Waterstops play a critical role in the integrity of concrete structures. Earth Shield® Thermoplastic Vulcanizate (TPV) Waterstop is used as a fluid-tight diaphragm, embedded in concrete, across and along the joint, for primary and secondary containment structures such as tank storage and transloading areas. Earth Shield® Chemical Resistant Waterstops are ideally suited for railroad and fuel terminal applications, as they are resistant to a wide range of fuels, oils, solvents, and aggressive chemicals. Diesel fuel, JP-4 and JP-8 jet fuel, and aromatic hydrocarbons have little effect on Earth Shield® Thermoplastic Vulcanizate Waterstop.

Unlike inferior polyvinyl chloride (PVC) waterstop, Earth Shield® waterstop contains no plasticizer, stabilizer, or filler to leech out when exposed to fuels. Also, unlike PVC waterstop, Earth Shield® can withstand prolonged exposure to high and low temperatures (-164°F to 275°F long term) without detrimental effect.

Earth Shield® is proud to be the chosen performance product of Union Pacific, Burlington Northern Santa Fe, CSX, and myriad fuel terminals and loading stations throughout the world. In many cases, Earth Shield® is a key component in the rail company’s Environmental Advocacy Program.

Contact our National Sales Manager — Mr. Tom Nelson at 713-857-3941 (tom@jpspecialties.com) and see how we can help with your regulatory requirements.

### Property | Test Method | Required Results
--- | --- | ---
Specific Gravity | ASTM D792 | .96
Shore A Hardness (5 sec.) | ASTM D2240 | 90±3 at 25°C (77°F)
Tensile Strength | ASTM D412 | 2,300 psi
Ultimate Elongation | ASTM D412 | 530%
100% Modulus | ASTM D746 | 1,000 psi
Tear Strength | ASTM D624 | 278 ppi at 25°C (77°F)
Compression Set | ASTM D395 | 29% at 25°C (77°F)
Brittle Point | ASTM D746 | -73°C (-164°F)
Drinking Water Safe | NSF/ANSI 61 | Waterstop certified by NSF for use in potable water
Ozone Resistance | ASTM D1171 | Passed, no cracking at 500 pphm
Chemical Resistance | ASTM D471 | Meet or exceed specific testing standards for contained fluids as required by Owner and certified by Manufacturer
Green Certification | GreenSpec | Approved

Earth Shield® Chemical Resistant Waterstop
P.O. Box 1507, Lake Elsinore, CA 92531
Phone: 888-836-5778; International: 951-674-6869
Fax: 951-674-1315

www.earthshield.com
Earth Shield® Thermoplastic Vulcanizate (TPV / TPER) Waterstop Basic Use

Earth Shield® TPV Waterstop is NSF Standard 61 Certified for use in drinking water and is made of a recyclable polymer, so it’s good for health and the environment.

http://www.earthshield.com/earth_shield_waterstop/waterstop_tpv/waterstop_tpv.html

The superior chemical resistance of Earth Shield® Thermoplastic Vulcanizate Waterstop is enhanced by the use of a ribbed centerbulb configuration, which is available in a 4, 6, and 9-inch width. This provides for greater mechanical bonding with the concrete and a barrier against migration of liquid flow around the waterstop. The ribbed centerbulb style also allows for joint movement and may be used in above or below grade applications. Additional shapes are available for retrofit, extreme expansion, stainless steel and base seal applications.

Different varieties and grades of thermoplastic elastomers (TPE) are commercially available. On the low-end there is thermoplastic polyolefin (TPO), which has a rubber phase that is not cross-linked. On the high-end there is thermoplastic vulcanizate (TPV)... Earth Shield® has chosen a fully cross-linked TPV as our standard elastomer compound, which provides superior mechanical properties, retention, and chemical resistance. In fact, when compared side-by-side, no competitive product is even close to achieving the physical properties of Earth Shield®.

Earth Shield® Advantages

- Excellent retention of physical properties at elevated temperatures
- Superior ozone and weather resistance

Installation

Install Earth Shield® TPV Waterstop in all concrete joints. Waterstop should be centered in, and run the extent of the joint. All changes of directions should be prefabricated (see Shop Made Fittings), leaving only butt-welding for the field. If installing in an expansion joint, keep center bulb unembedded to allow it to accommodate movement as designed. Use optional factory installed brass eyelets (or #3 hog rings) and tie wire to secure waterstop to reinforcing steel to avoid displacement during the concrete pour. Splice straight lengths of waterstop, and Shop Made Fittings to straight lengths, with an ST-10® In Line Waterstop Splicer with the iron temperature set to 410°F to 430°F.

More detailed installation instructions can be found in our Standard 3-part Specifications.

Technical Assistance

Qualified technical assistance is available during any phase of your construction project.

