PAVERDECK

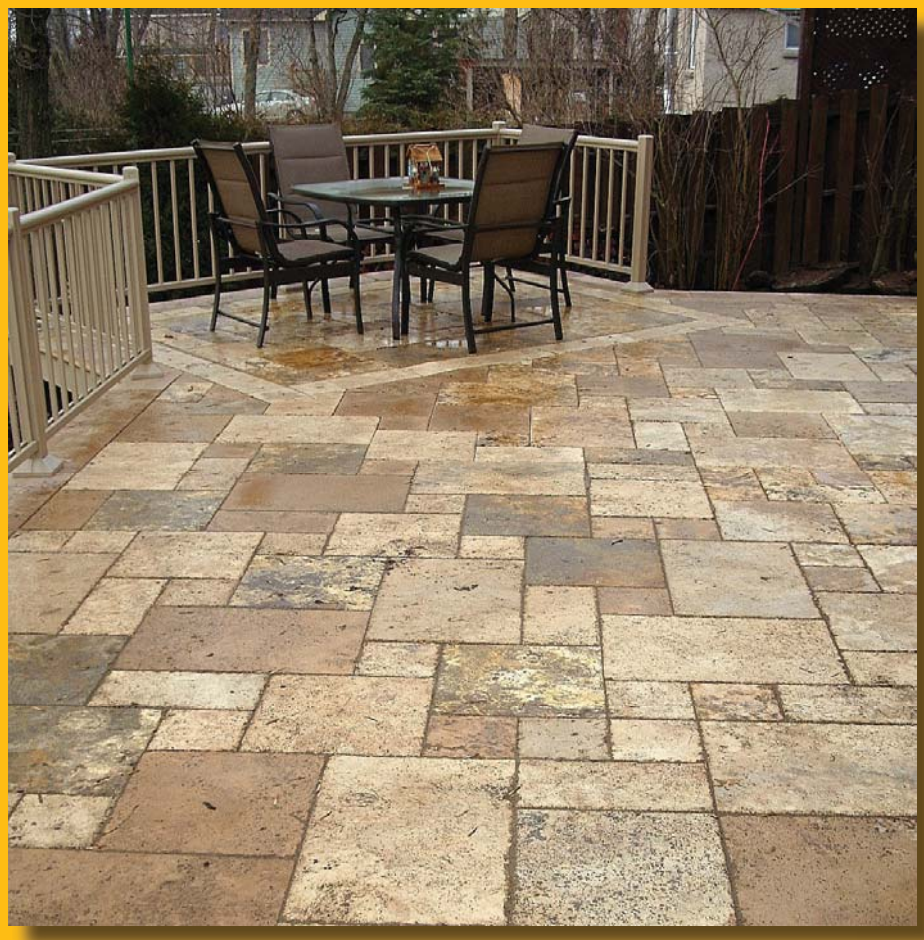
No Maintenance - Galvanized Steel Deck Kits - Stone & Concrete Pavers

Installation Manual

CAUTION. With the purchase of any PAVERDECK™ kit it becomes your responsibility to use the new product properly and safely! Please read this manual completely and carefully before using this product. Failure to follow the instructions and safety precautions in this manual can result in serious injury .

IMPORTANT SAFETY INFORMATION ABOUT STEEL. The customer assumes the safety risks associated with working with the enclosed steel panels. Steel edges are sharp which may result in serious cuts or other injury. Cutting steel panels is very loud and can emit steel fragments with the risk of serious injury. Always follow tool operating instructions and good safety practices. Always wear appropriate safety gear including sturdy work gloves, face protection such as goggles and mask, pants and long sleeved shirts, and ear protection.

ONTARIO BUILDING CODE. The PAVERDECK™ pre-engineered kit complies with the Ontario Building Code, however, it is the homeowners responsibility to secure necessary building permits and/or building official authorizations.



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(1) HANDLING PANELS. The steel panels may be handled by one or two people.

- Gloves should be worn at all times when moving panels. The metal edges can cut and must be handled carefully.
- Do not remove panels in high wind conditions, as the surface of the panel will catch the wind and can create a potentially hazardous condition.
- Panels must be stored sheltered from rain and other contaminants.

