

Krytol® Waterstop System

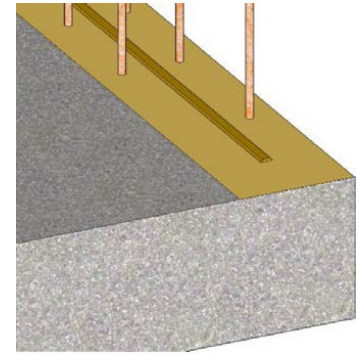
Waterproofing Horizontal & Vertical Construction Joints – Internal Swelling Method

DESCRIPTION:

Follow these instructions to waterproof horizontal and vertical construction joints with the Internal Swelling Method, using Krytonite Swelling Waterstop and Krytol Waterstop Treatment.

NOTE: Krytonite Swelling Waterstop is available in a standard yellow version and a rain protected blue version. The standard yellow version must be protected from rain until covered in concrete. The blue version can resist heavy rain for at least 24 hours.

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



LIMITATIONS:

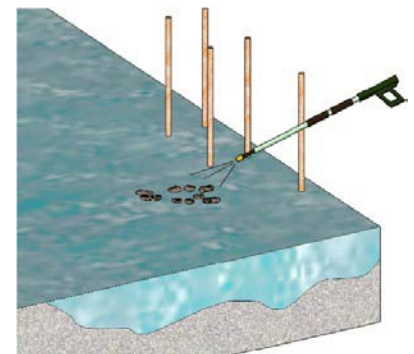
Not for use at expansion joints. The Krytol Waterstop System is effective for rigid structures only and may not reliably seal joints that experience variable loading or repeated movement. Not compatible with stay-in-place metal mesh formwork. Air and surface temperatures at the time of application must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

SAFETY PRECAUTIONS

Read and follow the Safety Data Sheets (SDS) for these products (at www.Kryton.com). For professional use only. Krytol Waterstop Treatment 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.

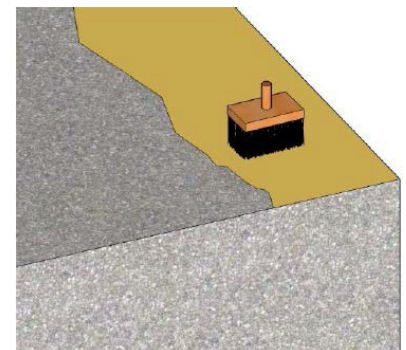
STEP 1: SURFACE PREPARATION

1. Joints must be level and sound. Use a chipping hammer to level areas that are very rough or uneven. Chip out rock pockets using a sharp, flat chisel (ensure edges are square and not feathered) and repair with Krytol Waterstop Grout (see Step 7). **TIP:** Forming joints so they are sound and level while the concrete is fresh will eliminate the need to do this after it has hardened.
2. Clean joints by high-pressure water blasting, or use a wire brush and rinse until very clean. Remove laitance, oils, curing compounds or anything that may interfere with bonding. Use a de-greaser if needed to remove form release agents. A final ICRI Concrete Surface Profile (CSP) of 1-3 is adequate.



STEP 2: APPLY KRYSTOL WATERSTOP TREATMENT

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 surface with water; then remove excess water with a sponge just before applying Krytol Waterstop Treatment. **TIP:** Water blasting is effective at cleaning and saturating the joint in one-step.
2. Mix Krytol Waterstop Treatment to a thick but flowing paste (approximately 3 parts powder to 1 part clean water by volume). The paste will seem very stiff at first, but will become thinner when fully mixed. Mix only as much as you can apply within 30 minutes.



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3. Use a concrete brush to coat the entire joint. Ensure the Treatment fills all surface voids and is at about 1 mm (40 mil) thick. Do not allow Treatment to build up on reinforcement. **NOTE:** After mixing, the material may thicken in the pail. Do not add more water. Remixing will make the material easy to spread again.

SHOTCRETE TIP: You can apply Treatment to end-of-day shotcrete joints before the shotcrete fully hardens. Cut back and shape the joint, then lightly dampen the surface and apply Treatment.

