



Submittal Review Response

Project Name: *Hilo WWTP Rehabilitation and Replacement Project Phase 1*
Submittal No.: *03150-002.0*
Date: *8/22/2025*

Client: County of Hawai'i Carollo Project No.: 203975
Contractor: Nan, Inc.
Submittal Name: Concrete Accessories Submitted
Reviewed By: Marissa Kurniawan, Felicia Fan, Hipom Caleb Che

SUBMITTAL REVIEW

Review is for general compliance with contract documents. No responsibility is assumed by Carollo for correctness of quantities, dimensions, and details. No deviation or variation is approved unless specifically addressed in these review comments. Refer to Section 01330 for additional requirements. The Contractor shall assume full responsibility for coordination with all other trades and deviations from contract requirements.

Approved	<input type="checkbox"/> No Exceptions
	<input type="checkbox"/> Make Corrections Noted - See Comments
	<input checked="" type="checkbox"/> Make Corrections Noted - Confirm
Not Approved	<input type="checkbox"/> Correct and Resubmit
	<input type="checkbox"/> Rejected - See Remarks
Receipt Acknowledged	<input type="checkbox"/> Filed for Record
	<input type="checkbox"/> With Comments - Resubmit

Review Comments:

1. Waterstop shape shall be selected in accordance with Specification Section 03150-2.02, Typical Detail S106, and as specified on the drawings.

High Priority

CONTRACTOR SUBMITTAL TRANSMITTAL FORM REV. A

Owner: County of Hawaii
Contractor: Nan, Inc.
Project Name: Hilo WWTP Phase 1
Submittal Title:
TO:
From: Nan Inc.

Project No.: WW-4705R
Submittal Number:
For Information Only

Specification No. and Subject of Submittal / Equipment Supplier	
Spec:	Paragraph:
Authored By:	Date Submitted:

Submittal Certification	
Check Either (A) or (B):	
<input type="checkbox"/> (A)	We have verified that the equipment or material contained in this submittal meets all the requirements specified in the project manual or shown on the contract drawings with <u>no exceptions</u> .
<input type="checkbox"/> (B)	We have verified that the equipment or material contained in this submittal meets all the requirements specified in the project manual or shown on the contract drawings <u>except</u> for the deviations listed.
Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.	

General Contractor's Reviewer's Signature:		
Printed Name and Title: In the event, Contractor believes the Submittal response does or will cause a change to the requirements of the Contract, Contractor shall immediately give written notice stating that Contractor considers the response to be a Change Order.		
Firm:	Signature:	Date Returned:

PM/CM Office Use	
Date Received GC to PM/CM:	
Date Received PM/CM to Reviewer:	
Date Received Reviewer to PM/CM:	
Date Sent PM/CM to GC:	

Nan, Inc

PROJECT: HILO WWTP REHABILITATION
AND REPLACEMENT PROJECT - PHASE 1

JOB NO. WW-4705R

THIS SUBMITTAL HAS BEEN CHECKED BY
THIS CONTRACTOR. IT IS CERTIFIED
CORRECT, COMPLETE, AND IN
COMPLIANCE WITH CONTRACT
DRAWINGS AND SPECIFICATIONS. ALL
AFFECTED CONTRACTORS AND
SUPPLIERS ARE AWARE OF, AND WILL
INTEGRATE THIS SUBMITTAL (UPON
APPROVAL) INTO THEIR OWN WORK.

DATE RECEIVED _____
SPECIFICATION SECTION # _____
SPECIFICATION _____
PARAGRAPH _____
DRAWING _____
SUBCONTRACTOR _____
SUPPLIER _____
MANUFACTURER _____

CERTIFIED BY CQCM or Designee : _____

SECTION 03150

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 1. Waterstops.
 2. Joint fillers.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. D570 - Standard Test Method for Water Absorption of Plastics.
 - 2. D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - 3. D638 - Standard Test Method for Tensile Properties of Plastics.
 - 4. D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
 - 5. D747 - Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam.
 - 6. D792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
 - 7. D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - 8. D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - 9. D2240 - Standard Test Method for Rubber Property - Durometer Hardness.
 - B. American National Standards Institute (ANSI):
 - 1. A135.4 - Basic Hardboard.
 - C. U. S. Army Corps of Engineers (USACE):
 - 1. CRD-C-572, Specification for Polyvinyl Chloride Waterstop.