(2) TOOLS REQUIRED.

- Tape measure
- Level
- Framing square

- Reversible impact screw gun or drill with 5/16th inch hexagon driver
- If making cuts, a skill saw with metal cutting blade and/or an angle grinder with abrasive cutoff wheel
- C-clamps, or clamping pliers to secure panels before fastening.

(3) DECK CONFIGURATION.

- The PAVERDECK™ system may be assembled as a free-standing deck using traditional frost foundation systems or above-grade using deck blocks according to the included specification sheet PJTSPEC001 or PJTSPEC002.
- Consult with your local building officials for appropriate footing and connection requirements in your area.

(4) BUILDING PERMITS.

- It is the homeowners responsibility to secure necessary building permits, inspections and/or building official authorizations. Further technical information is available at www.paverdeck.com.

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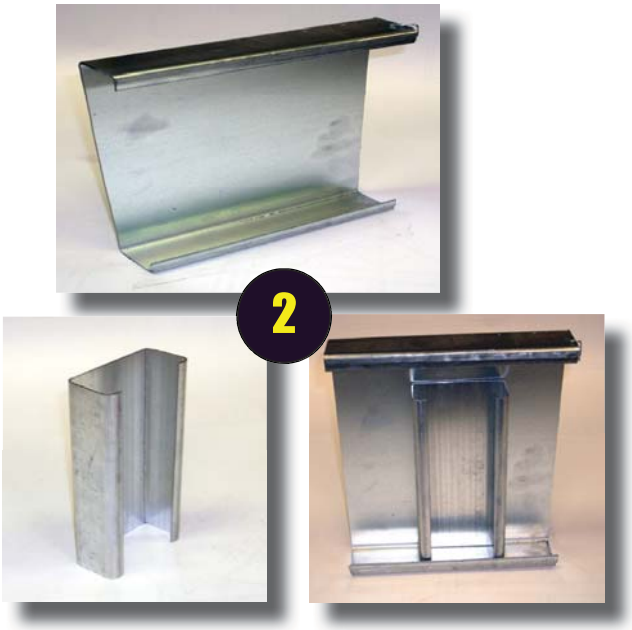
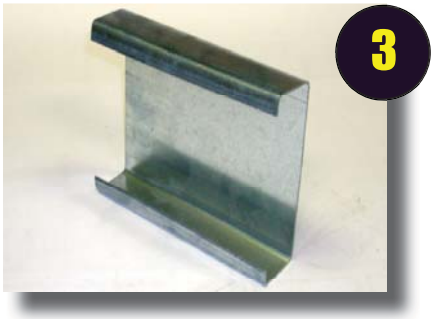
(5) PAVERDECK COMPONENTS.

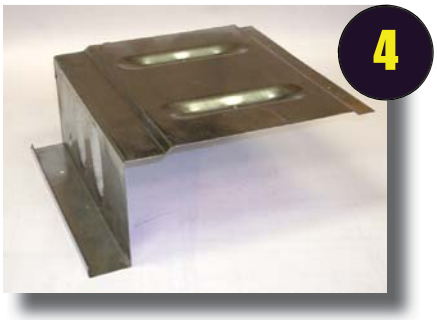
- BEAM. The enclosed 8-inch beam is sized to match the maximum span of your specific kit. Do not exceed the maximum span as stated in your kit specification.
- BEAM STIFFENER. The enclosed beam stiffener is to be installed nested into the beam as shown at the point over the foundation post.



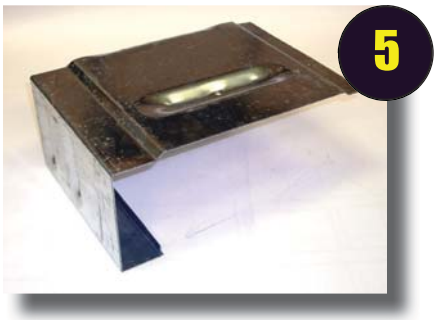
- STARTER CHANNEL. The 5.5 inch Starter Channel is used to start the deck, usually at a wall. Screw the Starter Channel to the Beam at the intersection points with the beam.



