



WEAVER GENERAL CONSTRUCTION COMPANY
 3679 S. Huron St., Suite 404
 Englewood, CO 80110
 Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITTAL

May 27, 2011

WGC Submittal No: 03300-012

PROJECT: **Harold Thompson Regional WRF**
 Birdsall Rd.
 Fountain, CO 80817
 Job No. 2908

ENGINEER: **GMS, Inc.**
 611 No. Weber St., #300
 Colorado Springs, CO 80903
 719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan
 Sewage Disposal District**
 901 S. Santa Fe Ave.
 Fountain, CO 80817
 719-382-5303 James Heckman

CONTRACTOR: **Garney Companies Inc.**
 7911 Shaffer Parkway
 Littleton, CO 80127
 303-791-3600 Dennis Van Auken

SUBJECT: 9" PVC Waterstop ****Note- Ref 9" RCB 978 - Ribbed Center Bulb****

SPEC SECTION: 03300

PREVIOUS SUBMISSION DATES: None

DEVIATIONS FROM SPEC: ___ YES X NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver General Construction and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

Contractor's Stamp:

Date: 5/27/11
 Reviewed by: H.C. Myers
 (X) Reviewed Without Comments
 () Reviewed With Comments

Engineer's Stamp:

**ENGINEER'S
 COMMENTS:** _____

PVC WATERSTOPS

TYPES OF CONCRETE JOINTS

Expansion (Isolation) Joint

A joint that separates the slab structurally from other building elements such as walls, columns, foundations, drain pipes, to accommodate differential horizontal and vertical movement.

Contraction (Control) Joint

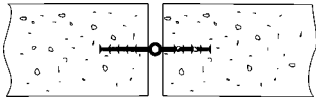
A formed, sawed or tooled groove in a concrete structure to create a weakened plane and regulate the location of cracking resulting from the dimensional change of different parts of the structure.

Construction Joint

A joint placed in concrete where construction operations are concluded for the day.

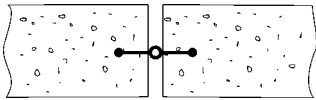
—Reprinted with permission, American Concrete Institution, CCS-1, Slabs on Grade, Mary K. Hurd, Editor.

WATERSTOPS FOR MOVING JOINTS



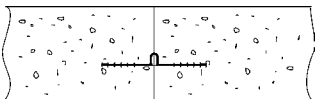
Ribbed Center Bulb

Used in expansion joints where normal movement between members is anticipated. Also available in split shapes.



Dumbbell with Center Bulb

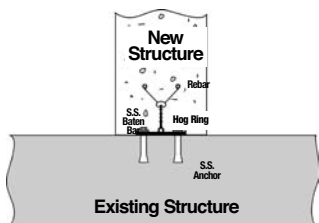
Used in expansion joints where longitudinal and transverse movement is anticipated.



Tear Web

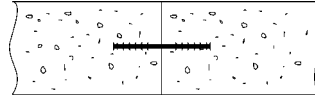
Used in expansion joints where large joint movements are expected.

RETROFIT APPLICATIONS



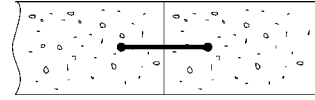
Used to provide a watertight seal when attaching a new construction project to an existing one.

WATERSTOPS FOR NON OR LIMITED MOVEMENT JOINTS



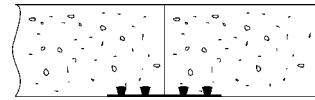
Flat Ribbed

Used in construction joints where little or no movement is anticipated and where high bond strength is desired.



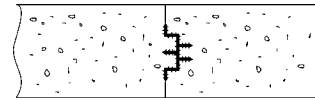
Dumbbell

Used in construction joints where little or no movement is anticipated. Also available in split shapes.



Base Seal

Used in grade construction between concrete walls and slabs, in backfilled retaining walls and in keyed construction joints in walls and slabs.