1.03 SUBMITTALS

- A. Product data:

 - ✓ 1. Polyvinyl chloride waterstops: Complete physical characteristics.
 - 2. Preformed expansion joint material: Sufficient information on each type of material for review to determine conformance of material to requirements specified.

B. Samples:

 - 1. Polyvinyl chloride waterstop.

- C Laboratory test reports: Indicating that average properties of polyvinyl chloride waterstops material and finish conform to requirements specified in this Section.
- D. Quality control submittals:
 - 1. Certificates of Compliance:
 - a. Written certificates that polyvinyl chloride waterstops supplied on this Project meet or exceed physical property in accordance with USACE CRD-C-572 and the requirements of this Section.
 - 2. Manufacturer's instructions: For materials specified in this Section that are specified to be installed with such instructions.

1.04 QUALITY ASSURANCE

- A. Mock-ups:
 - 1. Welding demonstration:
 - a. Demonstrate ability to weld acceptable joints in polyvinyl chloride waterstops before installing waterstop in forms.
- B. Field joints:
 - 1. Polyvinyl chloride waterstops field joints: Free of misalignment, bubbles, inadequate bond, porosity, cracks, offsets, and other defects which would reduce the potential resistance of material to water pressure at any point. Replace defective joints. Remove faulty material from site and disposed of by Contractor at its own expense.
- C. Inspections:
 - 1. Quality of welded joints will be subject to acceptance of Engineer.
 - 2. Polyvinyl chloride waterstop: Following defects represent partial list that will be grounds for rejection:
 - a. Offsets at joints greater than 1/16 inch or 15 percent of the material thickness, at any point, whichever is less.
 - b. Exterior crack at joint due to incomplete bond, which is deeper than 1/16 inch or 15 percent of material thickness, at any point, whichever is less.
 - c. Any combination of offset or crack that will result in net reduction in cross section of waterstop in excess of 1/16 inch or 15 percent of material thickness, at any point, whichever is less.
 - d. Misalignment of joint that will result in misalignment of waterstop in excess of 1/2 inch in 10 feet.
 - e. Porosity in welded joint as evidenced by visual inspection.
 - f. Bubbles or inadequate bonding.

PART 2 PRODUCTS

2.01 JOINT FILLERS

- A. General:
 - 1. Use specific type in applications as indicated on the Drawings.
 - 2. Do not use scrap or recycled materials to manufacture joint fillers.

- B. Preformed expansion joint materials:
1. Bituminous fiber expansion joint material:
 - a. Properties:
 - 1) Thickness: To match joint width indicated on the Drawings.
 - 2) Asphalt-impregnated fiber in accordance with ASTM D1751.
 - b. Manufacturers: One of the following or equal:
 - 1) Durajoint.
 - 2) W.R. Meadows, SealTight Fibre Expansion Joint.
 2. Synthetic sponge rubber expansion joint material:
 - a. Properties:
 - 1) Thickness: As recommended for width indicated on the Drawings.
 - 2) Material in accordance with ASTM D1752, Type I.
 - b. Manufacturers: One of the following or equal:
 - 1) Williams Products Inc., Everlastic 1300.
 - 2) W.R. Meadows, SealTight Sponge Rubber.

2.02 WATERSTOPS

- A. Waterstops - polyvinyl chloride (PVC):
1. Manufactured from prime virgin polyvinyl chloride plastic compound containing the plasticizers, resins, stabilizers, and other materials necessary to meet the requirements as specified in this Section.
 2. Manufacturers: One of the following or equal:
 - a. Vinylex Corp.
 - b. Sika Corp., Greenstreak PVC Waterstop.
 3. Type: Ribbed waterstop:
 - a. Construction joints: 6-inch wide ribbed type.
 - b. Expansion joint for wall penetrations for concrete encased electrical duct banks: 6-inch ribbed type with hollow center bulb.
 - c. Expansion joints: 9-inch wide ribbed type with hollow center bulb.
 - d. Dumbbell-type waterstop will not be allowed unless otherwise specified or indicated on the Drawings.
 - e. Retrofit waterstop where indicated on the Drawings:
 - 1) L-shape: 3-inch by 3-inch ribbed type.
 - f. No scrap or reclaimed material shall be used.
 4. Properties as indicated in the following table:

Physical Characteristics	Test Method	Required Results
Specific Gravity	ASTM D792	Not less than 1.3.
Hardness	ASTM D2240	70 to 90 Type A15 Shore durometer.
Tensile Strength	ASTM D638	Not less than 2,000 pounds per square inch.
Ultimate Elongation	ASTM D638	Not less than 300 percent.
Alkali Extraction	CRD-C-572	Change in weight after 7 days: Between minus 0.1 percent and plus 0.25 percent. Change in hardness after 7 days: Not more than plus 5 points.

