

- ✦ When supplementary heating is used, the supplementary heater must not operate when the heating load can be met by the heat pump pool heater (HPPH) alone.
- ✦ The HPPH cut-on temperature is to be a higher temperature than the supplemental heater cut-on temperature (i.e., before supplemental heat is called for).
- ✦ The HPPH cut-off temperature is to be higher than the supplemental heater cut-off temperature (i.e., supplemental heat is only used when pool temperature falls lower than the HPPH can handle).

Certification of Pool and Spa Heaters

› Section 110.4(a)

Pool and spa heaters must be certified by the manufacturer as meeting federal and state minimum efficiency standards as is required for all appliances per §110.1 “Mandatory Requirements for Appliances.”

Certification of Pool Pumps and Pool Pump Motors

› Sections 110.4(a) and 150.0(p)1A

- ✦ **Dedicated-purpose pool pumps** with a hydraulic horsepower (hhp) less than 2.5 hhp are subject to federal appliance efficiency standards which can be found in [Title 20 Section 1605.1\(g\)\(7\)](#).
- ✦ **Replacement dedicated-purpose pool pump motors** that are between 0 and 5 THP are subject to California’s Appliance Efficiency Regulations (Title 20) which can be found in [Title 20 §1605.3\(g\)\(6\)](#).
- ✦ Pool controls are subject to California Flexible Demand Appliance Standards which can be found in [Title 20 §§1690-1697](#).

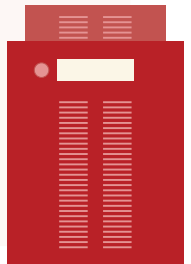
Compliant products can be found in the [Modernized Appliance Efficiency Database System \(MAEDbS\)](#) using the advanced search function and selecting “Pool Products.”



Are Gas Pool and Spa Heating Systems Allowed?

Gas heaters are allowed, as long as they are **not** the primary heating system, **and** they meet one of the following options:

- ✦ Paired with a solar pool heating system with a collector area at least 60% of a residential pool surface area or 65% of a public pool surface area
- ✦ Paired with a heat pump pool heater
- ✦ Paired with an on-site renewable source certified by a mechanical engineer to derive at least 60% of the pool or spa’s annual energy use



Installation of Pool and Spa Systems

› Section 110.4(b)

- ✦ **Heating equipment** must meet standards in Table 110.4-A
 - » **Electric Resistance:** UL 1261
 - » **Gas-fired:** ANSI Z21.556/CSA 4.7a
 - » **Heat Pump:** AHRI 1160 plus either CSA C22.2 No 236 or UL 1995 or UL/CSA 60335-2-40³
 - » **Solar:** ICC/APSP 902/SRCC 400 for solar pool heaters; ICC 901/SRCC 100 for solar collectors
- ✦ **Heating equipment must have a readily accessible on/off switch** mounted to the outside of the heater that allows the heater to be turned off without adjusting thermostat settings
- ✦ **Heating equipment must have permanent, easily readable instructions** that are waterproof, including the energy efficiency rating and instructions for the energy efficient operation of the pool or spa heater.
- ✦ **Piping** must include one of the following to allow for the future addition of solar heating equipment, if a solar system is not being installed:
 - » At least 18" of horizontal or vertical pipe between the filter and heater, or
 - » At least 18" of dedicated suction and return lines, or
 - » Install built-in or built-up connections
- ✦ **Pool cover** to be installed for pools with gas or electric (including heat pump) pool heaters to retain heat
- ✦ **Directional inlets for pools** to adequately mix pool water
- ✦ **Time switches for pools** (or similar) that are permanently installed to allow pool water recirculation pumps to be set to run only during utility electric off-peak demand periods, and for the minimum time necessary to maintain the water in the condition required by applicable public health standards

³SRCC 100 and SRCC 400 standards have been used in the Energy Code for solar thermal panels that are part of domestic hot water systems for many years. SRCC 100 refers to the rating for individual solar thermal collectors, while SRCC 400 applies to complete solar thermal heating systems.

