

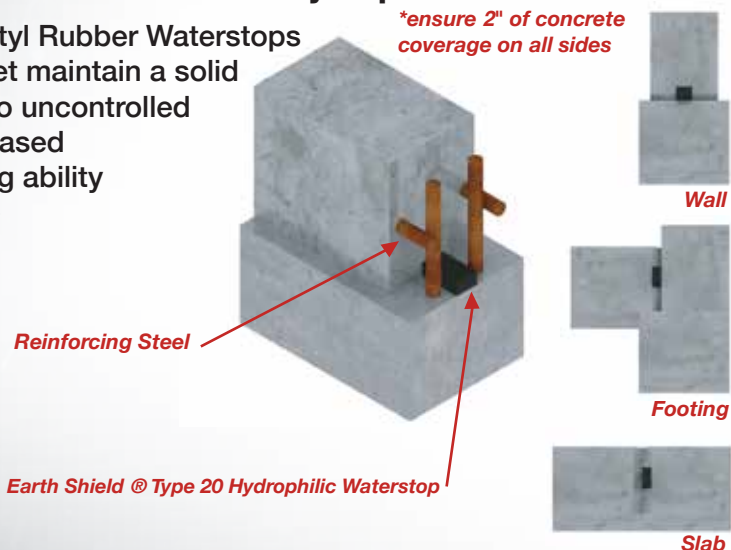
# Type 20 & 23



## Effective & Economical Hydrophilic!

Earth Shield® Type 20 & Type 23 Hydrophilic Butyl Rubber Waterstops are designed to swell when exposed to water, yet maintain a solid structural integrity that will not deteriorate due to uncontrolled expansion, unlike many of the traditional, clay-based waterstops currently on the market. This swelling ability prevents the passage of water through concrete construction joints.

*\*ensure 2" of concrete coverage on all sides*



## Typical Physical Properties

Hydrocarbon Content	47%
ASTM D297	
Specific Gravity, 77°F	1.35
ASTM D71	
Volatile Matter	1%
ASTM D6	
Penetration, Cone 77°F	40 mm
150 gm. 5 sec. ASTM D217	
Service Temp., °F	-30°F to 180°F

Color Black

Type 20 Packaging 6 rolls per carton  
100 ft. per carton  
3/4" x 1" x 16'8"

Type 23 Packaging 8 rolls per carton  
200 ft. per carton  
3/8" x 3/4" x 25'

## Earth Shield Type 20 & 23 Waterstops are Ideal for:

- Non-moving Joints
- Pipe Penetrations
- Slabs & Walls
- Utility Vaults
- Manholes
- Cast-in-Place Applications

## Installation Instructions

1. Brush and remove loose dirt and particles from the surface.
2. Brush one coat of Type 20 Primer Adhesive on to the clean, concrete surface.
3. Allow primer to cure (per directions on can).
4. Press Type 20 firmly onto the primed surface.
5. Overlap ends (1" minimum), and join with a kneading action, press ends together until there is no separation or air pockets.
6. Remove separation paper.
7. You are now ready for your second pour.

## Suggested Short Form Guide Specification

Waterstop indicated in drawings and specifications for construction joints to be **Earth Shield® Type 20 Waterstop** as manufactured by J P Specialties, Inc.

1. Size: 3/4" x 1" x 16'8" continuous.
2. Required hydrostatic pressure resistance: 100 psi.
3. No equals or substitutions allowed.



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# Earth Shield® Type 20 Waterstop Hydrostatic Pressure Test Procedure and Results

1. Test procedure: Select a 14" diameter by 3" thick circular concrete test specimen.
2. The specimen shall be manufactured with six pieces of rebar placed approximately 1-1/2" from the edge of the specimen.
3. The rebar shall be equally spaced around the circumference of the test specimen.
4. The top of the specimen shall consist of a flat surface with the rebar protruding out.
5. With a 1" wide paint brush, apply a 1" wide strip of Earth Shield primer around the circumference of the area closest to the inside of the protruding rebar posts.
6. After allowing primer to thoroughly dry, apply a single piece of Earth Shield Type 20 Waterstop 3/4" x 1" x 16'-8" to the primed area; the ends of the piece shall be molded together in order to form a continuous seal.
7. A sheet of 15-pound tarpaper shall be placed on the remaining exposed concrete surface of the test specimen. The tarpaper creates a separation between the precast section and the cast insection of the test specimen.
8. Plumbing connections and a forming ring shall be placed over the precast test specimen.
9. Concrete is poured into the forming ring casting the Type 20 Waterstop into the test specimen.  
Allow the test specimen to cure for 48 hours before removing forming ring.
10. Threaded rods and clamping brackets shall be placed over the test specimen.
11. Begin testing by filling the center cavity with water allowing the concrete to become saturated for 12 days. Water shall be added as needed.
12. Hydrostatic pressure is introduced into the center cavity and maintained for the duration of the test.

## Results

PSI	Hours	Result
10	168	No leaks
25	168	No leaks
50	168	No leaks
100	5,640	No leaks

# Earth Shield® Type 20 & 23 Waterstop Immersion Testing & Hydrophilic Expansion

## Results

Solution	Time	Result
Fresh Water	24 hours	140% expansion
Fresh Water	48 hours	175% expansion
Fresh Water	72 hours	190% expansion
Fresh Water	120 hours	210% expansion
Salt Water	24 hours	7% expansion
Salt Water	48 hours	12% expansion
Salt Water	72 hours	14% expansion
Salt Water	120 hours	18% expansion