- FIELD PANEL. The Field Panel is screwed to the Starter Channel on one end, and also to each Beam at the intersection point. Keep adding Field Panels in the same manner until you reach the desired dimension.



- END PANEL. The End Panel is screwed to the last Field Panel to complete the deck platform. Also screw the End Panel to each Beam at the intersection point. If you cannot screw from the bottom, you will have to drill a 5/8" clearance hole on the top panel and screw to the beam using a driver extension.



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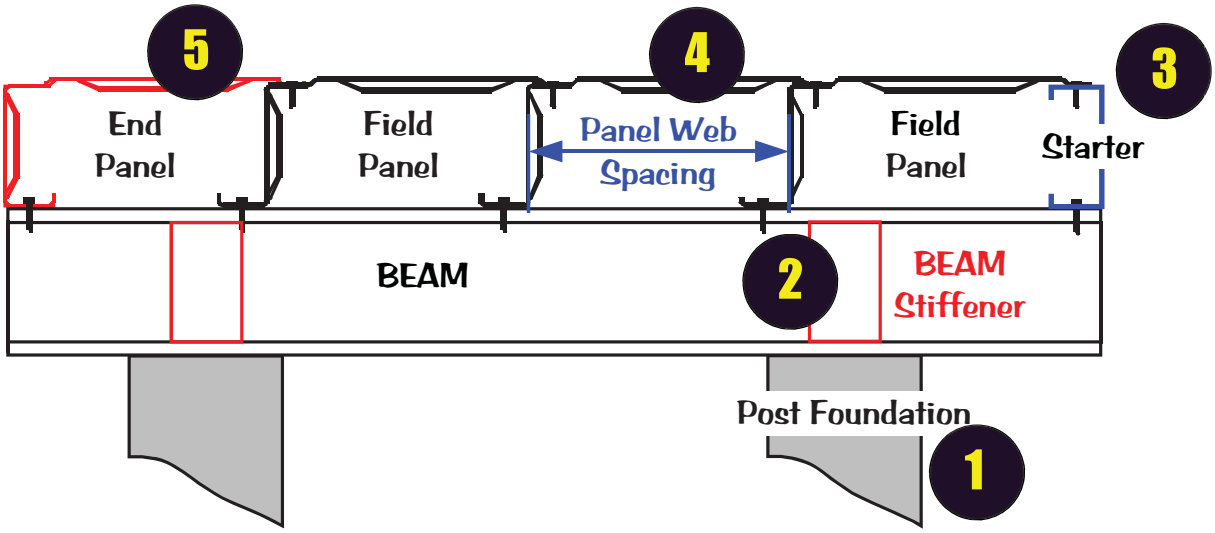
(6) PAVERDECK ASSEMBLY.



1 The PAVERDECK™ system may be attached to a house or assembled as a free-standing deck using traditional frost foundation systems or above-grade deck blocks.

The lifespan of your deck is limited by the lifespan of the column. We recommend using a minimum 24-inch diameter footing with 10-inch concrete column to the underside of the beam. Use Simpson Strong Tie MASB concrete tie, carport brackets, or equivalent brackets to secure the beam to the column.

Locate foundation columns and beams according to the drawings for your specific kit. The number of posts supporting each beam depends on local soil conditions. Consult with your local building officials for appropriate post location requirements.

2 Attaching Beams. The beams should be levelled and attached to the concrete column using Simpson Strong Tie MASB concrete ties, carport brackets or equivalent. Ensure that the parallel beams are square to each other. Slide in supplied beam stiffeners and attach at the point over each column with two screws.

3 The PAVERDECK™ system is assembled in a nested arrangement using supplied M12 x 1 self-drilling Tek® screws. Layout the Panel Web Spacing (measured between vertical web-to-web) on the beam according to your specific kit. Then attach the Starter channel to the beams using one Tek screw at the intersection with the beam.

Note that the web-to-web spacing between each Field Panel may be adjusted from 10.125" to 10.875" to accommodate varying dimensions in the field.