Physical Characteristics	Test Method	Required Results
Low Temperature Brittle Point	ASTM D746	No sign of cracking or chipping at -35 degrees Fahrenheit.
Water Absorption	ASTM D570	Not more than 0.15 percent after 24 hours.
Accelerated Extraction Test	CRD-C-572	Tensile strength: Not less than 1,600 pounds per square inch. Elongation: Not less than 280 percent.
Stiffness in Flexure	ASTM D747	Not less than 600 pounds per square inch.
Tear Resistance	ASTM D624	Not less than 225 pounds per inch.
Thickness	-	3/8 inch.
Center Bulb		
6-inch Waterstops	-	7/8 inch or 1-inch nominal outside diameter.
9-inch Waterstops	-	For expansion joints 1 inch and narrower: 1-inch nominal outside diameter. For expansion joints wider than 1 inch: 2-inch nominal outside diameter.
Allowable Tolerances		
Width	-	Plus or minus 3/16 inch.
Thickness	-	Plus or minus 1/32 inch.

B. Waterstops - hydrophilic rubber:

1. As specified in Section 03154 - Hydrophilic Rubber Waterstop.

PART 3 EXECUTION

3.01 INSTALLATION

A. Waterstops:

1. General:

- a. Store waterstops so as to permit free circulation of air around waterstop material and prevent direct exposure to sunlight.
- b. Install waterstops in concrete joints where indicated on the Drawings.
- c. Carry waterstops in walls into lower slabs and join to waterstops in slabs with appropriate types of fittings.
- d. In waterbearing structures: Provide all joints with waterstops, whether indicated on the Drawings or not.
- e. Provide waterstops that are continuous.
- f. Set waterstops accurately to position and line as indicated on the Drawings.

- g. Hold and securely fix edges in position at intervals of not more than 24 inches so that they do not move during placing of concrete.
 - h. Position the waterstop so that symmetrical halves of waterstop are equally divided between concrete pours. Center axis of waterstop shall be coincident with centerline of the joint.
 - i. Do not drive nails, screws, or other fasteners through waterstops in vicinity of construction joints.
 - j. Use wires at not more than 24 inches on centers near outer edge of waterstop to tie waterstops into position.
 - k. Special clips may be used in lieu of wires, at Contractor's option.
 - l. Terminate waterstops 3 inches from top of finish surfaces of walls and slabs unless otherwise specified or indicated on the Drawings.
 - m. When any waterstop is installed in concrete on one side of joint, while the other half or portion of the waterstop remains exposed to the atmosphere for more than 2 days, take suitable precautions to shade and protect exposed waterstop from direct rays of sunlight during entire exposure and until exposed portion is embedded in concrete.
 - n. When placing concrete at waterstops in slabs, lift edge of waterstop while placing concrete below the waterstop. Manually force waterstop against and into concrete, and then cover waterstop with fresh concrete.
2. Polyvinyl chloride waterstop:
- a. Install waterstops so that joints are watertight.
 - b. Weld joints such as unions, crosses, ells, and tees, with thermostatically controlled equipment recommended by waterstop manufacturer:
 - 1) Do not damage material by heat sealing.
 - 2) Make joints by overlapping, then simultaneously cut ends of sections to be spliced so they will form smooth even joint. Heat cut ends with splicing tool until the plastic melts. Press 2 ends together until plastic cools.
 - 3) Maintain continuity of waterstop ribs and tubular center axis.
 - 4) The splices shall have tensile strength of not less than 60 percent of unspliced materials tensile strength.
 - c. Butt joints of ends of 2 identical waterstop sections may be made while material is in forms.
 - d. Manufacturer shall factory prefabricate joints for crosses and tees.
 - e. Split-type waterstops will not be permitted except where specifically indicated on the Drawings.
 - f. Retrofit waterstop systems shall include waterstop profile, stainless steel batten bars, and stainless steel concrete anchors:
 - 1) Prepare existing concrete surface and apply epoxy as required by waterstop manufacturer.

B. Joints:

1. Construct construction and expansion joints as indicated on the Drawings.
2. Preformed expansion joint material: Fasten expansion joint strips to concrete, masonry, or forms with adhesive. No nailing will be permitted, nor shall expansion joint strips be placed without fastening.