Multi Rib

Used in construction joints in vertical applications where key action is desired.

TYPICAL PHYSICAL PROPERTIES OF PVC WATERSTOPS

| Typical Properties | Nominal Value | ASTM |
|--|---------------|----------------|
| Water Absorption | 0.15% | D-570 |
| Tear Resistance, psi / kg per cm ² | 350 / 24.5 | D-624 |
| Specific Gravity, (+/-0.02) | 1.33 | D-792 |
| Hardness, Shore A (+/-3, 10 sec. delay) | 74 | D-2240 |
| Tensile, psi / kg per cm ² | 2075 / 145.25 | D-638, Type IV |
| Elongation, % | 435 | D-638, Type IV |
| 100% Modulus, psi / kg per cm ² | 725 / 50.75 | D-638, Type IV |
| Brittle Point (Tb), ∞F | -37 (Passed) | D-746 |
| Stiffness in Flexure, psi / kg per cm ² | 1440 / 100.8 | D-747 |
| Ozone Resistance | No Failure | D1149 |
| Accelerated Extraction, CRD-C572 | | |
| Tensile, psi / kg per cm ² | 2025 / 141.75 | D-638, Type IV |
| Elongation, % | 420 | D-638, Type IV |
| Effect of Alkali, CRD-C572 | | |
| Weight Change, % | .05 | ----- |
| Change in Hardness, Shore A | -3 | D-2240 |

IMPORTANT: The technical data herein is believed to be accurate. It is offered for your consideration, investigation and verification. All testing and test data has been prepared by independent laboratories. NO WARRANTY, EXPRESS OR IMPLIED, IS MADE as to the accuracy or completeness of the technical data herein and the use thereof for any particular purpose.

PVC WATERSTOPS FOR MOVING JOINTS

Ribbed Center Bulb

| Catalog Number | Head Pressure | Lbs./LF | Profile |
|----------------|---------------|---------|---------|
| RCB-4316 | 50' | .40 | |
| RCB-4316LB | 65' | .74 | |
| RCB-6316 | 100' | .73 | |
| RCB-614 | 125' | .98 | |
| RCB-638 | 125' | 1.16 | |
| RCB-638BR | 125' | 1.19 | |
| RCB-638LB | 125' | 1.60 | |
| RCB-612 | 150' | 1.90 | |
| RCB-9316 | 150' | 1.20 | |
| RCB-938 | 175' | 1.68 | |
| RCB-938NT | 175' | 2.40 | |
| RCB-938LB | 175' | 2.25 | |
| RCB-938BR | 175' | 2.41 | |
| RCB-12316 | 150' | 1.56 | |
| RCB-1212 | 225' | 3.84 | |
| RCB-1212T | 225' | 3.60 | |

Split Rib

| Catalog Number | Head Pressure | Lbs./LF | Profile |
|----------------|---------------|---------|---------|
| SR-4316 | 65' | .52 | |
| SR-6316 | 100' | .75 | |
| SR-638 | 100' | 1.54 | |
| SR-938 | 150' | 2.04 | |

Dumbbell With Center Bulb

| Catalog Number | Head Pressure | Lbs./LF | Profile |
|----------------|---------------|---------|---------|
| DBCBC-614 | 100' | 1.20 | |
| DBCBC-938 | 150' | 3.10 | |
| DBCBC-938L | 150' | 3.70 | |

Tear Web

| Catalog Number | Head Pressure | Lbs./LF | Profile |
|----------------|---------------|---------|---------|
| CTW 1-2 | 150' | 1.10 | |
| TW-618 | 65' | .78 | |
| TW-918 | 100' | 1.00 | |
| TW-938 | 150' | 3.78 | |