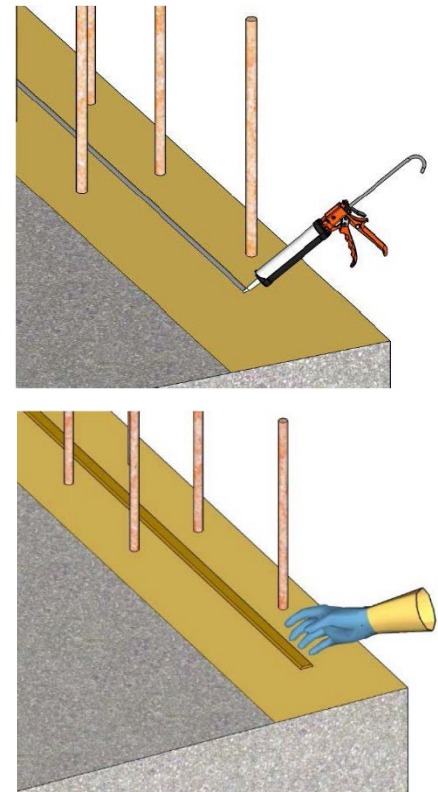
IMPORTANT: Protect the joint from rain and rapid drying. Use plastic sheeting to protect from rain, sun and wind until the Treatment has hardened (approx. 2.5 hours at 20°C). Once hardened, protect from freezing for 24 hours, and keep damp for 24 hours or until Krytonite Swelling Waterstop is installed. Do not use curing compounds.

STEP 3: INSTALL KRYTONITE SWELLING WATERSTOP

IMPORTANT: Install Krytonite after the Treatment has hardened at least enough to resist gouging from a fingernail. Ensure 65 mm (2.5 inches) of concrete cover in all directions. Installing too close to the outside edge may damage to the concrete. Leave about 25 mm (1 inch) between the Krytonite and rebar to prevent void spaces.

1. Apply a 6 mm (1/4 in.) bead of Krytonite Adhesive at or near the center of the joint and press the Krytonite strip into it. Do not allow time for the adhesive to form a skin. Use enough adhesive so it squeezes out the sides when Krytonite is pressed down. Rough surfaces will require more adhesive. Alternatively (or in addition), nails can be used to secure the waterstop (approx. three nails per meter; one nail per foot). Cut Krytonite to length using scissors. Butt ends tightly together (do not overlap). Mitre corners by cutting both strips at an angle. Allow adhesive to cure before pouring concrete.

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.



STEP 4: PLACE AND CONSOLIDATE CONCRETE

Place concrete over the joint as normal, taking care not to dislodge Krytonite during placement. Allow concrete to fall directly over the joint, and avoid shooting shotcrete directly at the side of the Krytonite strip. To achieve a waterproof joint:

1. Remove debris and water from the joint before placing concrete.
2. Do not let form release oil contaminate the joint.
3. Remove form spreaders (if present) as the concrete is placed.
4. Place and vibrate concrete following ACI 309R - Guide for Consolidation of Concrete.
5. Place shotcrete using an ACI certified nozzle crew following ACI 506R – Guide to Shotcrete.
6. Cure following ACI 308.1 (Specification for Curing Concrete) taking measures to prevent rapid drying.

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COVERAGE

Material	Coverage										
Krytonite Adhesive	8-10 m (26-32 ft.) per tube										
Krytonite Swelling Waterstop	50 m (164 ft.) per/box; 5 rolls @ 10 m (33 ft.) per/roll.										
Krystol Waterstop Treatment (Applied at 1.0 kg/m ² (0.2 lb. /sq.ft.))	One 25 kg (55 lb. pail) will cover approximately 25 m ² (270 square feet). Approximate lineal coverage: <table border="1"><thead><tr><th><u>Joint Width:</u></th><th><u>Coverage per Pail</u></th></tr></thead><tbody><tr><td>150 mm (6 inches)</td><td>164 m (540 feet)</td></tr><tr><td>200 mm (8 inches)</td><td>125 m (405 feet)</td></tr><tr><td>250 mm (10 inches)</td><td>100 m (325 feet)</td></tr><tr><td>300 mm (12 inches)</td><td>82 m (270 feet)</td></tr></tbody></table>	<u>Joint Width:</u>	<u>Coverage per Pail</u>	150 mm (6 inches)	164 m (540 feet)	200 mm (8 inches)	125 m (405 feet)	250 mm (10 inches)	100 m (325 feet)	300 mm (12 inches)	82 m (270 feet)
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TOOLS & MATERIALS

- Clean water supply
- Mixing bucket, drill and mortar paddle
- Natural bristle concrete brush
- Water spray and towel/sponge
- Margin trowel
- High pressure water blaster
- Measuring cups
- Caulking gun
- Scissors