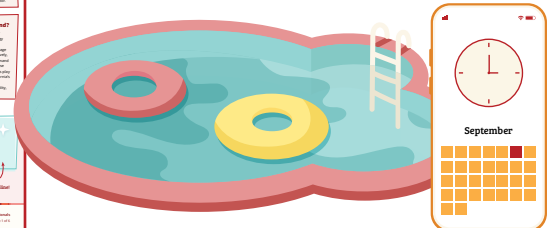


CALGreen (Title 24, Part 11) Pool and Spa Heating

- ✦ The voluntary measures in Appendices A4 (Residential) and A5 (Nonresidential) apply in jurisdictions that commit to going beyond statewide minimum requirements.
- ✦ Included are new requirements for altered pool heating systems in existing multifamily buildings and nonresidential buildings that align with the Heating Source Sizing requirements in §110.4(c) for replacement pool heaters. Check localenergycodes.com to see which jurisdictions have elected to require the voluntary additional measures for multifamily or nonresidential projects.



See our [Title 20 fact sheets](#) that further support the Appliance Standard requirements for pools:



Additional Requirements for Residential Pool Systems

› Section 150.0(p)

When a residential pool or pool equipment is installed, additional requirements will apply beyond what is required in §§110.4 and 110.5.

✦ Pumps

- » **Dedicated-purpose pool pump controls** with more than one speed must be:
 - Programmed to default to minimum filtration flow rate when no auxiliary pool loads are operating
 - Programmed to default to minimum filtration flow rate within 24 hours of operation, supporting an override control to allow for pool servicing
- » **Pool pump flow rates** are to be calculated using the formula below to support the pump size designed and installed:
 - $H = C \times F^2$, **WHERE:**
 - H** = Total system head in feet of water
 - C** = Coefficient based on volume of pool
(use 0.0167 when pool is 17,000 gallons or less, and 0.0082 when pool is greater than 17,000 gallons)
 - F²** = Flow rate in gallons per minute (gpm)
- » **Filtration pumps** must be sized, or if programmable, must be programmed so that the filtration flow rate is not greater than the rate needed to turn over the pool water volume in six hours or 36 gpm, whichever is greater

