

1. Product Name: DuraJoint® PVC Waterstop

2. Manufacturer:

Four Seasons Industries
10426 Industrial Drive
Garrettsville, OH 44321
Phone: (330) 527-4308
Toll-Free: (888) 833-8308
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3. Product Description: DuraJoint

is a product designed for use in concrete construction containing joints, one side of which is subject to hydrostatic pressure.

DuraJoint is used as a barrier within the joint to prevent the passage of liquid through or across the joint. It is embedded in the concrete on both sides of the joint, spanning the joint. It is designed to accommodate lateral and transverse movement which can cause a joint to open, close or misalign.

4. Basic Uses: DuraJoint is used in

Portland concrete construction to prevent the flow of liquids through or across expansion joints and construction joints, particularly in on grade and below grade structures, where water has to be kept out – or kept in.

Some of the structures requiring the use of DuraJoint or a similar product are basements, retaining walls, dams, locks, sewage treatment and water treatment plants, storage tanks, water reservoirs, canals, culverts, tunnels, elevator pits, roof and floor slabs, parking decks, bridge decks and abutments – and any other concrete structure requiring tight joints.

5. Composition and Material:

DuraJoint is extruded from an elastomeric plastic compound consisting of virgin polyvinyl chloride and additional resins, plasticizers and stabilizers to meet or exceed the requirements and performance criteria of the Corps of Engineers Specification CRD-C 572-74. An arctic grade is available on request to meet Ontario Hydro Standard M-264-81. DuraJoint is chemically inert, contains no materials leachable by water, and is highly resistant to ozone and oxygen, and to waterborne chemicals.

DuraJoint is fungus resistant, as tested against the specifications outlined in Military Standard 810B, Method 508. It will not fatigue with repeated flexing, and retains its strength and elasticity through a temperature range from as low as -35°F (-37.2°C) to a high of +175°F (+79.3°C).

TECHNICAL DATA		
TYPICAL VALUES (PVC) (CRD-C572-74)		
	Values	Test
Tensile Strength		
psi (MPa)	2050 (14.14)	CRD-C 573
Ultimate Elongation	366%	CRD-C 573
Stiffness in Flexure		
psi (MPa)	775 (5.54)	CRD-C 571
Low Temperature		
Brittleness @ -35°F (-37.2°C)	No cracking or splitting	CRD-C 570
Accelerated Extraction		CRD-C 572
Ultimate Elongation	350%	Par 7.1
Tensile Strength		
psi (MPa)	2000 (13.79)	Par 7.1
Effect of Alkalis	Loss in weight	CRD-C 572
	0.10% Max.	Par 7.2
	Gain in weight	
	0.25%	

Values presented are typical and are not necessarily referenced to create specifications.

6. Color: Gray

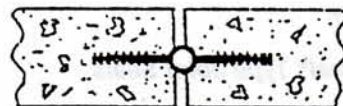
7. Waterstop Selection Guide:

a) **Types of Joints**

- **Working Joints** - Joints where a large amount of movement occurs.
- **Non-Working Joints** - Joints where little or no movement occurs.
- **Control Joints** - Joints which are purposely created planes of weakness to predetermine the location of cracks caused by contraction during the curing of concrete. Usually these joints have lateral movement.
- **Expansion or Isolation Joints** - Joints which separate or isolate abutting concrete structures, such as walls, slabs, columns or footings, protecting them from compressive forces which may develop by expansion, loads, or other movement due to settlement or configuration of the structure. The movement at these types of joints can be both lateral and transverse.
- **Construction Joints** - Joints placed at the interruptions in the placement of concrete.

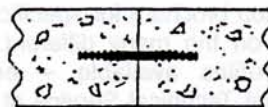
b) **Types of Waterstop:**

Ribbed Type with Centerbulb



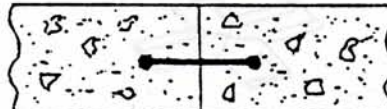
The most common and versatile type used. It is used in expansion, contraction and construction joints, particularly where a large amount of movement is expected. The greater the movement, the larger the bulb that should be used. The bulb works with both lateral and transverse movement, and the ribs provide better watertight sealing than do non-ribbed types.

Ribbed Type without Centerbulb



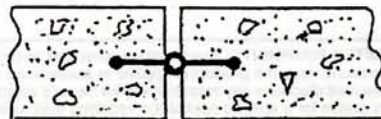
Used in construction joints where little or no movement is expected. Again, the bulb works with both lateral and transverse movement, and the ribs provide better watertight sealing than do non-ribbed types.

Dumbbell Type without Centerbulb



Primarily used in below-grade joints where little or no movement is anticipated, or in joints where predetermined lateral movement is 1" or less.

Dumbbell Type with Centerbulb



Used in selected applications where movement, even if transverse and longitudinal, must be accommodated.

Split Ribbed Type & Dumbbell



Used to eliminate split form work where desirable. Recommendations for the Ribbed and Dumbbell types given on the other side of this page apply.

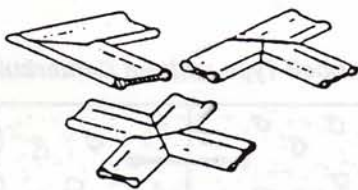
Baseal® Type Joint Seals



Designed for ongrade installation at the bottom of concrete slabs to prevent upward seepage of ground water through joints, or in thin slab construction, or to waterproof joints at wall/slab junctions.

