I. Getting Started
Before starting the installation, read these instructions completely and determine the placement of all the interrelated parts of the system. The DEK Drain Underside® system is installed under an existing deck by attaching the panels to the bottom of the joists. Some additional materials are required which are not included as part of the DEK Drain System.

Gutters
DEK Drain is designed to channel water into a collection gutter creating a complete water diversion system. Standard rain gutters are fine. You can match the color and style of the gutters on your home.

Compression Strips (Usually 1X2 Pressure Treated Wood)
These strips will be nailed or screwed to the bottom of all the joists and the ledger board. These strips of wood are attached after the Underside system is stapled to the underside of the framing. The strips compress and hold the system in place and are essential for successful installation. You will need enough strips to cover the bottom of all joists and the ledger board.

The first step in planning your installation is to determine the placement of the collection gutter. The DEK Drain system will be designed to drain to this point. We recommend positioning the gutter along the inside face of the beam as illustrated in Figure 1 below.

FIGURE 1 - OVERVIEW
When ordering your system, select panels which are long enough to extend from the house to the mid-point of the collection gutter. When measuring a bay with an angle feature, be sure to measure the longest side of the angle cut.

II. The Four Parts of the DEK Drain System
All four parts of the DEK Drain system are made of the same flexible and durable rubber membrane. All components are pre-fabricated for both width and length so the only measuring and cutting will be slight end trimming.

1. Headwater Flashing Strip is 12” wide and cut to the length of the ledger board. The Headwater strip is stapled to the bottom edge of the ledger board. It directs the water into the panels. The Headwater Flashing Strip is wrapped with yellow tape.

2. Cap Strips are 4” wide and run the length of the joists. Cap Strips are centered and stapled to the bottom edge of all joists and beneath the Headwater Strip. The Panels will install beneath the Cap Strips. The Cap Strips drain water into the Panels preventing leakage along the joist. Cap Strip is wrapped with orange tape.

3. Panels are self-forming and prefabricated for 12”, 16”, or 24” on-center framing and are pre-cut for both width and length. A pitch of ¼” per foot of run is built into the drain panels. The Panels install to the bottom of the joists and to the bottom side of the Cap Strips.

4. Bibs are sized for 12”, 16”, or 24” framing schedules. The Bibs are installed vertically at the end of the drain panels and above the collection gutter to prevent the water discharge from overshooting the collection gutter. The Bibs are labeled with pink stickers.

III. Tools and Fastening
The only tools needed are:

- Stapler--either a hammer-tacker (also known as a slap stapler) or a pneumatic stapler or electric tool.
- Sharp scissors
- Razor knife
A 1/2” T-50 type staple is recommended. Staples should be at least half an inch long and half an inch wide. You don’t need to use galvanized or stainless steel staples. The staples are only used to hold the system in place until the 1X2 strips are installed. The compression strips will keep the system in place permanently.

All four parts of the DEK Drain system are installed with staples. Spacing of staples must be adequate to hold the product in place. The DEK Drain membrane is self-sealing and the Cap Strips overlap the panel edges to prevent any leaking.

**CAUTION: Important Note About Ledger Board Flashing**
Our Underside system will capture all water which drips through the deck boards from the face of the ledger board and out to the beam. However, the DEK Drain Underside system cannot capture seepage which occurs behind the ledger board.

Proper building practice (and codes in many parts of the country) requires the installation of flashing at the joint where the ledger board intersects the wall of the main structure. Unfortunately, we often find that the deck builder fails to properly flash this critical joint and water penetrates the space between the ledger board and the building. This water runs down the sidewall behind and below the ledger board, leaving stains on the wall and wet areas after a rain.

Our system cannot capture this seepage. It is important that this flow not be dammed or plugged from under the deck. This would serve to trap this water in place and would lead to other problems.

It is strongly recommended that flashing of some type is installed from the top of the deck to correct this condition. If necessary, a separate head end collection gutter could be installed below the ledger board to collect and carry away this seepage.

**IV. The Installation Process**
The DEK Drain system is installed in six steps:

**Step 1--Installing the Headwater Flashing Strip**
With the edge of the Headwater Flashing Strip facing the building and running along the ledger board, fold 1 ½” of the top edge of the Headwater Strip up and over itself. This fold will create a “dam” when the Strip is stapled to the bottom edge of the ledger board. See Figure 3. Hint: Some installers use a standard office paper stapler to staple this fold before stapling the Headwater Strip to the ledger board. (See Photo Below)
Staple the folded edge of the Headwater Strip to the bottom edge of the ledger board. (If there is no ledger board, 2X4s or 2X6s need to be nailed in between and flush with the bottom edges of the joists to provide a base for stapling the Headwater Strip.)

Gently pull the bottom edge of the Headwater Strip (now hanging down from the bottom of the ledger board) out and away from the ledger board (approximately 8”) and staple the Strip to the bottom edge of each joist. The Caps and Panels will install beneath the Headwater Flashing Strip.

Step 2--Installing the Bibs
The Bibs are installed at the Discharge end of each Panel and direct the water into the gutter. It is easier to install the Bibs before the Panels.
The Bib may be stapled to the inside face of the beam. The two edges of the Bib wrap around and attach to the inside face of the two joists that form the bay. The Bib is designed to extend down into the gutter, but not all the way to the bottom of the gutter. Trim the length of the Bib so it will not interfere with the proper flow of water through the gutter. Any water discharging from the DEK Drain panels that would overshoot the gutter will hit the Bib and drain into the gutter.

**Step 3—Installing the Cap Strips**
Center and staple the 4” Cap Strips to the bottom edge of all joists and beneath the Headwater Flashing Strip. The Panels will install beneath the Cap Strips. The Cap Strips drain water into the Panels preventing leakage along the joist. If there are doubled, spliced or sistered joists wider cap MUST be used.

