



Pearson Pilings, LLC - 846 Airport Road - Fall River, MA 02720 - (508) 675-0594

Pearson Pilings Properties

Fiberglass Fiber Architecture -

We manufacture a proprietary three-dimensional fabric that, when infused with resin, has exceptional shear properties and damage tolerance. This type of fabric is used for high stress mechanical attachments in the transportation, defense, and ride vehicle industries due to its extremely high fatigue resistance. The through-the-thickness glass filament reinforcements make the laminate act as one. For this reason, the piles can be driven with any type of driving equipment without structural damage. Also, when driving through coarse till or onto bedrock, there is no splitting.

Outer Layer -

We use a hydrolytically stable, u.v. resistant, high molecular weight thermoplastic extrusion that is bonded at elevated temperature in our semi-automated manufacturing process. The color is uniform and, in the case of installation damage, easily repaired. The exterior is fire retardant and self-extinguishing.

Finished Surface -

The smooth and uniform exterior is due to precisely controlled pressure, temperature and vacuum parameters. This smooth surface aids in the application of brackets and hardware and also provides improved soil cohesion and drivability.

Physical Properties -

Designed to have the same bending stiffness as the same nominal size Southern Yellow Pine pile. The ultimate bending moment is in the same range as a steel pile with the same dimensions.

Mechanical Attachments -

Easily drilled and cut with closely spaced carbide tipped tools, the exterior surface remains unblemished. Due to the fiber architecture, bolts can be tightened to recommended torque values without damage. In addition, lag bolts and Teks® screws can be used for all non-structural attachments without delamination.

Other Fiberglass Pilings Properties

Fiberglass Fiber Architecture -

Fiberglass pipe piles are made with knitted quadraxial glass with many discrete layer knitted together with polyester thread. This type of fabric is used for everything from wind turbine blades to high performance boats. Since the polyester filaments are much weaker than glass filaments, the shear values are very low for the various layers. This causes delamination of the layers during pile driving and a resultant loss of driving energy transmission. Also, when coarse till or bedrock is encountered, the pile may split, further reducing driving efficiency.

Outer Layer -

Generally, a marine grade gel coat is applied to the exterior after surface preparation. There are variations in color and texture because this is not a molded surface and usually applied with brushes. Due to the high resin content of the gel coat, it is not fire resistant or self-extinguishing.

Finished Surface -

The exterior is lined and somewhat disfigured due to the low pressures and high vacuum of the manufacturing process. The hoop (radial) strength is dramatically reduced where there are wrinkles in the laminate. The inconsistent surface also makes bracket attachments difficult.

Physical Properties -

Generally, the axial and radial properties are in the same range, with a much lower inter-laminar shear value. There is a significant decrease in damage and impact tolerance due to the lower shear strength.

Mechanical Attachments -

When drilled and cut, there is more fraying and delamination. Bolted connections should be made with curved washers to help distribute the loads and reduce delamination. Lag bolts and self-tapping screws should not be used as they will loosen readily due to delamination.