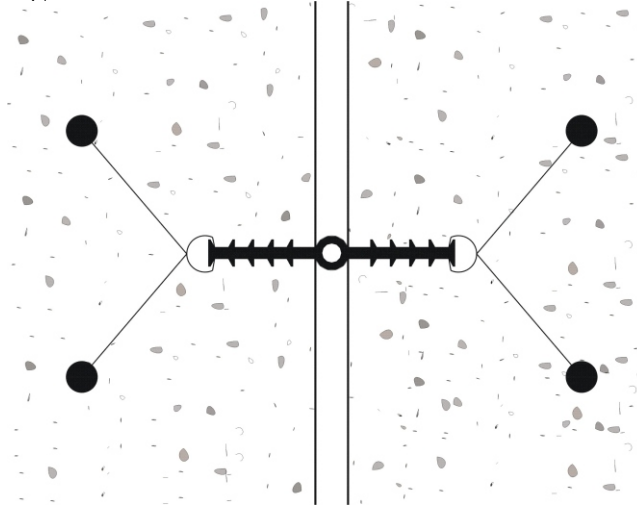


## General Waterstop Installation Procedure

### Preparation:

During progress of work all waterstop should be protected from damage and should be free of oil, dirt and concrete spatter. Waterstop coils should be uncoiled several days before installation to insure ease of installation and fabrication. Be sure steel reinforcing bars do not interfere with proper positioning of waterstop. See page 2 for minimum clearances and coverages.



### Location & Placement of Waterstop:

The location and embedment of the waterstop should be determined by the use of the construction drawings of the project. Approximately one half of the width of the waterstop embedded in the concrete on each side of the joint. All waterstops shall be sufficiently held in place to insure that they are correctly positioned to form a continuous watertight diaphragm in the joint unless otherwise shown. The method used to fasten the waterstop may be as follows:

- through a slot in the keyway
- held in place by split bulkheads
- hog ring and wire tie to reinforcing bar every 12 inches. Always secure hog ring or wire between the last rib and the end of the waterstop. Hog ring shall not penetrate the waterstop.
- BoMetals, Inc can provide hog rings 12" on center up request.

### Placement of Concrete:

Care should be taken during concrete placement to prevent excessive movement of the waterstop to insure against displacement. Always thoroughly and systematically vibrate concrete around the waterstop to avoid air entrapment and to provide a positive contact between the waterstop and concrete. On the second pour, sweep horizontal joints to insure there is no foreign matter to interfere with positive contact between the waterstop and the concrete.

## Considerations for Design with Waterstop

### Width of Waterstop

The width of the waterstop should not greater than the thickness of the concrete and should not be less than six times the aggregate size plus the joint width.

$$(6 * \text{Aggregate Size}) + \text{Joint Width} \leq \text{Waterstop Width} \leq \text{Concrete Thickness}$$

### Coverage

The amount of coverage that the waterstop needs should be no less than one half of waterstop width minus the joint width or the embedment of the waterstop one side of the joint.

$$1/2(\text{Waterstop Width} - \text{Joint Width}) \leq \text{Coverage Concrete from Waterstop} \geq \text{Embedment of Waterstop}$$

### Distance Minimum Between Waterstop & Reinforcement

All Waterstop should be at least two times the distance of the largest aggregate diameter.

$$\text{Distance Min. Waterstop \& Reinforcement} \geq 2 * \text{Largest Aggregate Diameter}$$

### Waterstop Center Bulb Movement

The inside diameter of the center bulb should be greater than the movement of the joint or differential movement.

$$\text{Inside Diameter of Waterstop Center Bulb} \geq \text{Joint Movement or Differential Movement}$$