END OF SECTION



WATERPROOFING

Sika[®] Greenstreak[®]

PVC WATERSTOPS

Greenstreak[®]

BUILDING TRUST



Sika® Greenstreak® PVC WATERSTOPS

As an industry pioneer and one of the first manufacturer's of polyvinyl chloride (PVC) waterstop Sika® Greenstreak® provides you with the highest quality and most specified waterstop brand on the market. Sika® Greenstreak®'s PVC waterstop has always been made from a proprietary formula that is self-compounded and only produced from prime virgin materials.

PVC is the industry standard for flexible waterstops, which are typically embedded across and along the joint. PVC is the most versatile waterstop material, offering the broadest design selection and is accepted under the ACI 350 "Code Requirements for Environmental Engineering Concrete Structures". It has great inherent elasticity and is resistant to many waterborne chemicals. It will not discolor concrete or produce electrolytic action.

PHYSICAL PROPERTIES

All Sika® Greenstreak® PVC waterstops are specially formulated and manufactured to meet or exceed industry standard product specifications.

Sika® Greenstreak® PVC Waterstops		
Property	Test	Value
Water absorption	ASTM D570	0.15% max.
Tear resistance	ASTM D624	300 lb/in min.
Ultimate elongation	ASTM D638	350% min.
Tensile strength	ASTM D638	2000 psi min.
Low temperature brittleness	ASTM D746	Passes @ -35°F / -37°C
Stiffness in flexure	ASTM D747	700 psi min.
Specific gravity	ASTM D792	1.38 max.
Hardness Shore A15	ASTM D2240	79±3
Accelerated extraction		
-Tensile strength	Corps of Engineers	1600 psi min.
-Elongation		300% min.
Effect of Alkali	CRD-C 572	
-Weight change		+0.25% -0.10%
-Hardness change		+/-5 points

SIKA CONDUCTS REGULAR TESTING OF MATERIALS.

Independent laboratory tests are available for the following applicable standards:

- Corps of Engineers CRD-C 572-74
- Bureau of Reclamation
- CH2M HILL
- MWH
- Various State Highway and/or Public Works Department Standards

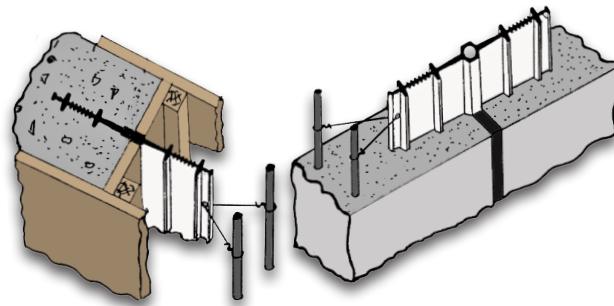
CHOOSING THE RIGHT WATERSTOP

WATERSTOP BASIC USE

Embedded in concrete, across and/or along the joint, waterstops form a watertight diaphragm that prevents the passage of liquid through the joint.

Offering a variety of solutions across all categories of waterstops, Sika has the knowledge and time tested products to meet the most demanding applications.

- Water/Waste Water Treatment Plants
- Lock and Dam Systems
- Reservoirs and Aqueducts
- Flood Walls
- Retaining Walls
- Foundations
- Tunnels and Culverts
- Bridge Abutments
- Containment Structures and Tanks
- Slabs-on-Ground



When you specify Sika® Greenstreak®, you are specifying THE first name in waterstops and the trusted source for superior technical and customer service.



SUGGESTED WATERSTOP DESIGN CHECKLIST

- Verify chemical containment requirements, if any
- Verify hydrostatic head pressure requirements
- Determine joint type and joint movement requirements
- Specify material type for best water sealing performance
- Specify profile and size (by product number, if possible)
- Verify joinery details of dissimilar or asymmetric waterstop profiles, if any (consider using one profile throughout to simplify intersections)
- Specify factory fabrications and fittings for transitions and intersections
- Specify appropriate method for securing waterstop in position (see Sika® Greenstreak® CSI-formatted product specifications for additional guidance)



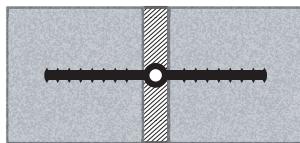
All Sika® PVC and TPER waterstop profiles are NSF-61 Certified.

