











Tech Tips 003

Proper Installation of Ribbed Waterstop Profiles


By David R. Poole, CSI, ACI

The below Tech Tip is applicable to the following Earth Shield® waterstop profiles:

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1. **Part No. JP436** — 4" x 3/16" ribbed centerbulb, as manufactured by **J P Specialties, Inc.** (all-purpose waterstop; if specified with factory installed brass eyelets use part no. EYJP436) 
2. **Part No. JP636** — 6" x 3/16" ribbed centerbulb, as manufactured by **J P Specialties, Inc.** (all-purpose waterstop; if specified with factory installed brass eyelets use part no. EYJP636) 
3. **Part No. JP936** — 9" x 3/16" ribbed centerbulb, as manufactured by **J P Specialties, Inc.** (all-purpose waterstop; if specified with factory installed brass eyelets use part no. EYJP936) 
4. **Part No. JP678** — 6" x 3/16" ribbed tear web, as manufactured by **J P Specialties, Inc.** (for extreme joint movement; if specified with factory installed brass eyelets use part no. EYJP678) 
5. **Part No. JP978** — 9" x 3/16" ribbed tear web, as manufactured by **J P Specialties, Inc.** (for extreme joint movement; if specified with factory installed brass eyelets use part no. EYJP978) 
6. **Part No. JP637** — 6" x 3/8" ribbed flat strip, as manufactured by **J P Specialties, Inc.** (for control and construction joints; if specified with factory installed brass eyelets use part no. EYJP637) 
7. **Part No. JP638** — 6" x 3/8" ribbed centerbulb, as manufactured by **J P Specialties, Inc.** (all-purpose waterstop; if specified with factory installed brass eyelets use part no. EYJP638) 
8. **Part No. JP937** — 9" x 3/8" ribbed flat strip, as manufactured by **J P Specialties, Inc.** (for control and construction joints; if specified with factory installed brass eyelets use part no. EYJP937) 
9. **Part No. JP938** — 9" x 3/8" ribbed centerbulb, as manufactured by **J P Specialties, Inc.** (all-purpose waterstop; if



specified with factory installed brass eyelets use part no. EYJP938) 

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Embedded, ribbed profile, polymer waterstops rarely (if ever) fail from catastrophic failure, such as bursting under high hydrostatic stress. Furthermore, if properly installed, the centerbulb and tear web varieties can even accommodate fairly substantial joint movements. Unfortunately, there are far too few resources for the contractor in the field, and waterstops are frequently installed improperly. The goal of this document is to provide a simple jobsite guide, that can be utilized as a quick and easy reference for the proper installation of ribbed centerbulb profiles as manufactured by J P Specialties, Inc.

Preparation

- A. Uncoil waterstop 24 hours prior to installation for ease of handling and fabrication. (Plastics have a memory, and this will remove the curl from the waterstop.)
- B. Position waterstop to ensure proper distance (See Installation step C.)
- C. Protect waterstop from damage during progress of work.
- D. Clean concrete joint after first pour to remove debris and dirt.

Examination/Inspection

- A. Prior to placement of concrete notify engineer for field inspection approval.
- B. Inspect waterstop and field splices for defects.
- C. Upon inspection of waterstop installation, replace any damaged or unacceptable waterstop and dispose of defective material.

Installation

- A. Position waterstop in joint as indicated on drawings.
- B. Center waterstop on joint, with approximately one-half of waterstop width to be embedded in concrete on each side of the joint. (If expansion joint, see step D.) Use split form installation method. — do not bend or fold waterstop flat against forms (See Figure 3).
- C. Allow clearance between waterstop and reinforcing steel of a minimum of 1.5 times the largest aggregate size. Prevent rock pockets and air voids caused by aggregate bridging.



