



DRiBOND Concrete Overlay Solutions, LLC

DRiBOND Concrete Overlay Solutions, LLC
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INSTALLATION GUIDE – DRIVEWAY, PATIO, WALKWAY, LANAI

To ensure use of the most recent installation guide, please visit DRiBONDsolutions.com

DRiBOND® is an internationally patented polymer-modified bonding agent specifically developed to facilitate hardscape product overlays on stable concrete surfaces. Millions of square feet of hardscape materials have been installed over driveways, pool decks, patios, lanais, walkways and commercial applications using DRiBOND® dry set technology. DRiBOND® is an excellent substitute for wet mortar bed overlay applications saving time and effort as compared to traditional wet bed systems.

PRODUCT SPECIFICATIONS

ASTM C579, Compressive Strength: 6,850 psi

ASTM C666, Freeze-Thaw Ratio: 94%

ASTM C308, Final Set Time: 5 hours, 40 minutes

Recommended Depth: 3/8 inch

Maximum Depth Variance: 5/8 inch

HAZARDOUS MATERIAL NOTICE

DRiBOND® is a cementitious product containing silica and Portland cement. Appropriate protective measures should be undertaken when handling the product. OSHA safety guidelines, including OSHA FS 3681, should be followed when working with DRiBOND®. Reference the DRiBOND® website Safety Data Sheet, Education Center, and Technical Data Sheet for additional information.

CONSIDERATIONS BEFORE COMMENCING YOUR DRiBOND® CONCRETE OVERLAY PROJECT

This installation guide is intended as an overview of the DRiBOND® application process. Industry guidelines, local building regulations, hardscape manufacturer instructions, as well as guidance from the American Concrete Institute and OSHA should be considered when performing a DRiBOND® hardscape installation. To ensure a thorough understanding of the DRiBOND® process, visit dribondsolutions.com to reference the Material Safety Data Sheet, Education Center, and Technical Data Sheet. Educational videos and FAQ information can be found at the DRiBOND® website Education Center.

Appropriate protective measures must be used pursuant to OSHA guidelines. It is the user's responsibility to determine the suitability and compatibility of this product for the intended use. DRiBOND® should not be mixed with other materials. The substitution, alteration, or addition of any foreign matter or material to DRiBOND® voids all warranty considerations.

A solid, stable and clean concrete surface is required before using DRiBOND® to overlay hardscape. DRiBOND® will satisfactorily fill and repair concrete stress cracks. Any faults in the concrete surface beyond stress cracks should be addressed before bonding hardscape to the concrete.

DRiBOND® is water activated and must be protected against moisture until it is applied and covered with hardscape material (rain conditions should be considered and sprinkler systems that reach the subject concrete should be turned off).

DRiBOND® is a fine-grained cementitious product. With larger format, heavier hardscape material, an extended application depth of more than ½ inch is not recommended due to the fine-grained nature of DRiBOND®.

Of particular importance in cold-weather regions subject to freeze-thaw conditions, ALWAYS RESPECT FULL DEPTH EXPANSION JOINTS TO ALLOW FOR MOVEMENT OF INDEPENDENT CONCRETE DECKS! To ensure optimal curing, DRiBOND® installations should only be completed when the minimum daily temperature is at least 35 degrees Fahrenheit for 7 days following installation.

DRiBOND® is a nonpermeable product, and caution should be used when installing permeable hardscape materials (such as travertine) over DRiBOND® in areas subject to freeze-thaw conditions.

In freeze-thaw condition areas, a durable, waterproof (or highly water-resistant), jointing material must be used between pavers and properly maintained. Exterior-grade silicone sealant must be used around edges and transitions where water infiltration is a concern.

TYPICAL DRiBOND® INSTALLATION ACCESSORIES

- 3/4" I.D. contractor grade hose. Long enough to reach all areas of the jobsite!
- "Shower Head" water nozzle
- Measuring tape
- Chalk line
- Leveling and squaring guide such as a long straight piece of 2 by 4
- Demolition hammer or chipping hammer with 2" or 3" chisel
- Wheelbarrow or any suitable mixing container
- Cut-off saw with diamond blade
- DRiBOND ST300 roller screed tool (available at your DRiBOND dealer)
- 48 oz. cross pein hammer
- Rubber mallet
- Push broom
- Shovel or garden hoe
- Mixing whip and drill (optional)
- Brick or finishing trowel



Required protective equipment and systems that meet OSHA's 3681 Respirable Crystalline Silica Standard.

