



Application Instructions

Application Instruction 202

Krystol® Waterstop System (External Method)

SCOPE

Application Instruction 202 details the procedure to properly install the Krystol® Waterstop System to concrete construction joints using the external wedge method of application. The Krystol Waterstop System is installed in place of other less reliable joint systems and allows for flexible scheduling and easy inspection.

WHERE TO USE

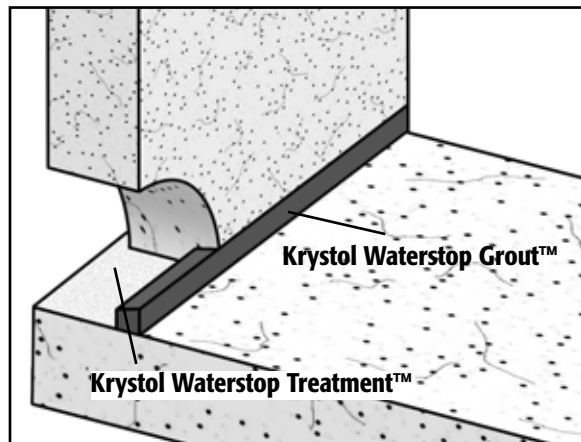
Follow these instructions for construction joints such as slab-to-slab, wall-to-wall or slab-to-wall (slab is inboard of wall). For wall-to-slab intersections (wall sits on slab), it is recommended that the internal installation method described in Application Instruction 201 be followed.

LIMITATIONS

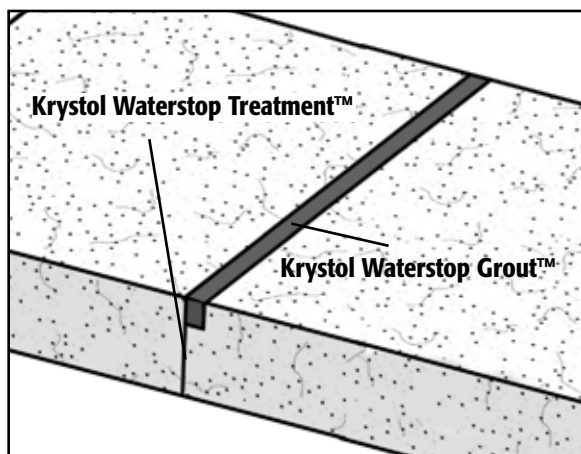
The Krystol Waterstop System is intended for non-moving joints only. For moving joints, use an engineered expansion joint.

SAFETY PRECAUTIONS

For professional use only. These products contain Portland cement and will become caustic when mixed with water or perspiration. Avoid contact with skin and eyes. Wear protective clothing including goggles, impervious gloves and long sleeves. See the Material Safety Data Sheets for these products.



Wall-to-slab (or rotate picture 90° for wall-to-wall view)
*instructions are the same for all configurations



Slab-to-slab (or rotate picture 90° for wall-to-wall view)
*instructions are the same for all configurations

COVERAGE

Material	Coverage
Krystol Waterstop Grout™ External (Grey)	3.33 kg/m (6.6 lbs/yd) = 7.5 lineal meters per 25 kg pail (25 feet per 55 lb pail)
Krystol Waterstop Treatment™	1 kg/m² (0.2 lbs/ft²) = 3 lineal meters per 1.0 kg for a 30 cm joint (10 lineal feet per 2.2 lbs for a 12" joint)

TOOLS AND MATERIALS

- Krystol Waterstop Grout™ External (Grey)
- Krystol Waterstop Treatment™
- Clean water supply
- Mixing bucket, drill and paddle
- Natural bristle concrete brush
- Margin trowel
- Watering can and towel
- High pressure water blaster

STEP 1: PREPARE THE SURFACE

1. Concrete surfaces to receive the Krystol® Waterstop System must be sound, clean and free of contaminants or debris. Joints should be prepared by high-pressure water blasting to remove any form oils, curing compounds, dust or other contaminants.

VERY IMPORTANT: Surfaces to receive the Krystol® Waterstop System must be brought to a saturated surface-dry (SSD) condition. This means that the pores of the concrete are completely saturated with water but no free water remains at the surface. Pre-soak the surface with water then remove excess water with a towel just before applying the Krystol Waterstop Treatment™ or Grout™.