After determining the type of DuraJoint Waterstop required for your construction purposes, consult either the DuraJoint PVC Waterstop brochure for specific information on the many different sizes and profiles available – or call DuraJoint Technical Service at (888) 833-8778.

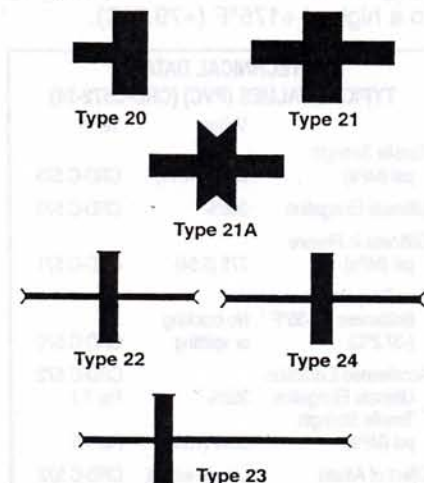
Factory Made Splices – Flat and vertical L's, T's and Crosses are available on request. When splicing in the field, use a thermostatically controlled heat iron.



Masonry Control Joints

PVC masonry control joint units are designed to be used with standard concrete blocks to provide a vertical joint of stress relief in concrete masonry walls, while providing adequate shear strength for lateral stability.

Control joint units are extruded from a specially formulated PVC compound in 4 linear foot lengths. **Type 20, Type 21 and Type 21A** are used both in block walls and brick veneer. They are used with less expensive joint fillers, and are ideal between columns and walls. **Type 22 and Type 24** are used in 6" and 8" block walls, and **Type 23** is used in block walls and brick veneer, with all five types providing protection against the penetration of foreign materials.



TYPICAL PHYSICAL PROPERTIES		
Tensile strength, psi	ASTM D-638	2000
Elongation, %	ASTM D-638	360
Specific Gravity	ASTM D-792	1.38
Hardness, Shore A	ASTM D-2240	75-85

8. Installation Techniques:

a) Preparation

Store DuraJoint under cover to protect from oil, dirt, and sun UV. Uncoil several days before using and lay flat to insure easy installation and fabrication.

b) Placement

Steel reinforcing bars and dowels must not interfere with proper positioning. Install in the center of the joint, with half of the width embedded in the concrete on each side of the joint.

In expansion joints, take care during the concrete placement to keep the centerbulb unembedded and in the center of the joint. Use hog rings crimped between the last two ribs or into the end bulbs on 12" centers and wire tie the waterstop to the reinforcing steel.

Thoroughly vibrate the concrete around the waterstop to ensure complete contact between the concrete and the waterstop.

Thoroughly clean all horizontal joints prior to the second pour so that foreign material does not interfere with full contact between the cement and the waterstop being embedded. Do not deflect the waterstop out of position when placing the concrete. Use a heavier waterstop profile when using large, heavy aggregate to prevent displacement of the waterstop.

When using the split type, the split of the leg is opened and nailed to the bulkhead between the last ribs, or beside the end bulbs on the Dumbbell type. When the forms are stripped the split legs are joined using a PVC solvent adhesive and placing hog rings every 12".

Factory Installed "Hog Rings"

Factory installed "hog rings" are available on selected sizes and shapes of DuraJoint Waterstop. "Hog rings" help to hold the waterstop in proper position during the placement of concrete by fastening the rings with wire to the rebar. "Hog rings" are made of galvanized metal, and are installed at 12 inch intervals during the extrusion process; however, any interval can be specified. For more information, call (888) 833-8778 (toll-free).

9. Application Cautions:

When placing concrete, be certain there is complete contact with the waterstop. Do not deflect the waterstop when making the second pour. When using split type, do not nail adjacent to the center bulb. Protect material from oil, dirt, and sun UV when storing before use.

10. Environmental and Safety Precautions: None

11. Packaging: Waterstop – 50 ft. per piece. Masonry Control Joint – #23 10 4' pcs/carton; all others 15 4' pcs/carton.

Storage: Protect from contamination and sun UV.

Shelf Life: Indefinite.

Freight Class: 55 – Roadway Paving Joint NMFC #35160.

12. Technical Service: Call (888) 833-8778 (Toll-Free)

LIMITED WARRANTY: DuraJoint warrants that its products will be free from defects and will perform in accordance with each product profile's specifications, subject to the following conditions: first, the product is applied in accordance with DuraJoint's recommendations, and second, the Buyer has selected the proper product profile for the specific application. DuraJoint disclaims any responsibility for Buyer's selection of a particular product profile. Product profile selection is the sole responsibility and decision of the Buyer. The suitability of any profile for a specific application requiring fluid resistance is best determined by specific testing for that application. DuraJoint encourages the Buyer to conduct its own site application testing. **LIMITATION ON LIABILITY:** Therefore, DuraJoint's liability to the Buyer or any third party for any losses or damages, whether direct or otherwise, arising out of the purchase of its product shall be limited to a full refund of the purchase price to the Buyer. In no event shall DuraJoint be liable for any incidental or consequential damages.

THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE CONCERNING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The Buyer and all users of DuraJoint product are deemed to have agreed to the terms of this Limited Warranty, which may not be modified except by a written agreement signed by Four Seasons Industries.