Certified to
NSF/ANSI 61

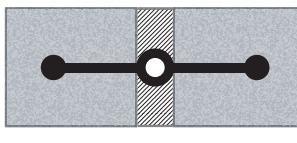
MOVING AND NON-MOVING JOINTS

SELECTING A WATERSTOP SHAPE

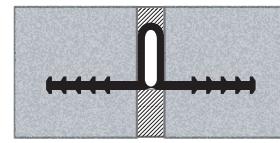
MOVEMENT JOINTS are typically designed to accommodate significant movement due to drying shrinkage, temperature changes, settlement, creep, or live load deflections. The waterstop profile selected must have the ability to accommodate expected joint movement, typically achieved through the use of a centerbulb, tear web, or other suitable waterstop geometry designed to accommodate joint movement. Movement joints typically include contraction joints, expansion joints, and isolation joints. The following profiles are suitable for movement joints:



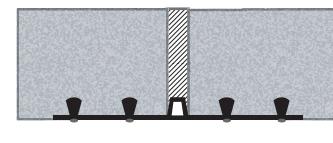
Ribbed with Centerbulb shapes are the most versatile and best sealing type of waterstops available. The centerbulb accommodates lateral, transverse, and shear movement. Larger centerbulbs will accommodate greater movement. Consider using Ribbed with Centerbulb for better sealing characteristics.



Dumbbell with Centerbulb shapes accommodate lateral, transverse, and shear movement. Larger centerbulbs will accommodate greater movement. Consider using Ribbed with Centerbulb for better sealing characteristics.

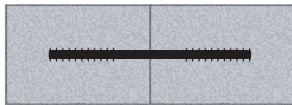


Tear Web shapes accommodate large movements. When joint movement occurs, the tear web ruptures and allows the U-bulb to deform without placing the material in tension.



Base Seal with Tear Web shapes accommodate lateral, transverse, and shear movement. Larger tear web bulbs will accommodate greater movement. Base Seal waterstops have some limitations with transitions and intersections.

NON-MOVING JOINTS typically have 100% of the bonded steel reinforcement continuous through the joint, and expose the waterstop to negligible or no movement. Flat waterstop profiles without a centerbulb or tear web are suitable for non-moving joints. Other waterstop materials may be considered for non-moving joints as well, such as strip-applied or injectable hose waterstops. Examples of waterstop profiles suitable for non-moving joints are as follows:



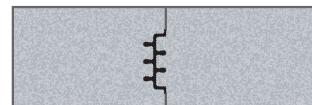
Flat Ribbed shapes are preferred for non-moving joints and provide the best sealing characteristics.



Base Seal is ideal for slab-on-grade joints or backfilled walls and are easy to form. Base Seal waterstops have some limitations with transitions and intersections.

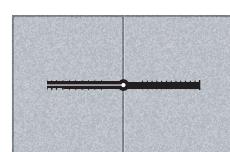
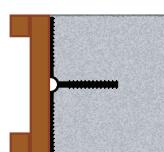


Dumbbell shapes are an alternate profile for non-moving joints. Consider ribbed shapes for better sealing characteristics.

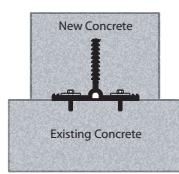


Labyrinth is primarily used in vertical joints. Labyrinth shapes create a keyed joint and do not require split bulkheads. Labyrinth can be difficult to use in horizontal joints and there are some limitations with transitions and intersections.

Split Flange shapes can simplify forming. The split flange is opened and attached to the bulkhead for placement of the first concrete element. After stripping the bulkhead, the flange is closed and anchored for placement of the adjoining element. Split waterstops are suitable for straight runs only. Transitions and intersections are not practical with these profiles.



Retrofit Waterstops seal joints where new construction meets an existing structure and can be suitable for moving joints. Systems include stainless steel batten bars and fasteners for anchoring to the existing structure with the aid of a structural epoxy gel.