PAGE 3 & 4 PVC PROFILES AVAILABLE IN TPER

PVC WATERSTOPS FOR NON OR LIMITED MOVEMENT JOINTS

Flat Ribbed

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| FR-4316 | 65' | .45 | |
| FR-6316 | 100' | .76 | |
| FR-638 | 125' | 1.50 | |
| FR-638T | 125' | 1.30 | |
| FR-638RT | 125' | 1.55 | |
| FR-9316 | 150' | 1.20 | |
| FR-938 | 175' | 2.37 | |
| FR-938T | 175' | 2.07 | |

Dumbbell

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| DB-4316 | 65' | .49 | |
| DB-6316 | 100' | .71 | |
| DB-6316LB | 100' | .84 | |
| DB-614 | 100' | .98 | |
| DB-638 | 150' | 1.50 | |
| DB-9316 | 100' | 1.01 | |
| DB-938 | 150' | 2.17 | |
| DB-938LB | 150' | 2.55 | |
| DB-1238 | 150' | 2.99 | |

Split Dumbbell

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| SD-638 | 125' | 1.51 | |
| SD-938 | 150' | 2.20 | |

Base Seal

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| BS-618 | 100' | .89 | |
| BS-718 | 75' | .81 | |
| BS-72518 | 160' | .88 | |
| BS-9316 | 150' | 1.55 | |
| BS-9532 | 100' | 1.53 | |
| CU-912 | n/a | 4.46 | |

Multi Rib

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| MR-314 | 10' | .84 | |
| MR-412 | 50' | 1.24 | |

Retro Fit

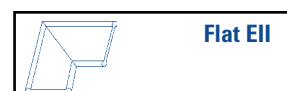
| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| RF-4316 | n/a | .85 | |
| RF-638 | n/a | 2.15 | |

CUSTOM SPLICES

An important factor in the watertightness of any waterstop is the reliability of splices. With BoMetals fittings, you are guaranteed greater strength and efficiency with ease of field installation. The following factory made splices are available in PVC & TPER.



Vertical EII



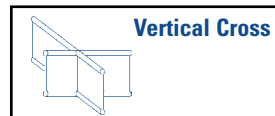
Flat EII



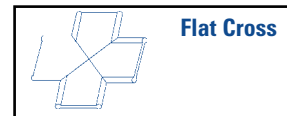
Vertical Tee



Flat Tee



Vertical Cross



Flat Cross

CHEMICAL RESISTANT (TPER) WATERSTOPS

Chemical Resistant Waterstop is available in every PVC profile. TPER (Thermoplastic Elastomeric Rubber) should be used to provide a fluid tight diaphragm in primary, secondary and tertiary above and below ground containment facilities. This is accomplished by offering a product for concrete expansion and construction joints that greatly expands its resistance to petrol-chemical, solvents, aqueous acids, gasoline, jet fuel, and chemicals listed as hazardous by the EPA. BoMetals' many selections will allow precise waterstop design for each critical application. The physical design and the field installation adversities should be considered when specifying and designing waterstop installation.

**TPER AVAILABLE
IN EVERY PVC
PROFILE FOUND
ON PAGES 3 & 4**

Physical Properties

| Properties | Nominal Value | ASTM |
|---|----------------|--------|
| Hardness, Shore A | 85.0 (+/-5) | D-2240 |
| Tensile Strength @ break, ft-lb/cm ² , psi | 2310 | D-412 |
| Elongation, @ break | 850% | D-412 |
| Brittle Point | -70 F | D-746 |
| Specific Gravity, g/cm ³ | 0.93 | D-792 |
| 100% Modulus | 1073psi | D-638 |
| Ozone Resistance | Passed 450pphm | D-1171 |

POPULAR TPER PROFILES

| Stock Number | Lbs./LF | Profile |
|--------------|---------|---------|
| TCB-4316 | .31 | |
| TCB-6316 | .45 | |
| TCB-6316NT | .55 | |
| TCB-638LB | 1.05 | |
| TDCB-614 | .73 | |
| TDCB-938 | 2.00 | |
| TFR-4316 | .33 | |
| TFR-6316 | .53 | |
| TDB-4316 | .34 | |
| TDB-638 | 1.04 | |
| TRF-638 | 1.32 | |
| TTW-618 | .40 | |
| TTW-9316 | 1.08 | |

Waterstop Products

Henry
Manufactured by COMPANY

Synko-Flex

SYNKO-FLEX Waterstop is a specially formulated preformed adhesive joint sealant that provides a lasting, watertight bond to both fresh and cured concrete surfaces.

