

# *DIY Fiberglass Pools!*

## **INGROUND POOL FENCE GUIDE**

**By Jason Hughes**

Disclaimer: This guide makes no claim to state and/or communicate the barrier/fence code for any specific area. Property owners are responsible to research the code requirements for their area and bring their pool fence and other items associated with the pool barrier in compliance. The author will in no case be held responsible for the failure of any pool owner to meet the barrier code, or any injury to any person anywhere.

Now that that's out of the way, let's get started!

One thing for certain....every pool needs a fence. And even though some people may view pool fence as a necessary evil, a safe barrier is a critical component to any pool design. The regulation of the pool fence code has prevented thousands of catastrophes nationwide. In most areas the barrier receives more attention from building inspectors than any other component of the pool. However, this chapter is not designed to educate you on the intricacies of the pool fence requirements or to serve as a fence installation manual. You can easily obtain that information from your local municipality or the fence manufacturer.

The objective of this guide is threefold:

- To discuss the most common pool fence mistakes and how to avoid them.
- To briefly introduce the most common types of pool fence.
- To discuss the incorporation on pool fence as a part of a complete design.

Let's get started:

## **Section One: Common Pool Fence Mistakes**

**First let's cover some basics**

Here are some of the most basic requirements of the fence code in most areas that you should know:

- A barrier is required on all sides of the pool, but the distance from the pool is irrelevant
- Minimum height is 48"
- Gates must swing out away from pool area
- Gates must self close and self latch
- Door alarms are required on any door from house leading into fenced pool area

Here are some other things that an inspector will check:

- Distance from bottom of fence to the ground
- Distance between pickets
- Distance between horizontal rails
- Height of gate latch from ground

This barely scratches the surface, but it will get you started. Remember that the model barrier code is a nationwide regulation; however it is only a minimum requirement. Some localities or home owners associations may have more restrictions, but none can require less.

### **Most Common Fence Mistakes and Pareto's Law**

Pareto's Law, or the 80/20 Rule, states that 80% of the effects come from 20% of the causes. Well, this certainly holds true when it comes to pool fence mistakes. Eighty percent of the problems come from twenty percent of the code requirements. Here's a brief overview of these common oversights and how to prevent them.

#### Common Problems with New fences:

##### ***Bottom of the Fence too High off of the Ground***

Because most fence panels are straight and most ground has some slope, it is difficult to insure that the entire bottom of the fence is close enough to the ground to pass code. This is the most common reason new pool fences fail inspection. The solution is to either drive the fence closer to the ground or to build the ground up. Sometimes the difference can be too great for either approach. In this case you can place pavers or some large stone directly under the fence to reduce the difference to the required distance.

##### ***Door Alarms, or Lack Thereof***

If the house serves as part of the barrier, or in other words if you fence three sides of the pool and tie the fence into the house, any door leading from the house directly into the fenced area must be alarmed. Surprisingly, many pool contractors and even fence companies do not inform people of this requirement. This does require you to be home for the final inspection, so it will need to be coordinated with the person scheduling the final inspection.

##### ***Tying the Fence in With an Existing Deck***

This is simply a can of worms, so if you are considering this option pay attention. If you run your fence to an existing deck, that deck becomes part of the barrier. If the fence terminates at the railing of a set of steps, then that railing must meet the code requirement (which it probably doesn't). A common mistake people make is simply running the fence to the end of the step railing without considering the consequences. The solution in this case is to rebuild the railing. Another common mistake is butting the fence to an elevated deck without considering the open space between the deck and the ground. This

area must be closed off with approved lattice or something else that meets the code requirement. People also make an assumption that if a deck has two sets of steps, one inside the fence and one outside, then they can simply add a gate to the outside set of steps to close them off. This would work if the said step railing and the new gate were up to code, but neither the height or picket spacing of a standard railing meet the requirement. Again, you could adjust the railing, or just skip the hassle and fence to the corner of the house. If you actually plan on doing any of this, it's best to meet with an inspector on site before hand and have him tell you what he wants.

### ***Metal Fence too Close to Pool***

Anything metal within 5' of the water's edge of the pool needs to be bonded. Bonding is the process of removing any stray voltage from your pool components that might otherwise deliver a small shock when you touch them. This is done by attaching a bare copper wire to the metal component. Handrails, ladders, slides, diving boards, steel in the pool deck, and anything else within 5' of the pool need to be bonded. Many people, unaware that such a thing even exists, install their aluminum fence within 5' of the pool and it fails inspection. The remedy is to run a bare copper (bonding) wire to each post and panel of the fence that falls within the 5'. The best thing to do is keep the fence more than 5' from the pool.