INSTALLATION GUIDANCE

Surface Preparation:

DRiBOND® can be used over minor stress cracks. Any crack or separation 3/4" wide or larger must be filled with 6,000 psi fast-set concrete. Large cracks and damaged sections should be cut to full depth as shown below and repaired with 6,000 psi fast-set concrete.

For extensive damage or when changing the footprint of the surface, follow American Concrete Institute guidance for concrete installation and repair.

A crack isolation membrane may be required for your repair.



Once damaged concrete is removed, cut V-shaped notches into the existing concrete substrate using a wet saw and diamond blade. This will help tie-in the new concrete to the existing concrete.

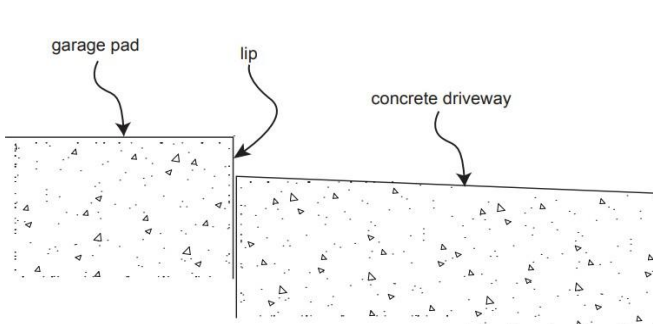


Next, fill the removed area with 6,000 psi fast set concrete. Completely fill in the notches that were cut in the existing concrete and allow the newly laid concrete to cure.

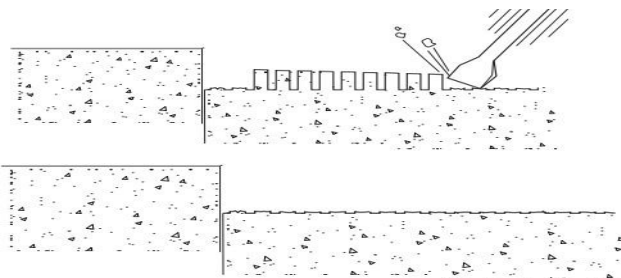


Remove stains and oil spots with appropriate stain removers and degreasers. Power wash the concrete surface to remove any dirt from the area to be covered. It is important to apply DRiBOND® over a clean dry surface. Be sure to let the surface dry completely before applying DRiBOND®.

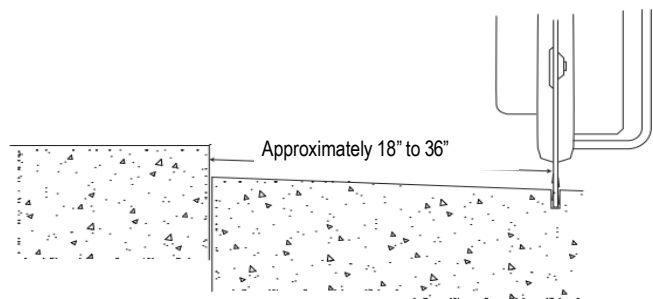
Transition Areas: How to tie into the garage slab, sidewalks, streets, etc



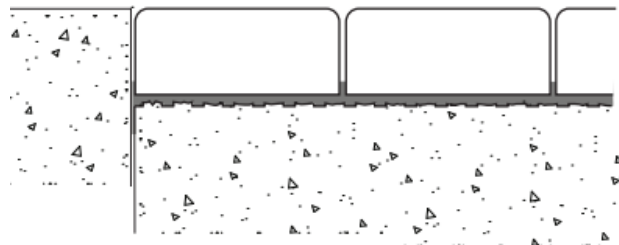
Make cuts parallel to the garage door opening with a cut-off saw at approximately 18" to 36" from the opening. The width will vary based on the concrete slope, hardscape height, border paver width (or length), DRiBOND® height, transition area and height of the slab being tied into. Create a smooth transition based on this information. Maintain slope away from the garage door opening or consider a french (deco) drain to divert water away from garage.