4 Attach a Field Panel to the Starter channel using Tek screws spaced not more than 75.0 mm (3 inches) from the end of the panel and to the beam using one Tek screw. You may wish to tack the panels at each end for fitting, then go back and insert a screw at every 12 inches. Connect each adjacent Field Panel to the prior Field Panel in the same manner. Check on occasion to ensure your deck is square (i.e. measure diagonals).

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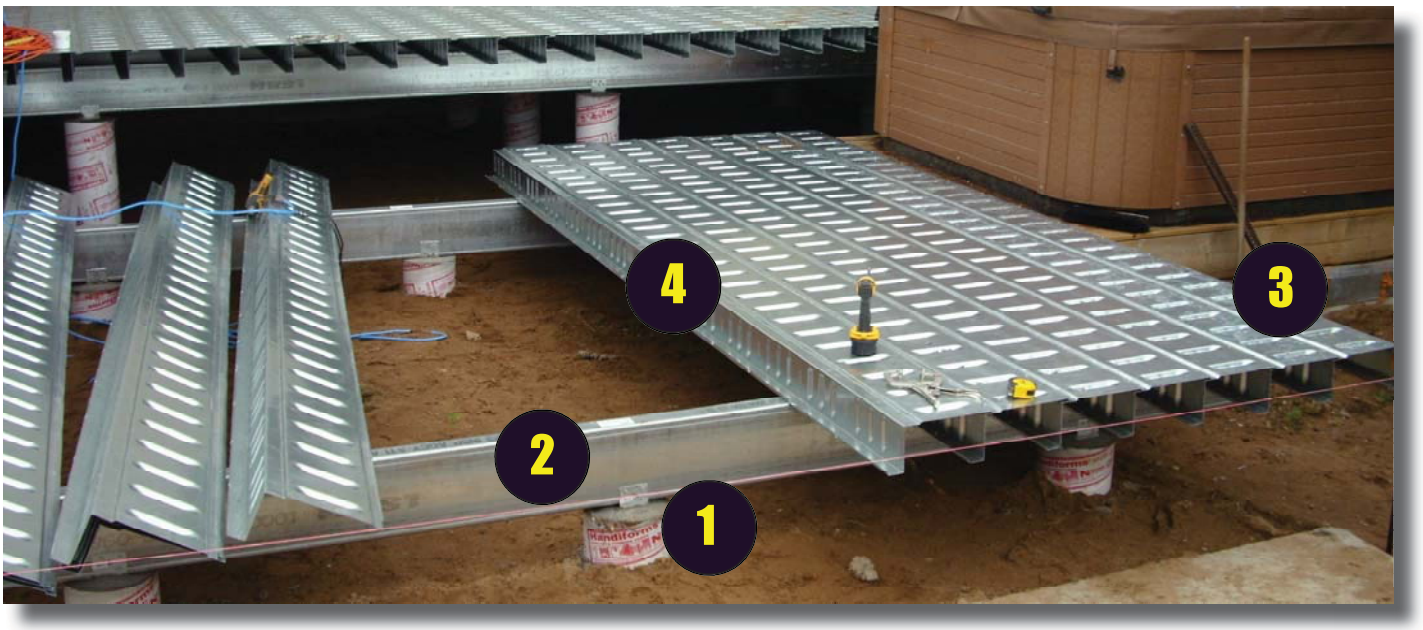
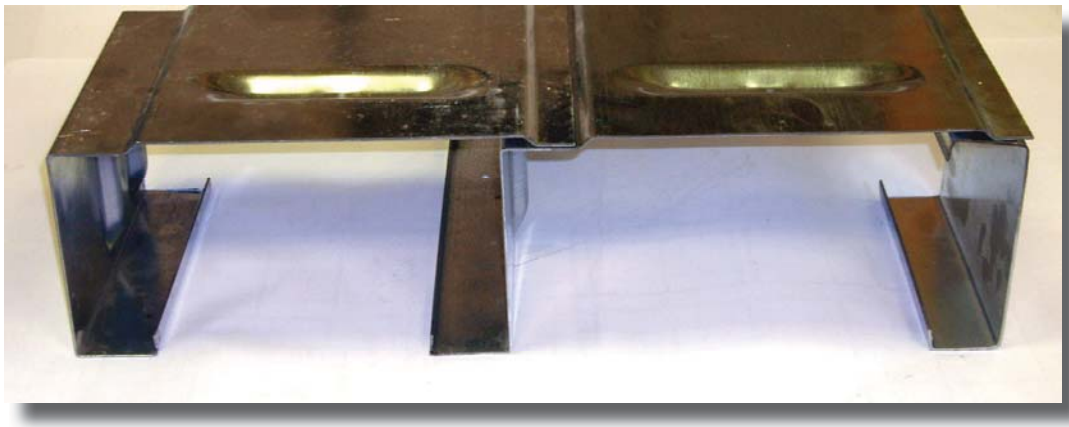