## **Common problems with Modifying Existing Fences**

### ***Gates will not self close***

This is a big one with existing PVC and especially wood fences. The biggest problem is often that the bottom of the gate rubs the ground just enough to prevent it from closing. Simply take a shovel or a weed eater, whichever is applicable and clear out plenty of space under the gate to ensure a smooth close. This is also a result of the gate hinges not opening and closing smoothly due to age. If this is the case, some cleaning and lubricating is in order. If that doesn't do the trick, new hinges are inexpensive and easy to install.

### ***Gates will not self latch***

Even if you can get the gate to close, getting it to latch is another matter. The gate must have enough speed upon closing that in enable the latch to fasten. There are many types of latches, but the magnet activated latches with the pull top require the least amount of speed and force from the closing gate. Another common cause of this problem is incorrect alignment of the latch between the post and gate sides. This is a simple adjustment and should only take a minute. The key with an existing fence gate is to get it right and then check it again before the inspector shows up. I think inspectors have the same effect on fence gates that mechanics have on a cars. Somehow fence gates stop closing and latching on the day of the inspection the same way your car's funny noise disappears just as you arrive at the repair shop.

### ***Gates open the wrong direction***

Seeing a trend here; as you can see most problems with existing fence revolve around gates. The gate needs to swing away from the pool. They won't let this one fly, so you have two options: board the gate off, or turn it around.

### ***Fence too short***

This is a big one. Especially with a concave fence; the style that dips in the middle of each section. The minimum height applies to the entire fence, so if any portion of the fence doesn't measure up, the entire fence fails. The reason this is a common problem is because the standard concave fence is 48" at the post, then dips below that height in the middle. This is common in many areas of new construction where this type of fence is included as part of the house package.

Now that we've covered some of the most common oversights that people make. Let's look at the most common styles of pool fence.

## **Section Two: Pool Fence Styles**

In this section we will discuss the three most common styles of pool fence. We will also look at the advantages and disadvantages of each type as well as discuss settings where one type of fence may be preferred to another.

### **Ornamental Aluminum**

Ornamental aluminum has become the most popular type of pool fence in America due to its durability and elegant appearance. The aluminum is coated with a type of dry powder which is applied as a free flowing agent. This process is called powder coating and differs from conventional liquid paint because it does not require the use of a solvent to keep the product in suspension form. The coating is applied electrostatically and then cured under heat to allow it to form the skin that coats the aluminum.

Powder coated aluminum fence is sometimes confused with wrought iron fence which is extremely heavy and has a painted surface. Iron fence is not frequently used around pools because it is much more expensive and time consuming to maintain. The panels for residential aluminum fence come in six foot sections and are composed of individual top and bottom rails and pickets that are fastened together with rivets or screws. There are two standard heights of pool code fence. One is a single top rail fence that is 48" tall. The second and most popular style of aluminum pool fence is 54" tall and has two rails on top and one at the bottom. Let's take a look at two of the most popular styles of 54" aluminum pool fence.



This 54" fence is a double top rail with every picket extending to the top of the fence.



With this style of 54" fence every other picket has a crushed tip for additional ornament.

Let's take a look at some of the advantages and disadvantages of ornamental aluminum fence.

#### Advantages:

- Extremely durable
- Low maintenance
- Relatively inconspicuous (especially darker colors)