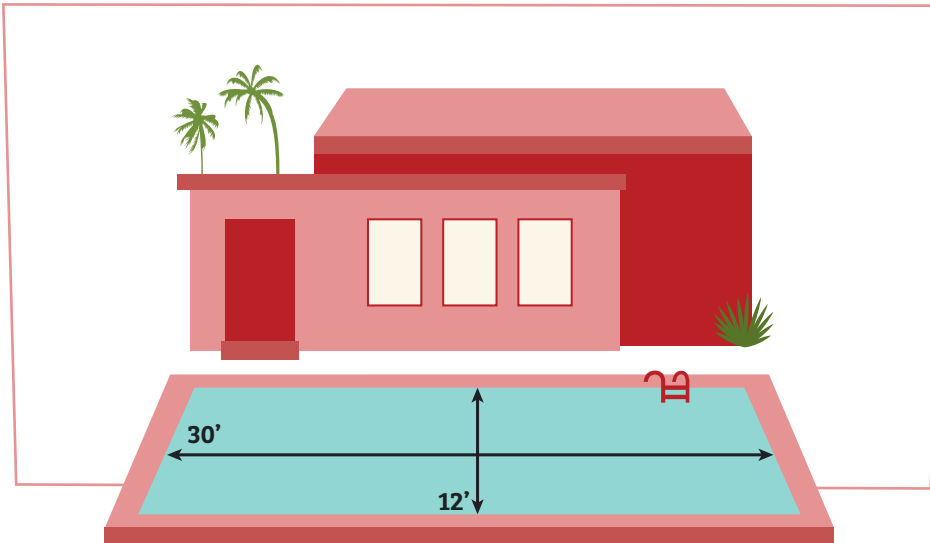
✦ System piping

- » **Before the pump**, a straight pipe must be installed of which the length is to be four times the pipe diameter (if a 2" diameter pipe, that would require 8" of straight pipes before the pump)
- » **Pool piping sized** so that the velocity of the water at maximum flow for auxiliary pool loads does not exceed:
 - Return Line: 8 feet per second
 - Suction Line: 6 feet per second
- » **Elbows** must be sweep elbows, or an elbow-type that has a pressure drop of less than the pressure drop of straight pipe with a length of 30 pipe diameters
- ✦ **Filters** must be sized using NSF/ANSI 50 based on the maximum flow rate through the filter. The filter factors that must be used are (in ft²/gpm):
 - » Cartridge: 0.375
 - » Sand: 15
 - » Diatomaceous Earth: 2
- ✦ **Backwash valves** must be 2" or the diameter of the return pipe, whichever is greater

What's New for 2025?

Residential pool pumps are no longer required to have separate pumps for auxiliary pool loads or use multispeed pumps when there are auxiliary pool loads.

Examples



Scenario #1: A new residential swimming pool is planned for a new single-family home being built in Sacramento with a dimension of 12 ft x 30 ft (360 ft² surface area).

Question: If the solar pool heating option is to be used for compliance with the pool heating requirements and each solar thermal panel is 32 ft², then how many solar thermal panels are required to meet these Energy Code requirements?

Answer:

360 ft² surface area x 60% = 216 ft², then

216 ft²/32 ft² per solar panel = 7 solar panels

Scenario #2: The homeowner is also considering using a heat pump pool heater and the manufacturer of the heat pump pool heater being considered does not give sizing guidance. This means the JA16.3 sizing requirements must be met to determine the appropriate pool heater size.

Question: What is the minimum heat pump pool heater size when using Equation JA16-1?

$Q_{out} = V_p \times 8.33 \times \Delta T / t$, **WHERE:**

Q_{out} is the output heating capacity of the heat pump pool heater

V_p is the pool volume in gallons

8.33 is the weight of a gallon of water at 62°F in pounds per gallon

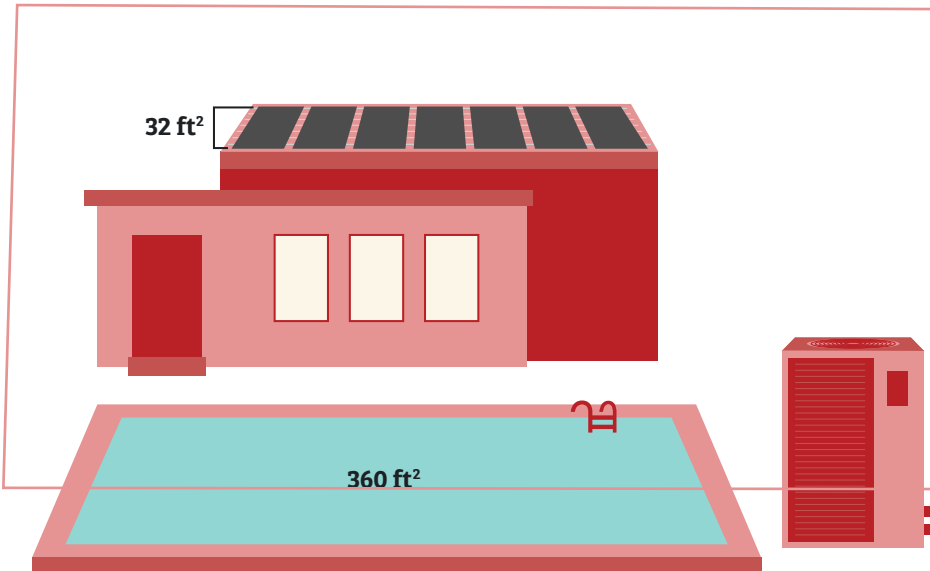
ΔT is the pool temperature rise in °F and must not exceed 10°F