**Step 4—Installing the Panels**

**Positioning and Alignment**
The Panels are pre-cut and self-forming. They are shaped like a trapezoid with one end wider than the other. The narrow or “Head” end (marked with a red label) is positioned under the ledger board with the wider or “Discharge” end (marked with a green label) away from the house. When the Panel is stapled into place, the additional width automatically creates a deeper trough providing the required pitch to drain the water away from the house.

The Panels install to the bottom of the joists and ledger board and to the bottom side of the Cap Strips. Take care during the installation that the Panels form a smooth, descending trough. It is important to prevent wrinkles, bunches or “gathers.”

Start the Head end of a Panel in any bay. Align the Head end of the panel along the bottom edge of the ledger board. At 1 ½” from the Head end of the Panel, firmly pull the outside edges of the Panel across the opening of the bay and align the outside edges of the Panel with the outside edge of each joist and lightly tack in place. The Panel will be nearly flush with the bottom edge of the joists at this point.
Be sure to allow enough material to cover the bottom edge of the ledger board, but do not staple the Head end of the Panel to the bottom of the ledger board at this time. **Align so that the outside edges of the Panel line up with the outside edges of the two joists.** Lightly staple the Panel edges to the bottom of joists and to the underside of the Cap Strips. **Do not use the leading edge (Head End) of the Panel for alignment, as it may not be square.**

Move down the Panel a few feet, gently pull the panel toward the beam and lightly tack the Panel to the bottom of the joists, lining up the outside edges of the Panels with the outside edges of the joists. You will see the trough beginning to take shape. Be sure the trough is smooth and descending.

If a wrinkle develops, loosen one Panel edge and move it slightly toward or away from the building until the alignment is corrected. Continue this operation a few feet at a time, aligning both edges of the Panel. When you have reached the Discharge end of the Panel, inspect the Panel for proper orientation.

If the trough is smoothly descending and has no wrinkles, bunches or “gathers,” go back and staple the head end of the Panel to the bottom of the ledger board. Go down each joist and staple the Panel firmly in place. **You cannot use too many staples.**

Adjacent Panels will install in a similar manner. Note that the Panels overlap each other on the bottom of a common joist. Although you may not be able to see the hidden edge of the common joist, it is easily felt by hand. **It is important that all Panels are aligned with both outside edges of the joists.** Continue this operation for each of the bays.

**Non-Standard Bays**
Often there will be one bay which is a different width from the standard framing schedule. If the opening is narrower than the others, a standard Panel may be used. It will hang down further below the bottom of the joists. If a ceiling will be mounted beneath the DEK Drain system, this may cause difficulty. The panel may need to be trimmed in the field or a custom panel may be ordered from DEK Drain.

If the opening is wider than the other bays, a larger size Panel **MUST** be used or a custom Panel fabricated. **NEVER STRETCH A PANEL WIDER THAN THE SPECIFIED WIDTH (12”, 16”, 24” framing schedules).** Alternatively, an additional joist may be added, forming two smaller bays.
Step 5—Installing the 1 X 2s
When all of the Panels have been installed and inspected, nail or screw the 1 X 2s to the bottom edge of the ledger board at a right angle to the joists. Next install 1 X 2s to the bottom edge of all joists. The 1 X 2s sandwich together and compress the Panels and the Cap Strips.

ALTERNATIVE: Another method for installation of the Underside Panels is the “Pre-Mounted Approach”. The concept is to secure the panels to the 1 X 2s before installing the panels. The panel edges are lined up flush with the outside edge of the 1 X 2 and stapled in place for ease of installation. This way, the panels and the 1 X 2s are installed in one operation.

Allow adequate membrane material at the head end to span the lower edge of the ledger board. Note that the 1 X 2s stop at the head end of the joist so as to allow for the installation of another 1 X 2 along the ledger board. If using this alternative method of installation, note that this requires a double set of 1 X 2s and will build down the joist an additional ¾” or so.

It is important that the 1 X 2s are secured tightly up against the bottom of the joists. Nails or screws must penetrate into the joist a minimum of one inch (1”). The nails or screws should be no more than 4” apart.
Step 6--Trimming the Discharge End of the Panel
The discharge end of the Panel should be oriented above the mouth of the collection gutter and trimmed straight across so that the discharge will empty into the collection gutter. The Panel should be separated from the Bib by at least 1”.

Sometimes the discharging water wants to “curl” or wrap around the bottom edge of the panel. A thin bead of caulk across the underside of the panel will break the surface tension and prevent “curling”. Alternately, a “tongue” may be cut in the panel at the bottom of the trough and above the gutter. Cut a slice 2” wide by 2” long in the trough and allow it to dangle down into the mouth of the gutter.

Access for Maintenance
It is recommended that several decking boards near the house be secured by screws so that the boards may be taken up from time to time. This will provide access to the Panels for flushing of debris which may have fallen through the deck boards. A standard garden hose is usually all that is needed.

Alternately, a hose stream may be introduced from the discharge end of the panels to flush the debris from the panels. It is also a good idea to allow access to the high end of the gutter so it can be flushed out from time to time.

Finished Ceilings with Underside
With the Underside installation, the trough formed by the panels will extend down below the joists. Some contractors use 2 X 4s to extend the joists down below the panels, providing support for a beautiful finished ceiling.

Thank you for choosing the DEK Drain® water diversion system. If you have questions regarding installation, please contact us. Our staff is available Monday through Friday 9:00 AM to 4:30 PM Eastern Time to answer your questions. You can also email us at info@dekdrain.com.

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