#### Disadvantages:

- Not a good privacy fence

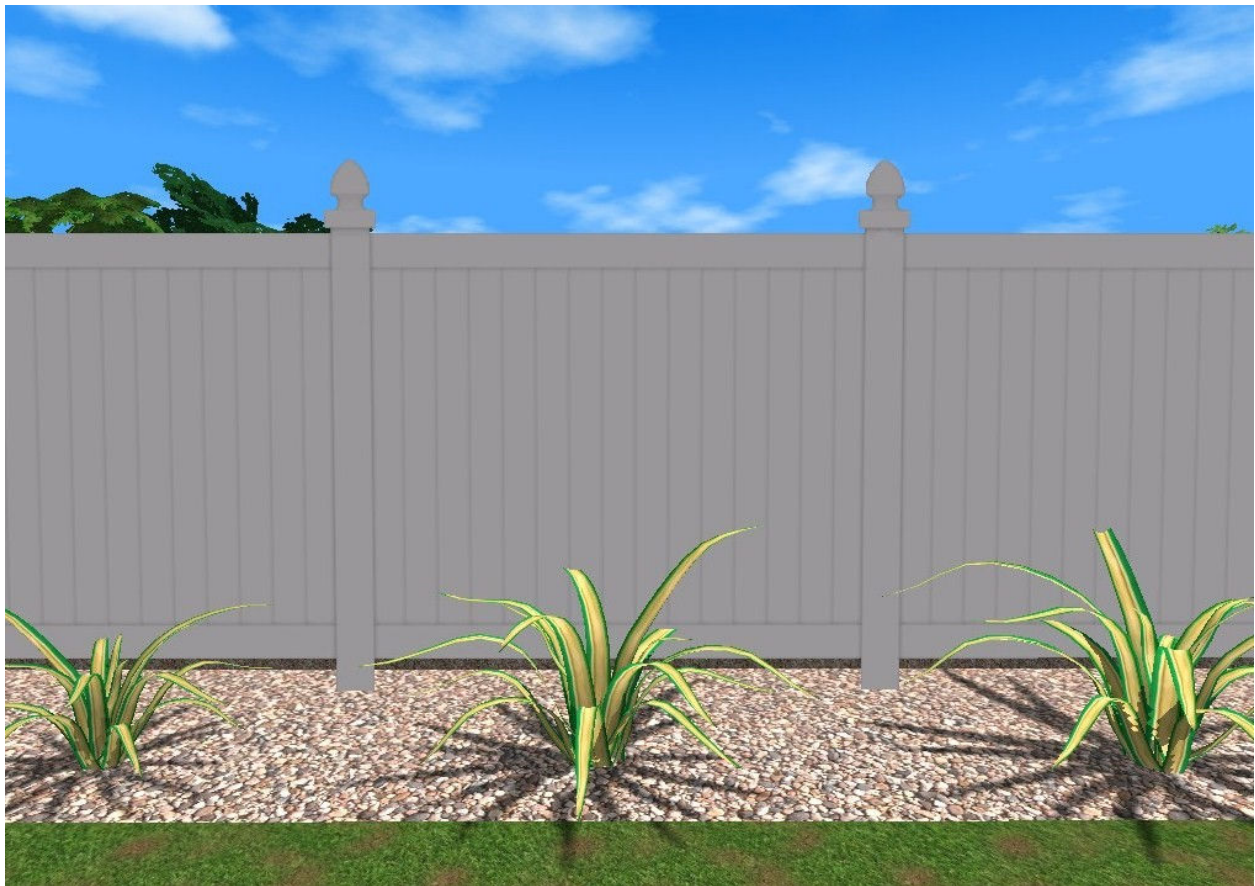
#### Applications

Ornamental aluminum fence is perfect for any setting where low maintenance is important and a privacy fence is not required. Aluminum fence is also great for waterfront properties or any other setting where you want to limit the obstruction of a wonderful view as much as possible. This is primarily because of the narrow rails and pickets used to construct the fence. This is the only type of fence that requires absolutely no maintenance, and that's a huge plus for most people. Regarding