Once all cuts have been completed, you will need to utilize a chipping hammer with chisel to remove the concrete between cuts. Gently chisel away the concrete at the cuts closest to the garage door transition lip. Remove all chiseled concrete. A rough surface is O.K.

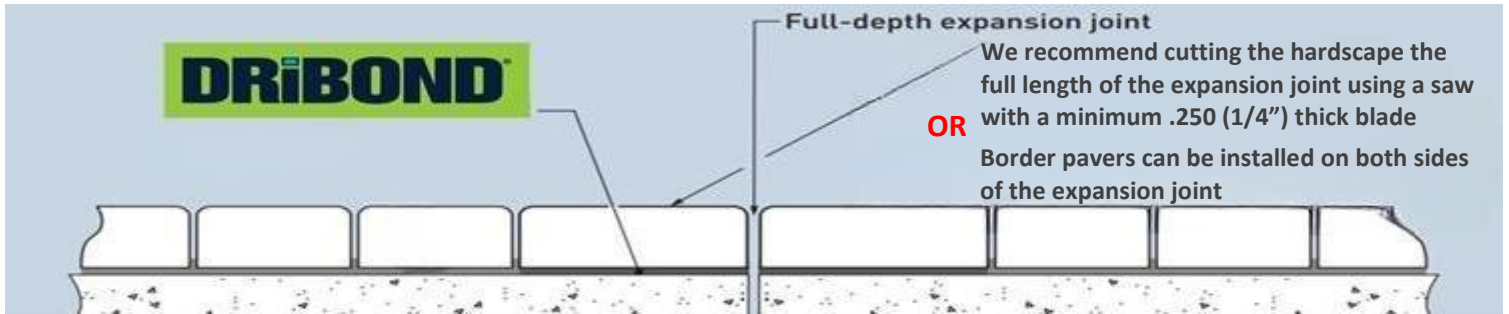


Start by making the first cuts at a depth of 3/8" at the furthest point away from the opening, and make progressively deeper parallel cuts as you get closer to the opening, where the final cut will be to the depth required to make for a smooth, weatherproof transition. The number of parallel cuts that must be made will depend on the height of the lip, and the distance from the transition area into the garage to where the first cut is made.



When ready in the installation process, mix the required amount of DRiBOND® with water and neatly trowel into the transition area as required. Proceed to lay the field/border pavers at the transition area, as well as tamping and leveling them lightly to the desired slope, seamlessly creating a smooth transition.

**HARDSCAPE MATERIALS SHOULD NOT BE INSTALLED (OVERLAID) OVER FULL-DEPTH EXPANSION JOINTS
WITHOUT CUTTING OVER THE JOINTS SO THAT THE JOINTS ARE NOT OVERLAID!**



Of critical importance in freeze/thaw zones, overlaid hardscape materials must be cut with a wet-cut floor saw following the length of a full-depth expansion joint at 1/4" width or wider after DRiBOND® comes to final set after a minimum 6 hours. Alternatively, expansion joints can be left exposed by laying border pavers along each side of each expansion joint in such a manner that the expansion joint is not covered.

Independent concrete decks must be allowed to rise and fall as freeze/thaw cycles take place!

DRiBOND Product & Hardscape Overlay Application:



Cut two or three grooves into the existing concrete slab at the border. This enhances bond strength when border pavers are installed.

Open the DRiBOND® bags and carefully pour dry DRiBOND® over the concrete surface.