SYNKO-FLEX is designed as an alternative to conventional waterstops that are used in cold joints at footings, walls or slab joints. Synko-Flex does not rely on swelling upon contact with fresh concrete or water to achieve its water tight seal and waterstop capabilities. Because of this, there is never a danger of a joint "blow out" due to over expansion or improper positioning.

SYNKO-FLEX Waterstop is a non-expansive, single-component, self-sealing plastic adhesive compound, extruded in a square cross-section between two quick-release protective wrappers. It bonds to cured concrete surfaces and fuses with fresh concrete during the hydration and curing process to achieve a watertight seal. Once adhered, Synko-Flex is unaffected by rain, snow or infiltrating ground water which may be present during the installation period.

SYNKO-FLEX's unique formula and packaging provides a simple, easy-to-install solution for effective waterstop sealing. It is also resistant to acids, alkalis and hydrogen sulfide gases over the life of the structure.

SYNKO-FLEX has been used since 1968 as a waterstop for cold joints in highway tunnels, airport terminals, marine animal theme parks, hospitals, performing art theaters, parking garages, hotels, office buildings, fish hatcheries, enclosed potable water reservoirs, warehouses sports complexes and wastewater plants.

Primer

SYNKO-FLEX PRIMER is a thin penetrating solution for premium selected asphalt base in a petroleum solvent. The primer readily penetrates the pores and seals dusty concrete surfaces to provide an optimal surface for the adhesion and bonding of Synko-Flex preformed adhesive waterstop. Primer is designed for application by brush.

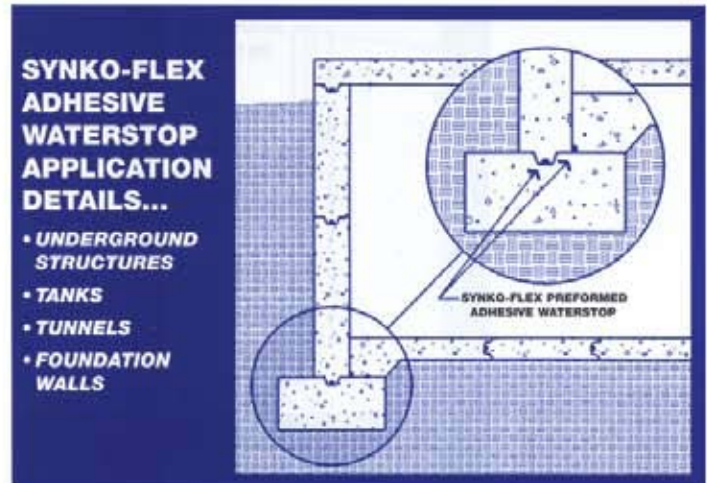
Packaging: 1 gallon cans

Hydro-Flex® Waterstop

HYDRO-FLEX is a flexible, preformed adhesive coil specially formulated butyl rubber. It swells in the presence of water, filling voids in unfinished or poorly consolidated concrete surfaces providing a lasting, watertight compression seal in non-moving joints. Because of its special butyl rubber composition it remains flexible and easy to handle during cold weather conditions.

Packaging: 1 carton contains 100 lineal feet (6 coils, 16'8" each)

Preformed Plastic Adhesive Waterstop



Packaging

| | |
|------------------|------------|
| Size | 1"x1"x3ft. |
| No Strips | 35 Strips |
| Lineal Ft/Carton | 105 ft. |

SYNKO-FLEX® Waterstop

The approved alternative to conventional waterstops with tremendous labor savings!