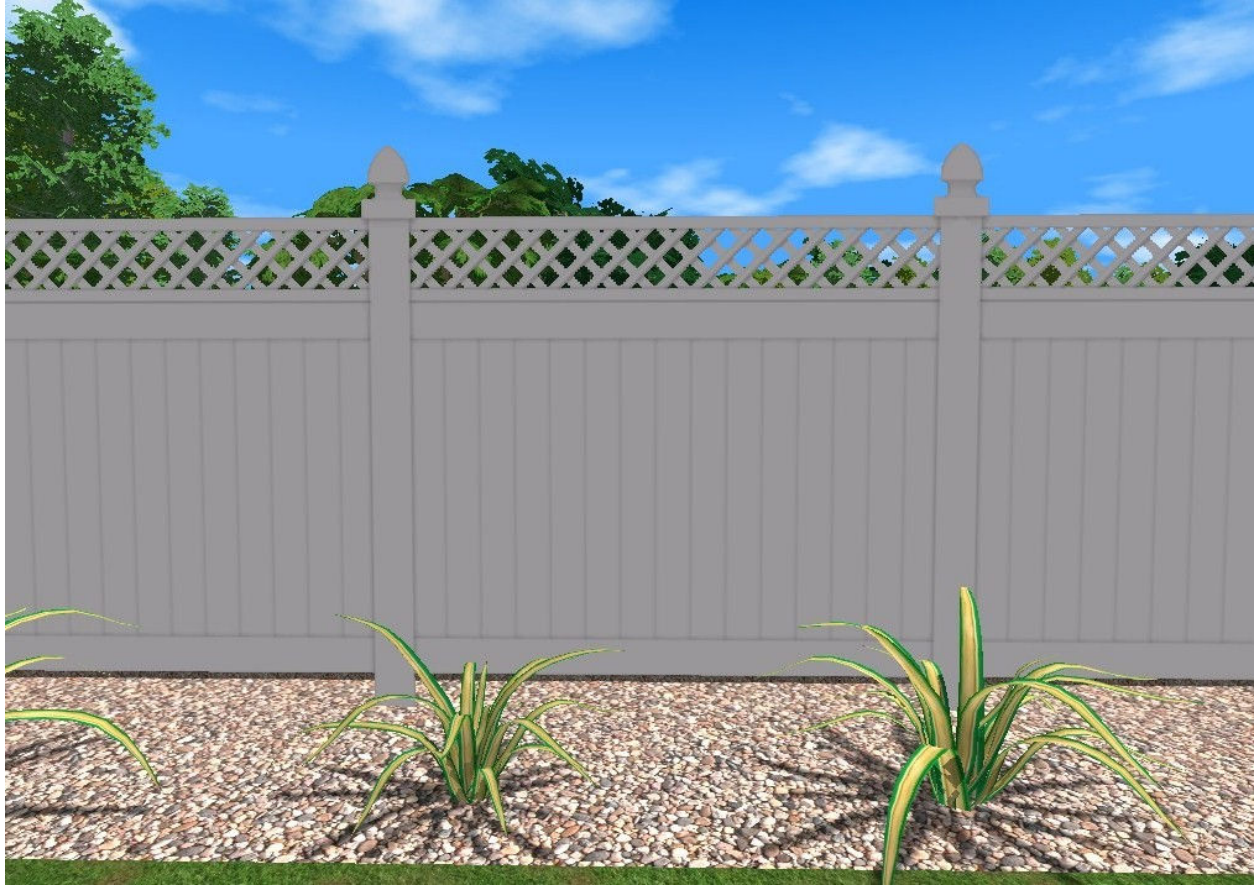
pricing, all fences are priced by the linear foot. The cost of aluminum fence varies by region, but an average range is \$25-\$40 per foot installed. There is usually an additional charge for each gate, normally a couple hundred dollars each. Aluminum fence is also available in a variety of colors. The most popular color is black, but many manufacturers also offer white, bronze, or green.

### **PVC**

PVC fence is also frequently used around pools. There are two primary styles: standard fence, which is 48"-54" tall with either solid slats or spaced pickets; and privacy fence, which is 6'-7' tall with the slats butted together to make a solid panel. Many privacy fences have lattice or spindles for the top foot of the fence to add ornament to the design. Let's take a look:



Standard PVC privacy fence.



Lattice top PVC privacy fence.





Spindle top PVC privacy fence.

Now let's take a look at some of the pros and cons of PVC pool fence.

#### Advantages

- Great privacy fence
- Low maintenance
- Many solid and picketed styles available
- Many manufacturers can adapt their styles to custom heights for little or no additional charge.

#### Disadvantages

- Gates tend to sag over time
- Pickets and rails are much thicker and considered bulky by some consumers
- White color tends to be very conspicuous
- Mildew can form on fence in wet shady areas

#### Applications

PVC is the undisputed champion of privacy fences. It's durable, low maintenance, and provides great privacy. What else could you ask for? It's frankly not my favorite choice for a standard pool fence because the bulkiness of the thick pickets and rails. But that's just my opinion. We've used PVC in many

settings, often when tying in with an existing PVC fence, and the projects have all turned out wonderful. In terms of pricing, standard PVC fence (48"-54") normally ranges from \$25 to \$35 per foot and privacy fence is normally \$35 to \$45 per foot. Gates are normally \$250-\$350 each. Almost all PVC fences are white, but many manufactures also offer tan as another option.

### **Wood**

Wood is a tried and true building material and continues to be a popular fence material used around pools. Over the past decade it has been overshadowed by PVC and aluminum because of their low maintenance benefits, but thousands of wood fences are still installed around pools every year.



A standard concave wood fence.

Let's consider some of the pros and cons of wood fence:

#### Advantages:

- Size and style are totally customizable
- Less expensive than PVC or aluminum
- Can paint or stain a wide variety of colors

### Disadvantages:

- Requires more maintenance
- Can warp and twist over time

### Applications

Wood has some very strong qualities to take advantage of, if you're willing to put the time in to maintain it. It is natural not manmade, and there's power in incorporating various natural elements into a design. In some settings a manmade barrier constructed of plastic or aluminum may not work as well as wood. Notwithstanding the maintenance aspect, there's no disputing the fact that it looks great in any setting and also makes a wonderful privacy fence.

