Krystol® Waterstop System

Waterproofing Tie Holes and Penetrations

DESCRIPTION:

Follow these instructions to waterproof tie holes and pipe penetrations.

Drawings, CAD Details and Specification Language: visit www.kryton.com/technical-info/ or contact your authorized Kryton representative.

LIMITATIONS

Not for use at expansion joints. The Krystol Waterstop System is effective for rigid structures only and may not reliably seal joints that experience variable loading or repeated movement. Air and surface temperatures at the time of application must be at least 4°C (40°F).

SAFETY PERCAUTIONS

Read and follow the Safety Data Sheets (SDS) for these products (at www.Kryton.com). For professional use only. Krystol Waterstop Grout becomes highly caustic when mixed with water or perspiration. Avoid contact with skin or eyes. Avoid breathing dust. Wear long sleeves, safety goggles and impervious gloves.

STEP 1: PREPARE TIE HOLES & PIPE PENETRATIONS

Krytonite Swelling Waterstop:

1. For enhanced protection, install a strip of Krytonite Swelling Waterstop around the pipe before placing concrete. Use a high quality, exterior grade construction adhesive based on Polyurethane (PU) or Modified Silane (MS-Hybrid) to install Krytonite Swelling Waterstop. Apply a 6 mm (1/4 inch) bead of adhesive around the center of the pipe, and press the Krytonite strip into it. Ensure 65 mm (2.5 inches) of concrete cover in all directions. Butt ends tightly together. Small diameter pipes may need tie wire to help hold the strip in place.

IMPORTANT: Contact with water may cause the strip to swell and lose bond with the adhesive. If this occurs, allow the expanded material to dry until it returns to its original size and reinstall with new adhesive.

Pipe Penetrations:

1. Use a sharp 25 mm (1 in.) square chisel and chip out a chase that is 40 mm (1.5 in.) deep by 25 mm (1 in.) wide. The shape of the chase is critical to your success. The chase must be square shaped and deeper than it is wide. If the concrete breaks apart near the surface, you must chisel deeper to obtain the required 25 mm by 40 mm (1 in. by 1.5 in.) size and shape.

   TIP: When chiseling, do not place the chisel inside the chase. Instead, place the chisel on the concrete surface about one inch ahead of the chase. Direct chisel pressure back towards the chase so the piece being removed falls into the chase. Chisel to the full depth of 40 mm (1.5 in.) before moving on. This method is the most productive and requires the least effort.

   NOTE: Avoid chiseling in new construction by securing a flexible form made of foam or other suitable material around the pipe before placing concrete.

Tie Holes: Remove plastic cones, snap-ties and tapered rods from the hardened concrete.

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STEP 2A: CONCRETE SURFACE PREPARATION

1. Remove keyway forms from the hardened concrete. Ensure no foam remains in the keyway.
2. Inspect for rock pockets, or any part of the keyway that is filled concrete but should not be. Chip these areas out using a sharp, flat chisel. Ensure edges are square and not feathered.
3. Clean the keyway by high-pressure water blasting, or use a wire brush and rinse until very clean. Use a de-greaser if needed to remove form release agents.

STEP 2B: PIPE SURFACE PREPARATION

Metal Pipes: Clean and roughen the area that will be in contact with Krystol Waterstop Grout. Remove all grease, oil, corrosion, and scale. Abrade by coarse sanding or sandblasting to achieve a coarse surface profile.

PVC or ABS Pipes: Apply a bonding layer of silica sand to the pipe using an appropriate joint cement (PVC or ABS joint cement).

1. Apply a heavy coating of joint cement to the pipe. Immediately cast dry silica sand over the joint cement until completely covered.
2. Allow the joint cement to cure then vacuum away any loose sand.

STEP 3: INSTALL KRYSTOL WATERSTOP GROUT

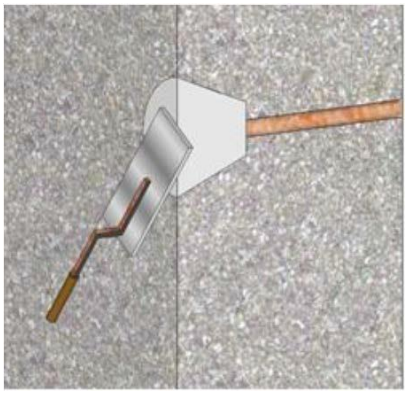
NOTE: Install Krystol Waterstop Grout at any time, but for best results, wait 28 days or longer to allow concrete drying shrinkage to take place first.

IMPORTANT: Only proceed if the keyway is NOT leaking water. If it is leaking, stop the leak by installing 12 mm (0.5 inches) of Krystol Plug before finishing with Krystol Waterstop Grout.

1. Bring the concrete to a saturated surface-dry (SSD) condition. This means the concrete is saturated with water, but no free water remains at the surface. Thoroughly soak the keyway with water; then remove excess water with a sponge just before installing Krystol Waterstop Grout.
2. Mix Krystol Waterstop Grout as follows: Slowly add powder to water while mixing (approximately 4.5 parts powder to 1 part clean water by volume) and mix thoroughly. The mixture may appear dry at first, but will become workable when fully mixed. The grout should be sag free and stiff enough to hold its shape, but still easy to handle and trowel. Mix only as much as you can place in 30 minutes. Tightly pack Krystol Waterstop Grout into the keyway so it is flush with the surface.

NOTE: After mixing, the material may stiffen in the pail. Do not add more water. Remixing will make the grout easy to work with again.

IMPORTANT: Protect the joint from rain and rapid drying. Use plastic sheeting to protect from rain, sun and wind until the grout hardens (approx. 1 hour at 20°C). Once hardened, protect from freezing for 24 hours, and keep damp for 48 hours.



Tie Hole

Pipe Penetration

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APPLICATION INSTRUCTION

Construction Joints & Details

4.17

SMART CONCRETE®

COVERAGE

Material	Coverage
Construction Adhesive	Most construction adhesives yield 8-10 m (26-32 ft.) per tube for a 6 mm (1/4 inch) bead.
Krytonite Swelling Waterstop	50 m (164 ft.) per/box; 5 rolls @ 10 m (33 ft.) per/roll.
Krystol Waterstop Grout	One 25 kg (55 lb. pail) will yield approximately 13 liters (0.46 cubic feet) of grout. Approximate lineal coverage: Keyway Size: — Coverage per pail 25x25 mm (1x1 inches) — 21 m (68 feet) 25x40 mm (1x1.5 inches) — 14 m (46 feet) 40x40x30 mm (1.5x1.5x1.25 inches) — 10 m (33 feet) **Consult a Kryton Representative to determine the best keyway size for your project.**

TOOLS & MATERIALS

- Clean water supply
- Mixing bucket, drill and mortar paddle
- Margin trowel
- Chipping hammer
- 25 mm (1 in.) square chisel blade
- Dry silica sand
- Pipe Cement
- Caulking gun, scissors, tie wire
- Construction Adhesive

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