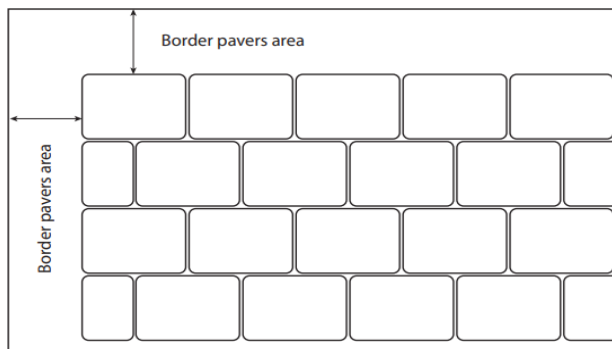
Spread DRiBOND® with the ST300 Roller Screed Tool at the recommended thickness of 3/8". For uneven surfaces or dips, consider increasing the screeded thickness to a maximum 1" to level out the surface. Do not compact your screeded DRiBOND®.



Without walking on DRiBOND®, lay pavers square to the structure or create a right angle to start the field according to the selected pattern.



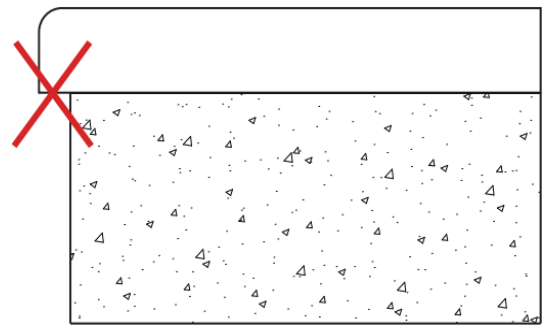
Every 10 rows use a straight edge to true up lines.



Leave a border width of one full border paver from each edge to lay the wet set border pavers. Extend all overlaid hardscape material over the border paver edge distance from each edge. All hardscape material placed within the zone of a border paver will be cut and removed to allow the border paver material to be wet set. As per the above right picture, sections of PVC pipe can be connected to mark a radius cut line.



Wet set the border pavers using a ½" notch trowel with a wet mix of DRiBOND® to create a water retention border. There should be no air pockets or voids under the wet-set border tiles.



IMPORTANT

Never allow border pavers to protrude past the edge of the existing concrete.



Remove any excess product from the edge of the finished paved area. The above photo shows a proper border paver installation.



Tie the pavers into the street surface and other areas such as sidewalks by creating a transition area where necessary to avoid a tripping hazard.

Prior to applying water to activate the DRiBOND bonding agent, carefully remove any excess **dry** DRiBOND off the hardscape surface with a broom or leaf blower to prevent DRiBOND from hardening on top of the overlaid hardscape material. Remove any wet DRiBOND from surfaces with a damp rag or wet brush before it dries.

After all border pavers have been wet set installed, activate DRiBOND® by evenly wetting the overlaid surface using a shower nozzle on a 3/4" I.D. contractor hose. It is very important to adequately water DRiBOND® as directed in the following Watering Chart to ensure that DRiBOND's bonding agent is appropriately activated. It is better to slightly overwater than risk underwatering.

Given the non-absorbent and impermeable nature of porcelain, it is particularly important to adequately apply water to a porcelain overlaid surface to ensure the wicking, capillary action adequately moistens DRiBOND to ensure proper activation of its bonding properties.

Watering Chart *

Watering times vary depending on the paver size (surface area) and DRiBOND® depth. Use the following tables to calculate the recommended total watering duration to ensure proper saturation and DRiBOND® activation. Note that these watering chart guidelines are based on using a shower nozzle on a 3/4" I.D. contractor hose with good water pressure/flow.

If installing multi-size pavers, use the largest size piece for the calculation.

Please be aware that these times are rough estimates and may change based on your onsite need. *

PAVER SIZE	WATERING DURATION		DRiBOND DEPTH		WATERING DURATION
Up to 12" X 12"	15 minutes		Up to 1/4"		0 minutes
14" X 14"	18 minutes		3/8"		5 minutes
16" X 16"	21 minutes		1/2"		10 minutes
18" X 18"	24 minutes		5/8"		15 minutes
20" X 20"	27 minutes		3/4"		20 minutes
22" X 22"	30 minutes		7/8"		25 minutes
24" X 24"	33 minutes		1"		30 minutes
24" X 36"	38 minutes				

These tables are based on 500 SF coverage areas

Example Calculation (highlighted in green on the tables above)