## **Section Three: Incorporating the Fence into the Total Design**

One of the biggest mistakes people make in planning their pool project is waiting until the pool and patio are in before deciding what they will do with the fence. Many times the fence layout is a no-brainer, but sometimes it can be quite tricky, and these are the times the planning is usually deferred.....big mistake. This section is designed to share some simple tips and methods for incorporating the pool fence into the complete design. It is divided into sections on fencing around patio, walls, accessory structures, and sloping lots.

### Low Maintenance Fence Layouts

Low maintenance is a goal for all pool owners. You want to spend your time around the pool lounging in a float with a cold drink, not weed eating around a fence. One simple and attractive method to prevent weeds between the patio and fence is to border the patio with an area of decorative gravel that extends at least a foot beyond the outside of the fence. Install a permeable weed barrier underneath the gravel and you have a beautiful low maintenance border that ties the fence into the design. I've found that the best gravel is round stone 1 ¼" or bigger. Small pea gravel should be avoided because it scatters across the pool deck whenever a stray foot finds its way off the patio. Mulch is another alternative, but has to be redone at least once per year.

### Fencing on the Pool Patio

Occasionally a customer wants to install the fence on the pool deck. This does make for a clean look, and it is certainly low maintenance, but it is more expensive.

There are several ways to accomplish this:

**Core drill a hole through the patio for each fence post after the deck is poured.** The post is then set in the hole, and anchoring cement poured around the post. This is probably the most fool-proof method, but also the most expensive. A standard price is \$40-\$70 per hole.

**Placing a piece of pipe in the deck for each fence post** is another option. This is very cost effective, but if one piece of pipe is laid off incorrectly or shifted during the pour you are out of luck.

**Bolting the post to the deck with brackets** is a third option. This is also more cost effective than core drilling and not as risky as the pipe method. The disadvantage of this method is that the posts are not as stable as having the post installed in the ground or concrete.

With any of these methods you need to have the posts a minimum of four inches away from the edge of the patio to prevent the concrete from cracking or breaking off between the post and the edge; so be sure to size your patio accordingly.

#### *Fencing Across the Pool Patio*

Sometimes it's necessary to divide a patio area into two sections with the pool fence. This tends to break up the continuity between the pool area and the space outside of the fence. One way to overcome this is to install a double gate in the major connecting area. When the pool is in use, simply open both gates and this will give you eight feet of open area connecting the two spaces. This gives a feeling of continuity that cannot be achieved with only one gate.

#### *Fencing on a Retaining Wall*

When a retaining wall requires a railing, it's sometimes best to install the pool fence on the wall. In this case, the posts can be set using either the core drilling or bracket methods mentioned above. One word of caution when using the core drilling method: be sure the anchoring cement does not run down outside of the wall when setting the posts. It's a bear to remove from the wall once it sets up. Placing the fence just inside the wall instead of on top of the wall is another option if there's plenty of space between the patio and wall.

#### *Fencing to Accessory Structures*

Fencing to the side of an accessory structure works very well in most cases. Here are a few pointers for incorporating an accessory structure into a fence plan:

- Make sure the entire structure meets the barrier code requirement
- Only the main dwelling requires door alarms; sheds, pool houses, etc. do not.
- If mounting the filter system behind a structure and outside of the fence, be sure to install a gate close to the structure to easily access the equipment.

#### *Fencing on Sloping lots*

This is a tricky one. Sloping lots have their advantages and disadvantages when it comes to pool fence. There are two primary disadvantages. First, it can be difficult to maintain the minimum distance between the fence and the ground. Even though the fence panels are straight, they can be racked to run somewhat with the ground. But the gates, which are the second obstacle, cannot be altered to follow the ground because they are welded straight and must be installed perfectly level. Two solutions for the gate are to either have a gate custom built, or to simply install it on level ground. One great advantage of a sloped lot, especially when you would like the fence to be inconspicuous, is to run the fence down the hill on both sides so you look over top of the fence. This is great for waterfront properties or anywhere else where you want to avoid disrupting a nice view.

Well, that's it! Hopefully this guide has helped you gain a basic understanding of the basic fence code, what mistakes to avoid, and a good idea of what type of pool fence will work best around your pool.  
Good Luck!