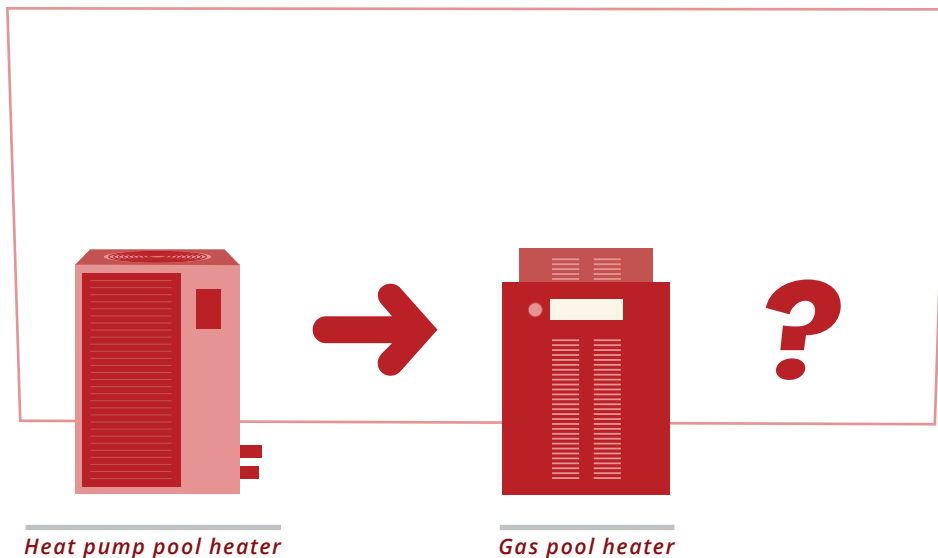
t is the time needed for the heat pump pool heater to achieve the 10°F degree rise in hours and must not exceed 17.5 hours

V_p [20,000 gallons] x 8.33 x ΔT [10°F] / t [8 hours]

Q_{out} is 208,250 btu/hr

Answer: The pool has a volume of 20,000 gallons and is designed to support a 10°F temperature rise within an eight-hour time period.





Scenario #3: The homeowner would also like to consider how they can use a gas pool heater instead of a heat pump pool heater.

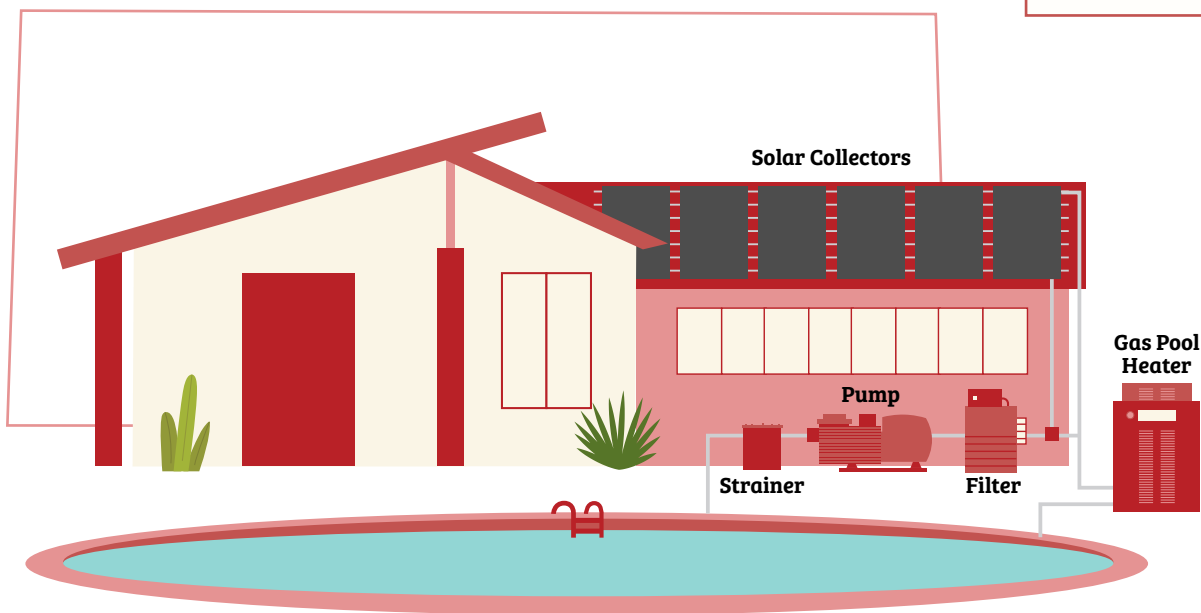
Question: What is required to use a gas heating system?