BoMetals, inc.

concrete and masonry accessories



All BoMetals products are available through a national network of distributors and warehouses. A trained and knowledgeable sales and engineering staff offer personalized service unparalleled in the industry today.

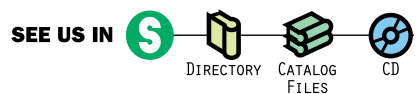
◆ **Carrollton, GA Manufacturing Facility** ◆

- ◆ **Chicago, IL Warehouse** ◆
- ◆ **Houston, TX Warehouse** ◆
- ◆ **Denver, CO Warehouse** ◆

141 Hammond Street ◆ Carrollton, GA 30117

Toll Free: 1-800-862-4835 ◆ Phone: 770-832-2000 ◆ Fax: 770-832-2095

www.bometals.com ◆ info@bometals.com





PVC Waterstop

MATERIAL SAFETY DATA SHEET

Section I - PRODUCT IDENTIFICATION

| | | | |
|----------------|--|--------------------|----------------|
| Manufacturer: | BoMetals, Inc. 141 Hammond Street Carrollton, GA 30117 | Information Phone: | 770-832-2000 |
| | | Emergency Phone: | 770-832-2000 |
| Product Class: | PVC COMPOUND | Hazard Ratings: | Health - 1 |
| Trade Name: | Waterstop | None -> extreme | Fire - 0 |
| Product Code: | Waterstop | 0 -> 4 | Reactivity - 0 |
| C.A.S. Number: | MIXTURE | | |
| MSDS Date: | 3/27/03 | | |

SECTION II - HAZARDOUS INGREDIENTS

| Ingredients | CAS # | Weight % | Exposure Limits | | VP Mm/ HG |
|----------------------------|-----------|----------|-----------------|----------|-----------|
| | | | ACGIH/TLV | OSHA/PEL | |
| Polyvinyl Chloride Polymer | 9002-86-2 | 45-80 | | | |
| Inert Fillers | | 0-40 | | | |
| Heat Stabilizer | | 3-10 | | | |
| Plasticizer | | 0-60 | | | |
| Colorant | | 0-5 | | | |
| Flame Retardant | | 0-20 | | | |

This product in its purchased form is not subject to SARA 302 or 311/312 reporting

*Toxic chemical as defined by OSHA, 29CFR 1910.1200 and subject to SARA Title III, Section 313 reporting requirements.

SECTION III - PHYSICAL DATA

| | | | |
|-------------------------|------------------------|-----------------|--------------------|
| Boiling Range: | N/A | Vapor Density: | Non Volatile |
| Evaporation Rate: | Non Volatile | Liquid Density: | Heavier than Water |
| Volatiles, vol. %<0.005 | Wgt % <0.005 | Spec. Gravity: | 1.40 |
| Appearance: | Opaque Profile Lengths | | |
| V.O.C.: | <0.01% | | |

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 1 Flash Point: >600F F LEL: NONE UEL: 0.00%

-EXTINGUISHING MEDIA:

Carbon dioxide – Dry Chemical – Foam – Water

-SPECIAL FIREFIGHTING PROCEEDURES:

Wear self-contained breathing apparatus (SCBA) in positive pressure mode. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to combustion gases from any source. In enclosed or poorly ventilated areas, wear SCBA during cleanup immediately after a fire as well as during the attack phase of fire fighting operations.

-UNUSUAL FIRE AND EXPLOSION HAZARDS:

Combustion of PVC Products liberates hydrogen chloride (HCl) gas.

Section V - HEALTH HAZARD DATA

-PERMISSIBLE EXPOSURE LEVEL:

N/A

-EFFECTS OF OVEREXPOSURE:

Breathing: At processing temperatures, flexible PVC may release vapors which can be mildly irritating to some persons. This can be controlled by proper ventilation.