5 Attach the final End Panel to complete the deck assembly using Tek screws spaced not more than 75.0 mm (3 inches) from the end of the panel and not more than 305 mm (12 inches) between screws. Attach the End Panel to the beam from beneath. If this is not accessible, then you may need to drill a 5/8" hole on the top panel and use a driver extension.



6 Angle Cuts. You can design your deck with curves or angles, similar to wood structures. Actually, the 39-inch cantilever with our system is an advantage when designing curves or angles. The steel structure may be cut either before or after assembly using a standard skilsaw with a metal-cutting blade (such as Diablo brand).

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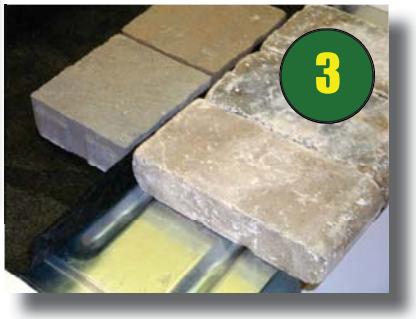
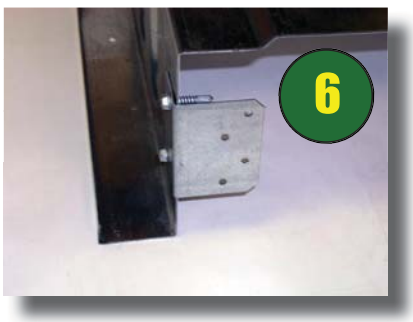
(7) FINISHING TOUCHES





1. Install border pavers along the perimeter using polyurethane or equivalent adhesive, butyl tape adhesive.

2. Install a geotextile fabric over the steel field panels. This fabric will prevent the joining sand from escaping and clogging the drain holes. If pavers are of uneven height, you may screen a thin sand base onto the fabric to accept the uneven paver height.

3. Dry lay the field pavers onto the geotextile fabric, with spacing and pattern according to your design or the paver manufacturer`s directions.

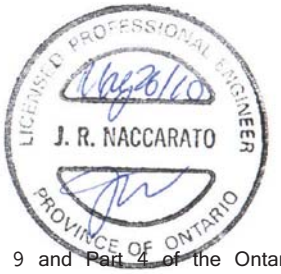
4. Broom in a polymeric sand into the pavers joints following the manufacturer`s instructions.

5. Railing posts should have either an aluminum or steel post base which can be fastened to the PAVERDECK™ system using galvanized bolts 0.250 inch x 1.25 inch conforming to SAE J429 or equivalent. Drill through the paver and through the steel deck, then bolt the post through the deck.

6. Fascia may be selected from traditional materials such as PVC, Wood Composite, or equivalent. Fascia may be screwed directly to the End Panel and to brackets (not supplied) attached to the web of Field Panels.

PAVERDECK™ TECHNICAL SPECIFICATION

EVOLUTIONDECK Inc. is an engineering company authorized by the Association of Professional Engineers of Ontario to offer professional engineering services to the public. This specification has been produced as a general reference to support building officials, architects, engineers, builders and installers with the specification of PAVERDECK building system in residential applications. PAVERDECK platforms designed and constructed pursuant to this specification are in compliance with the Ontario Building Code.



APPLICATION.

For use as exterior or interior platform applications for residential construction under Part 9 and Part 4 of the Ontario Building Code being ONTARIO REGULATION 350/06, "OBC").

DESIGN CRITERIA.