Answer: A gas heating system can be used to supplement a solar pool heating system (see the first example).



Bonus Question: What additional requirements will need to be considered for this project?

Answer: All of the requirements in §110.4 (pool heater efficiency, controls, piping, pool cover, and directional inlets) and §150.0(p) (additional piping requirements, pool pump flow rates, and backwash valves) will need to be considered. Additionally, it must be confirmed that the dedicated-purpose pool pump and controls are certified to MAEDbS.



Scenario #4: There is a 16 ft x 32 ft x 5 ft pool (roughly a 19,200-gallon pool) for a newly built home.

Question: How should the pool pump be sized?

Answer: First, you would need to determine the maximum flow rate.

Maximum flow rate (F) = 19,200 gallons / 6 hours / 60 minutes per hour
= 53.3 gpm

Since the pool volume is greater than 17,000 gallons, the pool system curve coefficient (C) is 0.0082. Now we can calculate the total system head (H) (in feet of water):

$$H = C \times F^2 = (0.0082) (53.3)^2 = 23.3 \text{ feet of water}$$

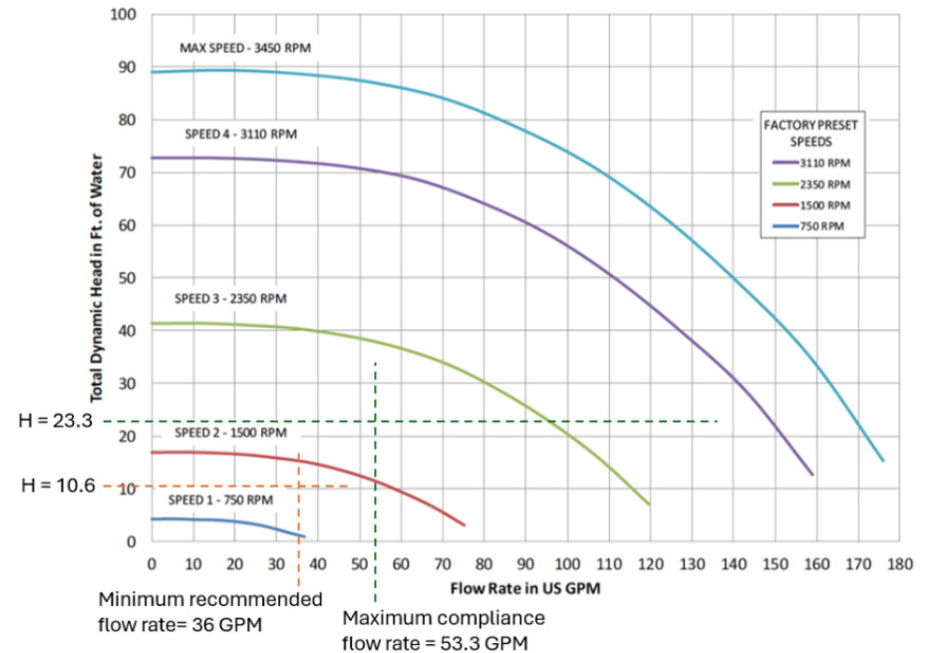
Obtain the pump performance curves from the manufacturer website. Plot two points to understand the acceptable range of flow rates.