Application Instruction 202

STEP 2: INSTALL KRISTOL WATERSTOP TREATMENT™

1. Mix Treatment to a thick slurry consistency (5 parts powder to 2 parts clean water by volume).
2. Apply Treatment to coat the intended joint area using a concrete brush. Employ a circular, scrubbing motion so as to achieve maximum adhesion and penetration.
3. Apply Treatment at a spread rate of 1 kg/m² (0.2 lbs/ft²). Be sure to cover the entire contact area of the joint.
4. Protect the Treatment application from damage by rain, rapid drying or freezing for 24 hours or until concrete is poured over it.

STEP 3: CREATE A KEYWAY

1. Create a keyway at the intersection where the two concrete sections will meet. A suitable keyway can be formed from a dressed 2x2 by trimming one edge off at an angle to leave a narrow edge of about 1.25" (40mm x 40mm tapering to 30mm).
2. Attach the keyway form to the edge of the concrete form with the narrow end facing inwards. For slab-to-slab joints, the keyway can be pressed into the joint while the concrete is still plastic.

STEP 4: PREPARE THE KEYWAY

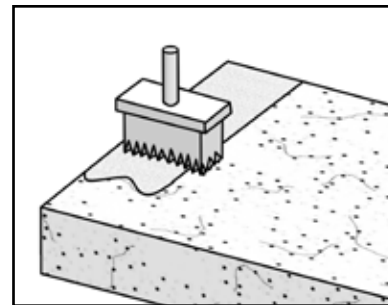
1. Remove keyway forms from set concrete. Take special care to ensure that no wood is left in the keyway.
2. Ensure that the keyway is clean. Remove any form release agents, dirt or debris.

STEP 5: INSTALL KRISTOL WATERSTOP GROUT™

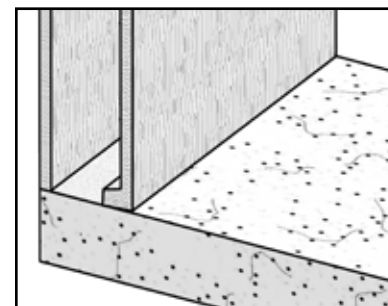
NOTE: Wait at least 28 days before filling the keyway with Krystol Waterstop Grout™ to allow initial concrete shrinkage to take place first.

NOTE: Only proceed if the keyway is **NOT** leaking water. If water is leaking through the keyway, STOP and finish the application using the crack repair procedure described in Application Instruction 301.

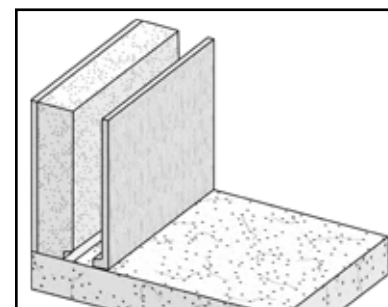
1. Mix Krystol Waterstop Grout™ to a stiff putty consistency using the following procedure. Begin by mixing 3 parts powder with 1 part water by volume until smooth. Then add an additional part of powder (for a total of approximately 4 to 1) and continue mixing to obtain a sag free paste. The mixture will appear dry at first, but with vigorous mixing the Krystol chemicals will dissolve and the mix will become smooth and workable.
2. Mix only as much material as can be placed in 30 minutes. Note that material left standing will quickly stiffen, but vigorous mixing will restore plasticity. Do not add water to the material once it has started to set. Over-watering will result in shrinkage cracking.
3. Tightly pack the Krystol Waterstop Grout™ into the keyway so that it is flush with the surface.
4. Protect the Grout application from damage by rain, rapid drying or freezing for at least 24 hours.



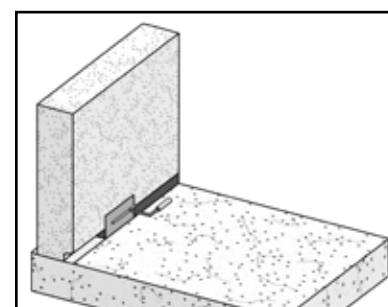
Step 2
Apply Krystol Waterstop Treatment™ at construction joint prior to pouring next subsequent concrete pour



Step 3
Create a keyway where two concrete sections meet.



Step 4
Remove keyway forms from set concrete.



Step 5
Install Krystol Waterstop Grout™ into the keyway.