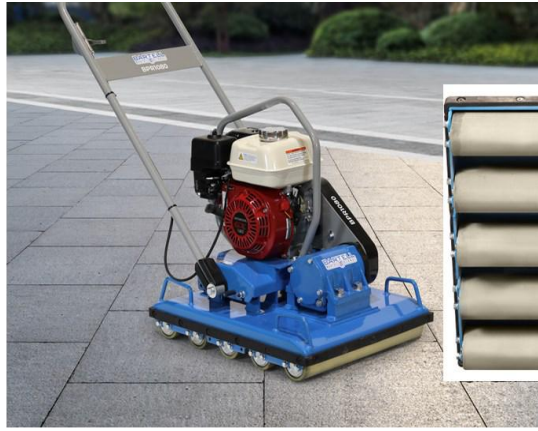
For a 1000 sq. ft. area with 16" x 16" pavers and 3/8" DRiBOND® depth:
 $(21 \text{ min.} + 5 \text{ min.}) \times 2 (1000 / 500) = 52 \text{ minutes watering time}$

On projects where watering times exceed 3 hours, sprinklers may be used. However, it is important to ensure they are continuously wetting all areas evenly. In these situations, it is recommended to water by hand using a shower nozzle on a hose for a minimum of 2 hours before switching to sprinklers.

* The above watering chart is intended as a guide. Actual required watering times will be impacted by installation conditions. To determine if enough water has been applied to properly activate DRiBOND®, take a rubber mallet and tap on the center of the hardscape that has been applied. If it has a hollow sound when you thump it, add more water. If the tapping feels solid with a dull sound it should be sufficiently watered. You can also carefully lift a hardscape piece to ensure it is adequately wet beneath it. It is better to slightly overwater than risk underwatering.

Joint Installation and Maintenance

Joint sands should not be used with porcelain paver installations (see below).



Always Install Joint Material Per Manufacturer Instructions

Mason or paver sand: Spread jointing sand on the pavers. Sweep the jointing sand across the entire area and fill the joints. While pushing the sand into the joints, soak entire paved area a second time to help consolidate the joint material. Not recommended for freeze – thaw zones.

Polymeric sand: Follow the manufacturer's instructions and recommendations. Note: Polymeric sand can be installed 72 hours after the DRiBOND hardscape/pavers installation (weather permitting). Normally used in freeze/thaw zones. Use a vibratory roller compactor to consolidate the polymeric sand in the joints.

Grout or mortar joints: Apply as per manufacturer's instructions.

Sonolastic w/ backer rod joints: Apply as per manufacturer's instructions.

A durable, waterproof (or highly water-resistant), stain resistant jointing material should be used between pavers and properly maintained over time in accordance with manufacturer's instructions.

Exterior-grade silicone sealant should be used and properly maintained around edges and transitions where water infiltration is a concern.

CONSIDERATIONS FOR PORCELAIN PAVERS

This section is not intended to present comprehensive guidance on the installation of exterior porcelain pavers. Follow your porcelain manufacturer installation instructions. Given the non-absorbent and impermeable nature of porcelain, it is particularly important to adequately apply water to a porcelain overlaid surface to ensure the wicking, capillary action adequately moistens DRiBOND to ensure proper activation of its bonding properties.

Non-vehicular Use

Porcelain pavers used for non-vehicular pedestrian traffic should have a thickness of 2 CM+. No voids should be present under the hardscape being applied.

Vehicular Use

Porcelain pavers used for vehicular applications should have a thickness of 2 CM+. No voids should be present under the hardscape being applied. Due to the rigidity of porcelain pavers, vehicular traffic porcelain paver sizes should not exceed 15" x 15".

Use of Spacers and Joint (Grout Line) Finishing

Spacers must always be used when installing porcelain pavers as porcelain pavers must never abut one other.

Spaces between pavers must be grouted with a quality exterior tile grout. Follow the grout manufacturer's grouting instructions. Grout must be properly maintained over time in accordance with manufacturer's instructions.

Exterior-grade silicone sealant must be used and properly maintained around edges and transitions where water infiltration is a concern.

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