1. Plot the intersection between the calculated maximum flow rate of 53.3 GPM and the total dynamic head of 23.3 feet of water. Do not choose a pump speed above this point (speed 3, speed 4 and max speed are not compliant).
2. Plot the intersection between 36 GPM (see Section 150.0(p)1C) and 10.6 feet of head, $H = (0.0082) \times (36) \times (36) = 10.6$. It is not recommended to choose a speed below this point (speed 1 is not recommended).

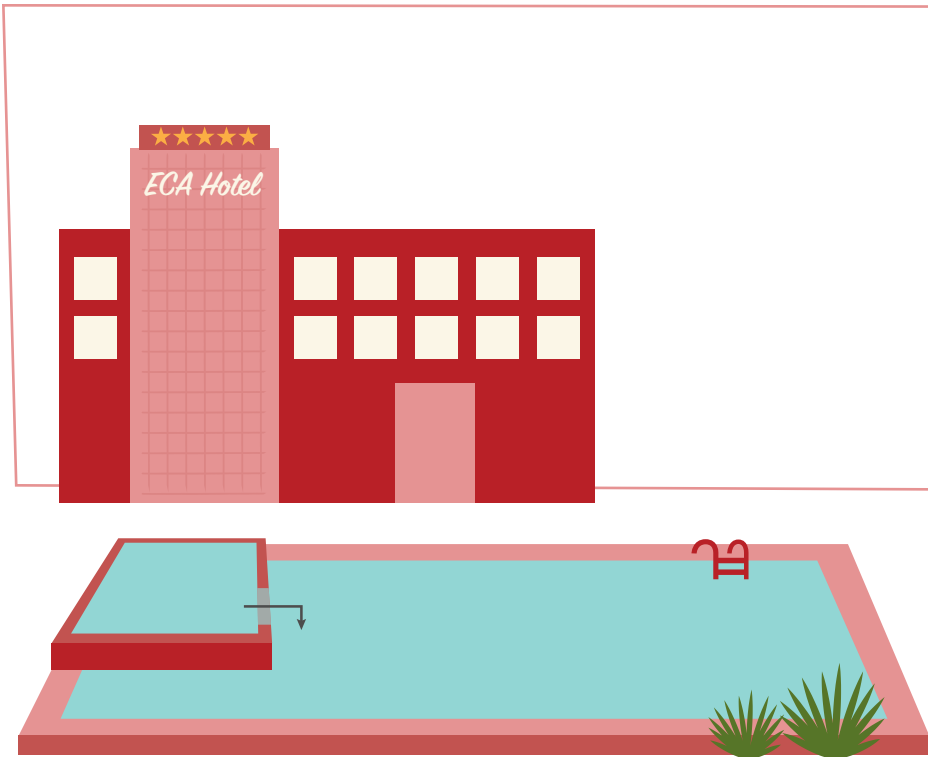
The pool technician or owner would choose speed 2 of the example variable speed pump. With a speed 2 pump at a flow rate of 42 GPM (when speed 2 and system curve intersect), it would take roughly 7 hours and 36 minutes to turnover the pool.

Turnover time = 19,200 gallons / 42 GPM / 60 minutes per hour = 7.6 hours.

It is typical and effective to have a pool pump turnover rate between six to eight hours or greater. The slower the pump runs, the more effective the pool pump is.



Example of pump performance curves



Scenario #5: A public pool is being added to an existing hotel site that has natural gas available. They would like a gas-heated spa integrated into the newly installed pool.

Question: Would a pool built in this configuration be required to meet the "Heating Source" requirements, such as heat pump heating or solar pool heating systems?

