

## PAVERDECK GENERAL INFORMATION

**Strength** The EDECK platform is likely the strongest and safest deck system available. The nesting nature of the deck provides a complete structural subfloor that has been tested to over 560 lbs per square foot without collapsing - greatly surpassing the limits of the building code. Unlike other steel deck systems, we use higher strength steel than the building codes and our competition.

**Lifespan** Unlike other steel deck systems that rely on a paint layer for protection, we add 50% more zinc galvanizing for longer corrosion protection than our competition and the building codes require. We are the only deck system to offer anodes to provide an indefinite lifespan to our deck structure. Our structures are not susceptible to fire or termites.

**Investment** Unlike other deck systems that deteriorate over time and require constant maintenance costs, the stability and lifetime of our system make it the best investment in your home.

**Foundations** A Paverdeck foundation can be: (a) floated on-grade using concrete footing pads or concrete block; (b) installed below the frost line on concrete sonotube columns using a Bigfoot or other footing form; or (c) installed below the frost line on steel helical piles. Check with your local building office for limits.

**Below or Above Grade** A Paverdeck installation can be at any elevation below or above grade. You can sink the beams in the ground for at-grade decks or pool surrounds, or install the deck as a second floor balcony for walkout basements. Deck support columns are typically concrete (up to 54 inches from grade) and 4x4 steel HSS pipe (up to 20-feet), but we have been seeing aluminum finished structural columns, and 6x6 wood columns (note: preservative treated columns should be flashed and protected from the weather).

**Big Clear Spans** The galvanized steel deck pan can span 14-feet between beams (12-feet preferred) for a residential deck, and can cantilever 39 inches over a beam - more than any wood structure can do.

**More Design Flexibility** Straight, angled, or curved lines can be incorporated into the deck design with Paverdeck. A Paverdeck can easily support a hot tub (although we recommend an extra beam and column under the hot tub).

**Simple Installation** Installation is straightforward for a DIY project or your own contractor. We generally use a gasoline abrasive cutoff saw (12" or 14") or angle grinder to cut the metal. You can also use an electric circular saw with appropriate metal cutting blade. Make sure to follow all safety instructions, including using protective gloves, eye and face protection.

**Anodes** Our deck structure is the only decking system with anode corrosion protection technology, which will provide for an effective unlimited lifespan in your deck investment. Anodes are inexpensive and simple to install, and require inspection every 10-15 years. Installation is straightforward for a DIY project or your own contractor.

## TECHNICAL INFORMATION

In the United States, the PAVERDECK™ system is suitable for use as an exterior or interior platform for residential and commercial buildings, in compliance with AISI S100-12 – North American Specification For The Design Of Cold-Formed Steel Structural Members, as referenced in the sections 2210 and 2211.5 of the International Building Code, and sections R301 of the International Residential Code.

In Canada, the PAVERDECK™ system is suitable for use as an exterior or interior platform for residential and commercial buildings, in compliance with **CSA S136-07** as referenced in the building codes.

### Independent Validation

Engineering has been independently validated by Roger A. LaBoube, Ph.D., distinguished teaching professor, Department of Civil Engineering and director of the Wei-Wen Yu Center for Cold-Formed Steel Structures at the Missouri University of Science and Technology, as well as independent engineers in Ontario.

The deck platform was independently tested by Innovative Test Solutions with ISO/IEC 17025:2005 A2LA accreditation.

### Sold Certified

In Canada, the PAVERDECK™ system is supplied with a technical specification bearing a professional engineering seal for Ontario and other provinces. In some U.S. jurisdictions, a local professional engineer may need to prepare design drawings for permit purposes.

The PAVERDECK™ system is suitable for use as an exterior or interior platform for residential and commercial buildings in compliance with Building Codes in Canada and the United States. Evolutiondeck Inc. can assist builders, engineers, architects, and designers with their specific design considerations.

### Materials

PJT is made from galvanized sheet steel manufactured in compliance with ASTM A653/A653M-98 Z275 (G90), with a minimum substrate thickness of 1.4mm (16 ga., 0.055in) and minimum yield strength of 345MPa (50ksi).

### Structural Loading

The PAVERDECK™ system satisfies structural performance requirements for uniform load combinations up to 250 psf (12.3 kPa) at the specified spans. Higher load combinations are achievable at shorter spans. Use your applicable building code to determine your uniform load combinations for structural and service loading. The PAVERDECK™ is able to support a hot tub, although extra column supports at 8-feet.

### Example loading (at maximum span)

Dead load (D) = 1.6 kPa (33 psf)

Live load (L) = 4.8 kPa (100 psf)

Specified Snow/Rain load (S) = 4.0 kPa (83.5 psf)

Specified Wind load (W) = -2.0 kPa (-41 psf; 100mph)

Seismic load (E) = 1.2 kPa (25 psf, Sa = 0.66)

**Maximum Clear Spans Between Beam Supports**

Commercial (100psf) = 3.7 meters (144 inches, 12 feet)

Residential (40psf) = 4.2 meters (168 inches, 14 feet)

Maximum platform cantilever = 1.0 meter (39 inches)

Stair system maximum tread clear span = 1.2 meters (48 inches)

Stair system maximum cantilever = 305mm (12 inches)

**Service Deflection at Maximum Clear Span**

Service performance satisfies L/360 maximum deflection requirements:

(a) Residential live uniform load (40psf) = L/360

(b) Commercial live uniform load (100psf) = L/408

(c) Stair system 100psf live uniform loading = L/1220

## GENERAL INSTALLATION INFORMATION

PJT exterior platforms may be installed as a freestanding deck structure with or without frost footings, or attached to another structure in a similar manner as with wood structures.