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- D. Ensure centerbulb is not embedded at expansion joints. Use the specified brand of expansion joint filler above and beneath the waterstop bulb.
- E. Secure waterstop in correct position using optional factory-installed brass eyelets (See Figure 1, or JPS hog rings crimped between last two ribs on 12 inch maximum centers), and wire tie to adjacent reinforcing steel (See Figure 2).
- F. Carefully place concrete without displacing waterstop from proper position. (If Installation step E is followed, this will not be a problem.)
- G. Thoroughly and systematically vibrate concrete in the vicinity of the joint, and to maximized intimate contact between concrete and waterstop. (Pay particular attention to the area beneath the waterstop leg.)
- H. After first pour, clean unembedded waterstop leg to ensure full contact of second concrete pour. Remove laitance, spillage, form oil and dirt.
- I. Repeat all steps for the second pour.



Figure 1 — Factory Installed Brass Eyelets (to facilitate attachment to reinforcing steel)



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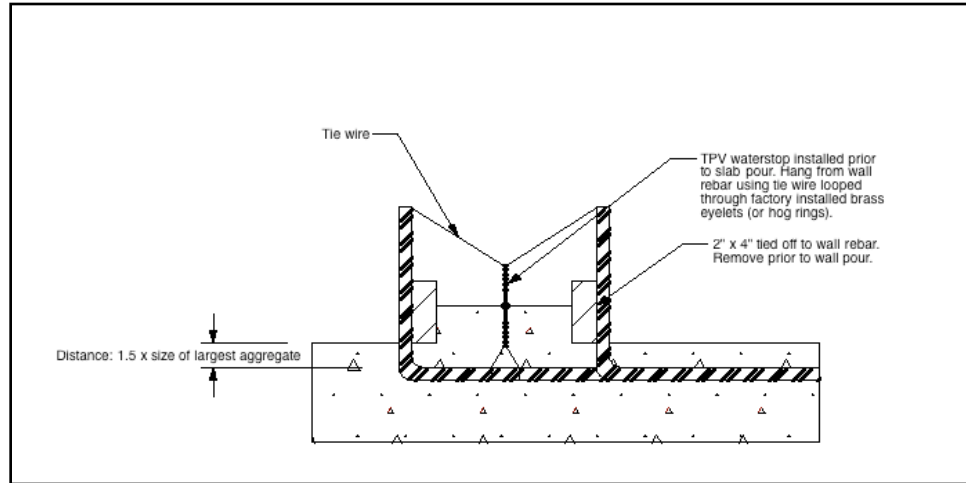


Figure 2 — Typical Starter Wall Detail

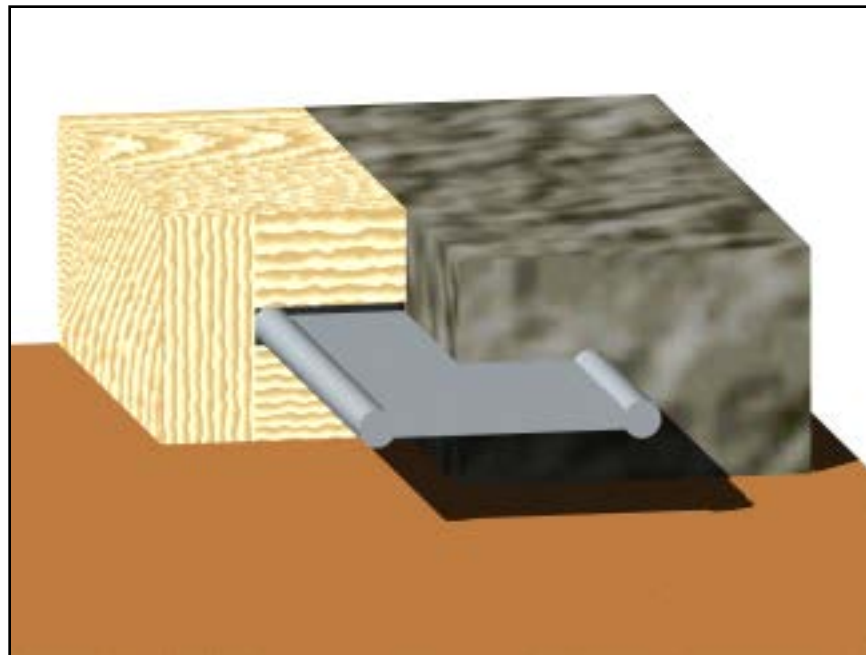


Figure 3 — Typical Split Form Drawing