The design of the PAVERDECK™ panels for the ultimate limit state complies with the load combinations given in Table 4.1.3.2, forming part of section 4.1.3.2.(2) of the Ontario Building Code. All values presented in this specification are calculated in accordance with the design requirements of CSA-S136-07 North American Specification for the Design of Cold-Formed Steel Structural Members, as referenced in the Ontario Building Code.

MAXIMUM LOADS.

Dead load (D) = 1.9 kPa (40 psf); Residential Live load (L) = 2.40 kPa (50 psf); Snow/Rain load (S) = 4.0 kPa 83.5 psf); Specified Wind load (W) = -2.0 kPa (-41 psf); Seismic load (E) = 1.2 kPa (25 psf, Sa(.2)= 0.66). The PAVERDECK™ platform system remains elastic and satisfies structural performance requirements for uniform load combinations up to 12.3 kPa (256 psf) at the specified spans.

SERVICE DEFLECTION PERFORMANCE.

Service deflection performance satisfies the L/360 requirements of the OBC and achieves L/395 for 2.87kPa (60 psf) residential platform live uniform load at 3700mm (144 inches) max clear span; (b) and L/1220 for 4.8 kPa (100psf) for stair system live uniform loading.

PLATFORM MAXIMUM CLEAR SPANS.

1. Platform maximum clear span = 3.7 metres (144 inches)@ live UDL <= 2.9 kPa (60psf, residential)
2. Platform maximum cantilever = 1.0 metre (39 inches)
3. Stair system maximum tread clear span = 1.2 metres (48 inches)
4. Stair system maximum cantilever = 305mm (12 inches)

MATERIALS.

The PAVERDECK™ platform is made from galvanized sheet steel manufactured in compliance with ASTM A653/A653M-98 Z275 (G90), with a minimum substrate thickness of 1.5mm (0.060in) and minimum yield strength of 345MPa (50ksi).

FASTENERS.

Panel systems are assembled using M12 x 1 self-drilling screws as described in ESR – Report 1976 (Tek), ER-4780 (Dril-Flex), ER-5454 (Pro-twist), ER-5280 (Grabber) or equivalent. The screwed connections conform to CSA S136-2007 and CSSSBI Technical Bulletin (Dec. 2006), and were validated through independent ITS testing.

ASSEMBLY.

PAVERDECK™ kit platforms are preferably installed as a free-standing deck structure with or without frost footings as is depicted in PJTSPEC001 (freestanding with frost footing)and PJTSPEC002 (freestanding).

FOUNDATIONS.

Compatible foundation designs must comply with the Ontario Building Code, and include:

1. 254 mm (10-inch) diameter concrete columns on expanded footing forms (e.g. Bigfoot). Note the size of the footing form is dependent on local soil bearing conditions, check with local building officials for minimum sizes.
2. helical pin foundation systems in compliance with CCMC 13059-R or equivalent;
3. For heights up to 10 feet, use galvanized or painted HSS steel structural posts with welded/screwed steel end caps: (i)min 76.0 mm (3") diameter x 3.0mm (0.120") wall thickness; (ii) min 76.0 mm (3") square x 2.4mm (0.095") wall thickness; or equivalent.

BEAMS.

Compatible structural beam designs must comply with the Ontario Building Code, and include, at a minimum:

1. Grade 350 W steel in CAN/CSA-G40.21 structural steel beams;
2. CSSBI 800S300-097 (Ixx>14.65 in^4, or equivalent) for uniform live loading <= 2.9 kPa (60psf) and clear spans up to 2.4 metres (10 feet). Maximum cantilever not to exceed 1000mm (39.0 inches).
3. CSSBI 1000S300-097 (Ixx>24.8 in^4 or equivalent) for uniform live loading <= 4.8 kPa (100psf) and clear spans up to 2.8 metres (9 feet). Maximum cantilever not to exceed 915mm (36.0 inches).
4. Beams are supplied with adequate web stiffeners provided at the location of reactions or concentrated loads. Spans are not limited by web crippling. The minimum specification for suitable web stiffeners is galvanized steel stud CSSBI 350S162-054 or equivalent. Beams are required to be secured to the foundation using commercially available structural connectors supplied by Simpson Strong Tie or equivalent.

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