The system can accommodate any design - use the following tips:

### Deck Pan

- Our deck pan is 6.25-inches in height.
- Deck pan panels come in 10, 12, and 14-ft lengths. Design with dimensions of 5, 6, 7, 10, 12, 14 ft to ensure best use of material.
- The deck pan can span 14-feet from beam to beam (although typical is 12-feet), and can cantilever 39-inches over a beam.
- You can create curved profiles of the deck within the cantilever portion, or greater if you use another beam supporting the curved portion.
- The deck can be attached to a steel ledger at the house (typically an L4x4.25 you purchase locally).
- The deck can also be free-floating on independent beams.
- If you need a deck pan span greater than 14-feet, we can supply you with extra reinforcement to provide for a 16-foot span.

### Beams (optional)

- Our standard 10-inch galvanized steel beam typically spans 10 feet between posts. For greater spans, you can use a red-iron structural beam (e.g. W8x21) that you would purchase from your local supplier.

### Footings (not supplied)

- Steel helical piles for frost foundations and calculate loading based on 110 psf (although check with your local building department for local loading conditions). Footings are normally spaced maximum 10-feet on the beam.
- Concrete pier columns on a bigfoot-type footing form installed below the frost line. Note your spacing is dictated by soil conditions and is typically 6-8 feet.
- You can also float the deck on 2x2 ft concrete deck pads with spacing around 6 feet.

### Surface Finish

- The Paverdeck system can support thick pavers up to 3-inches, but note that the thicker the paver, the greater the loading support required by your footings. This would result in larger or more expensive footings. We normally use pavers from 1-inch to 2-inches thick.

### Point Loads

- The Paverdeck system can support a hot tub. Some opt to install extra footings under the hot tub.

The Paverdeck can support point loads of approx. 1000 lbs. For concentrated loads, a stiffener should be installed under the point load in their deck pan, and ideally would align with a footing.

## **PERMEABLE DECKING - Urban Trees/ Storm Water Management**

Urban trees are central part of green infrastructure systems and provide a range of economic and environmental benefits. They reduce cooling demand by providing sunshade, reduce heating demand by providing a windbreak, manage and scrub storm water, and scrub air pollution.

But trees living in urban environments face uncertain lifespan due to compacted and poor soil, city streets, driveways and underground utility services that constrain their roots.

The key to preserving and promoting tree growth is to use large amounts of loam or bio-retention soils. A number of systems have recently been introduced to respond to this urban tree challenge, but none outperforms the Paverdeck system.

The Paverdeck system offers a new solution to provide urban trees with forest-like soil conditions with adequate drainage, aeration and fertility to improve root growth, viability and lifespan. The Paverdeck system uses a patented galvanized steel platform designed to last at least 60 years (or indefinitely with replaceable anodes), and supports a wide range of surface finishes including natural stone, stamped concrete or concrete pavers readily available at any budget. The Paverdeck system spans a trench around the tree to allow for the largest unobstructed growing medium for a tree - mimicking that found in a forest.

### **The Key Advantages of the Paverdeck system include:**

- **Cost** - The most economical urban tree system available with low cost materials and simple installation.
- **LEED (Leadership in Energy and Environmental Design)** - The system is manufactured with recycled steel content; has a zero-carbon footprint during use; and is itself 100 percent recyclable.
- **Reversible access to Utilities** - The Paverdeck system provides complete design flexibility, and can be installed over utilities, as well as provide reversible access to utilities after installation.
- **Flexible through Design** - The Paverdeck system can be installed wider to span a trench around the tree. This allows the largest unobstructed growing medium for a tree, and improves the transport and feeder root system - mimicking that found in a forest.
- **Storm Water Management** - The Paverdeck system when combined with permeable pavers provides simple storm water management by allowing rainwater to percolate into the soil trough.
- **Aeration** - The Paverdeck system IS THE ONLY SYSTEM that provides an air cavity above the soil medium, which improves aeration, fertility, and microbial activity. Transport and feeder roots stay near the surface, with about 85 percent of all roots in the top 18 inches of soil. The soil surface has the highest density of roots because there is ample oxygen and microbial action along with the best opportunity to catch water from occasional rainfall.

- **No Tree Vault Required** - The Paverdeck system does not require a tree vault or surround, and can be designed to span around the tree.
- **Unlimited Life** - The Paverdeck system can last indefinitely with anodes, and comes with a limited 30-year structural warranty.
- **Professional Design** – Stone Deck Landscapes utilizes Evolutiondeck Inc., which is a professional engineering firm being able to provide project-specific design expertise.