Answer: Yes, it would. This pool and spa combination would not meet Exception 4 to §110.4(c) which exempts "Heating systems which are used exclusively for permanent spa applications in existing buildings with gas availability."

In this pool and spa combination, the pool and spa are typically considered a single body of water, but they are separated by way of valves when it is time to heat or use the spa.

- ✦ In pool mode, some of the water is returned from the pool into the spa, causing a spillover that keeps the spa circulated and filtered.
- ✦ When the spa is in use, two valves rotate, causing the pump to only circulate the spa. At this point, you would fire the gas heater to heat only the spa water. When the spa is no longer being used, the valves rotate back, and the spa is again connected to the pool for circulation.
- ✦ With this configuration, the gas heater is usually designed to be used with the spa. However, because the pool and spa are connected, it is just as easy to use the gas heater to heat the pool.

Compliance Forms for Pool and Spas

Forms for Public Pool and Spas at Nonresidential, Hotel, Motel, and Multifamily Properties

In addition to permits, public pool and spa projects serving nonresidential or multifamily properties require the following forms, called certificates, for installation. These are available via the [Energy Code Ace Virtual Compliance Assistant \(VCA\)](#) or EnergyPro energy compliance software.

There are no **Certificate of Compliance (LMCC for low-rise multifamily projects, or NRCC for high-rise multifamily and any nonresidential projects)** form requirements for public pool and spa projects. Mandatory notes should be included in the design documents to support Energy Code and Appliance Standard requirements.

A **Certificate of Installation (LMCI for low-rise multifamily projects, or NRCI for high-rise multifamily and any nonresidential projects)** must be provided on-site by the installing contractor, or contractors, before final inspection.

Table 2: Required Forms for Pool and Spa Projects for Multifamily Buildings

Occupancy or Building Type	Certificates of Compliance (LMCC or NRCC)	Certificates of Installation (LMCI or NRCI) ¹	Certificates of Verification (LMCV or NRCV)	Certificates of Acceptance (NRCA)
Multifamily Buildings ≤ 3 Habitable Stories	Not Applicable	LMCI-PLB-03-E	Not Applicable	Not Applicable
Multifamily Buildings > 3 Habitable Stories and Nonresidential, Hotel, and Motel Buildings	Not Applicable	NRCI-PLB-E Pools and spas are incorporated in the Plumbing Certificate of Installation ²	Not Applicable	Not Applicable

¹These forms must be completed and signed by the installing contractor and made available for the Authority Having Jurisdiction (AHJ) final inspection.

²The NRCI-PRC-E for pools and spas is incorporated in the Covered Process Certificate of Installation for the 2022 Energy Code cycle.

Forms for Single-family Properties

In addition to permits, residential pool and spa projects in single-family homes require the following forms, called certificates, for installation. The forms are available on [Energy Code Ace Forms](#).

There are no **Certificate of Compliance (CF1R)** form requirements for pool and spas. Mandatory notes should be included in the design documents to support Energy Code and Appliance Standard requirements.

A Certificate of Installation (CF2R) must be provided on-site by the installing contractor, or contractors, before final inspection. If Energy Code Compliance (ECC) measures are required for the overall project (typically associated with HVAC and indoor air quality systems of the single-family home) the CF2R must be registered with an ECC- Provider. If there are no ECC measures (such as installing a new pool or spa and nothing else), then the CF2R must be provided but does NOT need to be registered with an ECC-Provider.

Table 3: Required Forms for Pool and Spa Projects for Multifamily Buildings

Project Type	Certificates of Compliance (CF1R)	Certificates of Installation (CF2R) ¹	Certificates of Verification (CF3R) ²
New Construction, Additions, or Alterations in which ECC verification is required for any building feature.	Not Applicable	CF2R-PLB-03-E Registered via an ECC-Provider	Not Applicable ³
New Construction, Additions, or Alterations in which ECC verification is NOT required for any building feature.	Not Applicable	CF2R-PLB-03-E	Not Applicable ³

¹These forms must be completed and signed by the Installing Contractor and made available for the AHJ’s building department’s final inspection.