Specifications

Standard 3-part Specifications are available at our website in Microsoft® Word and Adobe® PDF format, and upon request in printed and a variety of computer word processor formats. Call our Technical Sales Staff for additional help with your specification.

http://www.earthshield.com/earth_shield_waterstop/waterstop_tpv/waterstop_tpv.html

Suggested Proprietary Short Form Guide

Specification Section 03150 (Master Format 2004 — 03 15 13)

TPV Chemical Resistant Waterstop

Waterstop indicated in drawings and specifications for contraction (control), expansion and construction joints shall be Earth Shield® TPV Chemical Resistant Waterstop Part No. #### [Designer insert appropriate part number here] as manufac-
tured by JP Specialties, Inc.; 551 Birch Street, Lake Elsinore, CA 92530; Phone 951-674-6869

1. Thermoplastic Vulcanizate (TPV) Waterstop shall conform to EPA Title 40 CFR Section 265.193. The suitability of the waterstop for a specific application should be determined by specific testing for that particular requirement per ASTM D471. Project-specific certification to be provided by the manufacturer.

2. Thermoplastic Vulcanizate (TPV) Waterstop shall be independently certified for use in potable water per NSF/ANSI Standard 61. Third-party certified documentation to be provided by the manufacturer.

3. No equals or substitutions allowed.

Suggested Waterstop Profiles for Railroad and Fuel Terminal Applications

Suggested Short Form Spec

Flexible Waterstop
Waterstop indicated in drawings and specifications for contraction (control), expansion and construction joints to be Earth Shield Thermoplastic Vulcanizate (TPV). Manufactured by JP Specialties, Inc. - 551 Birch Street, Lake Elsinore, CA 92530 - Phone 951-674-6869; Fax 951-674-1315; www.earthshield.com

2. No equals or substitutions allowed.

Suggested Short Form Spec

Flexible Retrofit Waterstop
Waterstop indicated in drawings and specifications for contraction (control), expansion and construction joints to be Earth Shield Thermoplastic Vulcanizate (TPV). Manufactured by JP Specialties, Inc. - 551 Birch Street, Lake Elsinore, CA 92530 - Phone 951-674-6869; Fax 951-674-1315; www.earthshield.com

2. No equals or substitutions allowed.

Suggested Short Form Spec

Flexible Waterstop
Waterstop indicated in drawings and specifications for construction joints to be Earth Shield Thermoplastic Vulcanizate (TPV). Part No. JPEB375 as manufactured by JP Specialties, Inc. - 551 Birch Street, Lake Elsinore, CA 92530 - Phone 951-674-6869; Fax 951-674-1315; www.earthshield.com

2. No equals or substitutions allowed.

Suggested Short Form Spec

Flexible Waterstop
Waterstop indicated in drawings and specifications for contraction (control), expansion and construction joints to be Earth Shield Thermoplastic Vulcanizate (TPV). Part No. JPEB375 as manufactured by JP Specialties, Inc. - 551 Birch Street, Lake Elsinore, CA 92530 - Phone 951-674-6869; Fax 951-674-1315; www.earthshield.com

2. No equals or substitutions allowed.

Additional Profiles Available at www.earthshield.com

The Primary Choice for Secondary Containment®
Availability
National and International Warehouses
Earth Shield® Chemical Resistant Waterstop is readily available from a variety of sources:

- **Preferred Regional Stocking Partners** — We are partners with some of the very best Concrete Accessories Distributors in the world. All our preferred partners have large stocking inventories and are factory trained to provide the utmost in on-site assistance.

- **Distributor Sales** — Earth Shield® can be special ordered from many distributor sales channels throughout the world.

- **Factory Direct** — Earth Shield® may be contacted directly for project quotation and product purchase (call 888-836-5778).

- **Web Store** — Earth Shield® products can be ordered directly on our web store at http://waterstop.enstore.com

Services
We Offer the Following Services, Free of Charge

- **Project and Product Certification** — We assist the Design Engineer and Project Owner with individual project and product certification. When you specify our waterstop, you can be assured it is the correct product for your application.

- **Take-off Assistance** — For the Contractor.

- **Shop Drawings** — 3-D isometric and 2-D CAD details are available to assist the project.

Visit Earth Shield® on the Web at www.earthshield.com

Earth Shield® Waterstop Limited Warranty
JP Specialties, Inc. warrants to the Buyer that this product is new and will be free from defects and will perform as represented in writing subject to the two (2) following conditions: First, the application of the product and the concrete construction practices used in the application are in accordance with JP Specialties, Inc. recommendations; and, Second, the Buyer has selected the proper product for the specific application required.

Any information supplied in good faith by JP Specialties, Inc. with respect to its products is believed to be correct. JP Specialties, Inc. makes no representation or warranties, expressed or implied, as to the accuracy or completeness of such information.

The exclusive remedies of the Buyer and the limit of the liability of JP Specialties, Inc. from any and all losses or damages resulting from the use of this product shall be either full refund of the purchase price to the Buyer of this product or the replacement of the quantity of product purchased by the Buyer at the discretion of JP Specialties, Inc.

All supplied testing data has been performed by independent testing laboratories.

Distributed by:

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