



Types of Piers: Steel Piers

If you listen to the hype, it sounds like there must be 20 or 30 different types of piers out there. Company A says they have an exclusive Super-Duper Pier that nobody else has, and they claim it's the only one that really works. Company B, however, has "invented" the Ultra Fantastic Pier that you can only get from them, and they claim that it is the strongest pier on the market. "All others pale in comparison", they say.

But in all honesty, there are really only 3 basic types of piers available and used by all companies:

Pressed Pilings, Drilled Piers, and Steel Piers.

The small variations found in each of the 3 main types make very little difference to the overall effectiveness of the pier. In this section, we will look at the Steel Piers.

The steel pier, like the drilled concrete pier, has been around for a very long time. And there are as many different designs of steel piers as there are foundation repair companies! But basically the designs all fall into 2 basic design groups: Those with brackets, and those installed under the beam.

Older-style steel piers are installed outside the foundation perimeter of the home. After the pier is installed by pressing the pipe into the ground with hydraulic rams (again utilizing the weight of the house to push the piers), a bracket is used to transfer the weight of the home to the pipe. This involves bolting brackets to the concrete foundation, which can weaken it, and also creates a tremendous bending moment on the pipe just below the bracket. Many steel piers have been known to fail at this point. Also, the bracket, pipe, and bolts often stick out of the soil around the home creating an unattractive and often dangerous situation.

Newer-style steel piers are installed directly under the perimeter grade beam. These piers do not involve drilling into the concrete foundation, and do not rely on a bracket to transfer the load of the house onto the pipe. This style of steel pier sits directly below the weight of the house, just like a drilled pier or pressed piling. Nothing remains above ground level. Many times, these piers are designed with 1 pipe inside of another to add strength and allow for flexibility of section lengths. This double-walled steel pier is significantly stronger and longer-lasting than the traditional single-walled steel piers. This is the only steel pier type installed by Williamson Foundation Repair.

ADVANTAGES:

- * Reduced skin friction allows for much deeper installation where rock is very deep.
- * Excellent inter-locking characteristics make these piers preferred in areas with a lot of ground water and, thus, lateral soil drift.



- * Relatively quick installation time, as no concrete drying is required.
- * Very little soil is removed, which makes this a relatively clean pier to install.

DISADVANTAGES:

- * Cost. A good steel pier will cost approximately twice that of a concrete pressed piling pier.
- * To compete on price, many companies use thin, inferior grade steel which will bend and break over time.
- * As many companies utilize proprietary bracket designs (for older-style steel piers), other companies may not be able to adjust these piers if the original installation company either refuses service or goes out of business.

Overall, Steel Piers are a very good foundation repair system where needed. However, older-style steel piers with a bracket bolted into the foundation should be avoided if possible.