Skin: Thermal burns will occur if molten compound comes in contact with unprotected skin.

-FIRST AID:

Skin: Treat burns the same as any other thermal burn.

Breathing: Move affected person to fresh air. If breathing is difficult, administer oxygen. Get medical attention if difficulty persists.

Section VI - REACTIVITY DATA

STABILITY:

() Unstable

(x) Stable

HAZARDOUS POLYMERIZATION:

() May occur

(x) Will not occur

-INCOMPATIBILITY:

Stable

-CONDITIONS TO AVOID:

Combustion or decomposition liberates hydrogen chloride gas.

-HAZARDOUS DECOMPOSITION PRODUCTS;:

HCl, CO2, CO

Section VII - SPILL OR LEAK PROCEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Sweep up and return to container.

-WASTE DISPOSAL METHOD:

Landfill disposal is usually acceptable; check current local, state and federal regulations.

Section VIII - SPECIAL PROTECTION INFORMATION

-RESPIRATORY PROTECTION:

With adequate ventilation consistent with good industrial workplace practices, there should be no need to use a respirator during normal processing of flexible PVC; however, if air monitoring results show concentrations exceeding those limits listed for chemicals in Section II, wear a NIOSH/MSHA-approved respirator specific for those chemicals. Comply with OSHA 1910.134 (29 CFR)

-VENTILATION:

Provide sufficient mechanical (general and/or local exhaust) ventilation to afford good air-exchange in the work place consistent with good industrial hygiene practices.

-PROTECTIVE GLOVES:

Heat insulating.

-EYE PROTECTION:

The wearing of safety glasses is consistent with good industrial safety practices.

-OTHER PROTECTIVE EQUIPMENT;:

NONE

Section IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Wash with soap and water after handling.

-OTHER PRECAUTIONS:

Avoid breathing decomposition products.

USER'S RESPONSIBILITY

This MSDS cannot cover all possible situations the use may experience during processing. Each aspect of the user's operation should be examined to determine if additional precautions may be necessary. All health and safety information contained herein should be provided to the user's employees. The user must be relied upon to utilize this information to develop appropriate work practice guidelines and employee instructional programs for his operation. Test all end uses thoroughly to assure appropriate material selection.

DISCLAIMER OF LIABILITY

DISCLAIMER OF LIABILITY

Since the conditions or methods of use are beyond our control, BoMetals, Inc. does not assume any responsibility and expressly disclaims any liability for any use of this material. Information contained herein relates only to environmental, health and safety of the product and is not intend to be relied upon as technical specifications for commercial purposes. This MSDS is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding the accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.

PVC WALL STOPS FOR MOVING CURTAINS

Ribbed Center Bulb

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| RCB-4316 | 50' | .40 | |
| RCB-4316LB | 65' | .74 | |
| RCB-6316 | 100' | .73 | |
| RCB-614 | 125' | .98 | |
| RCB-638 | 125' | 1.16 | |
| RCB-638BR | 125' | 1.19 | |
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| RCB-12316 | 150' | 1.56 | |
| RCB-1212 | 225' | 3.84 | |
| RCB-1212T | 225' | 3.60 | |

Split Rib

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| SR-4316 | 65' | .52 | |
| SR-6316 | 100' | .75 | |
| SR-638 | 100' | 1.54 | |
| SR-938 | 150' | 2.04 | |

Dumbbell With Center Bulb

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| DBC-614 | 100' | 1.20 | |
| DBC-938 | 150' | 3.10 | |
| DBC-938L | 150' | 3.70 | |

Tear Web

| Catalog Number | Head Pressure | Lbs./ LF | Profile |
|----------------|---------------|----------|---------|
| CTW 1-2 | 150' | 1.10 | |
| TW-618 | 65' | .78 | |
| TW-918 | 100' | 1.00 | |
| TW-938 | 150' | 3.78 | |

PAGE 3 & 4 PVC PROFILES AVAILABLE IN TPER