²When a project has ECC verification requirements, all compliance forms (CF1R, CF2R, CF3R) will be required to be registered with an ECC-Provider.

³There are no ECC requirements for pool and spas, but other building features such as HVAC systems may require ECC verification.

For More Information



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Ace*Tools™

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Explore this suite of interactive tools to understand the compliance process, required forms, installation techniques, and efficiency regulations in California.

- ✦ [Reference Ace](#): Navigate Title 24, Part 6 using an index, keyword search, and hyperlinked text.
- ✦ [Q&Ace](#): Search our online knowledge base or submit your question to Energy Code Ace experts.
- ✦ [Product Finder](#): Find Title 24, Part 6 compliant products.
- ✦ [Virtual Compliance Assistant](#): Get interactive help to fill in NRCC or LMCC Forms.

Ace*Training™

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On-demand, live in-person, and online training alternatives are tailored to a variety of industry professionals and address key measures.

Of special interest:

- ✦ [2025 Title 24, Part 6 Essentials – Residential Standards: What’s New](#)
- ✦ [2025 Title 24, Part 6 Essentials – Nonresidential Standards: What’s New](#)

Ace*Resources™

energycodeace.com/resources

Downloadable materials provide practical and concise guidance on how and when to comply with Title 24, Part 6 and Title 20.

Of special interest:

- ✦ [Fact Sheets for Pools and Spas](#)
- ✦ [Fact Sheets for Appliances](#)
 - » [MAEDbS 101](#)

California Energy Commission (CEC)
energy.ca.gov

Learn more about the CEC and its programs.

- ✦ [2025 Building Energy Efficiency Standards:](#) Explore the main CEC web portal for the 2025 Energy Code, including information, documents, and historical information.
- ✦ [2025 California Energy Code Fact Sheet:](#) Download this brief summary of the Title 24, Part 6 purpose, current changes, and impact.
- ✦ [California Appliance Efficiency Standards Site:](#) Visit this site for information on California's Title 20 Appliance Efficiency Regulations.
- ✦ **Energy Code Hotline**
 - » Call: 1-800-772-3300 (Free)
 - » [Submission Form](#)
- ✦ [Energy Code Support Center:](#) Use these online resources developed for building and enforcement communities to learn more about Title 24, Part 6.
- ✦ [Modernized Appliance Efficiency Database System \(MAEDbS\):](#) Search this database to find products that comply with Title 24, Part 6 and Title 20.

Additional Resources

Title 24 Stakeholders
title24stakeholders.com

The Codes and Standards Enhancement (CASE) initiative presents recommendations to support the CEC's efforts to update Title 24, Part 6 to include new requirements or to upgrade existing requirements for various technologies. Three California investor-owned utilities sponsor this effort. The Statewide CASE Team encourages the open exchange of comments and concerns from all stakeholders engaged in the Title 24, Part 6 code change process. Contact them and they will put you in touch with the appropriate CASE Team members.

Reach Codes
localenergycodes.com

Collaborating with cities, counties, and stakeholders to drive reach code development and adoption for long-term climate and energy efficiency benefits. View a list of adopted ordinances at the link provided.

CALGreen
calgreeninfo.com

CALGreen is a mandatory green building code with additional voluntary provisions. CALGreen is Part 11 of the California Building Standards Code, Title 24 of the California Code of Regulations. Codes are updated and adopted on an 18-month cycle, triennial and intervening. The current code is effective through December 31, 2025.

CEC's Newsroom

energy.ca.gov/newsroom

The CEC communicates via a quarterly e-newsletter called the "[Blueprint Newsletter](#)" throughout a code cycle. Sign up to get updates and answers to frequently asked questions!



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