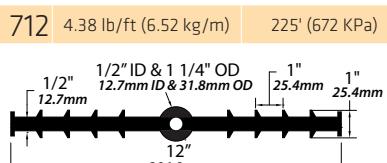
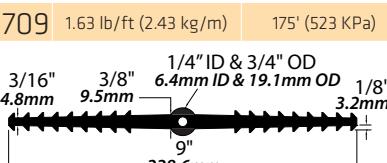
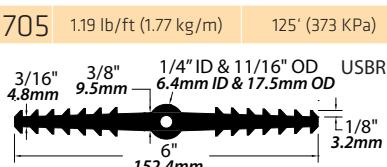
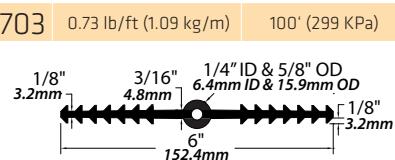
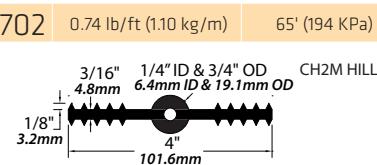
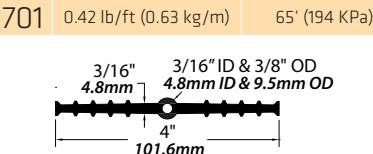
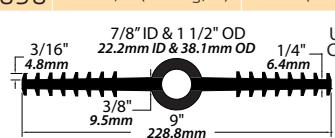


PROJECT PROFILES AND SIZES

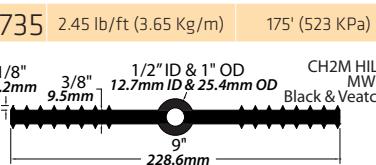
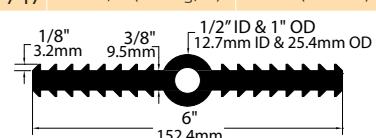
SHAPES ARE DRAWN TO VARYING SCALES

RIBBED CENTERBULB

NO.	STD. WT.	HEAD PRESS.
696	2.65 lb/ft (3.94 kg/m)	175' (523 kPa)
701	0.42 lb/ft (0.63 kg/m)	65' (194 kPa)
702	0.74 lb/ft (1.0 kg/m)	65' (194 kPa)
703	0.73 lb/ft (1.09 kg/m)	100' (299 kPa)
705	1.19 lb/ft (1.77 kg/m)	125' (373 kPa)
709	1.63 lb/ft (2.43 kg/m)	175' (523 kPa)
712	4.38 lb/ft (6.52 kg/m)	225' (672 kPa)

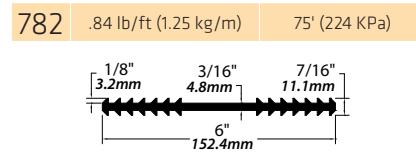
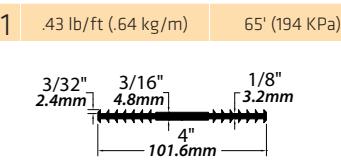
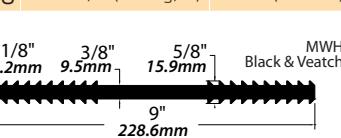


717	1.52 lb/ft (2.26 kg/m)	125' (373 kPa)
732	1.60 lb/ft (2.38 kg/m)	125' (373 kPa)



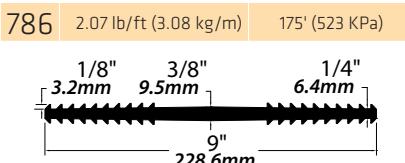
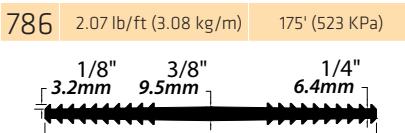
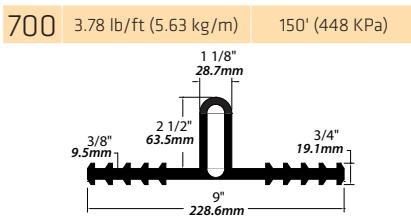
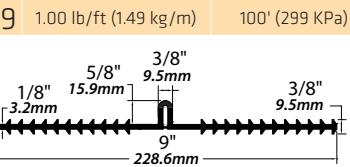
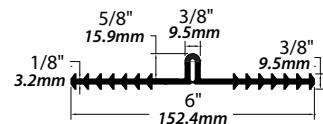
FLAT RIBBED

NO.	STD. WT.	HEAD PRESS.
646	2.37 lb/ft (3.53 kg/m)	175' (523 kPa)
679	1.50 lb/ft (2.23 kg/m)	125' (373 kPa)
781	.43 lb/ft (.64 kg/m)	65' (194 kPa)
782	.84 lb/ft (1.25 kg/m)	75' (224 kPa)



RIBBED TEAR WEB

NO.	STD. WT.	HEAD PRESS.
698	0.78 lb/ft (1.16 kg/m)	65' (194 kPa)
699	1.00 lb/ft (1.49 kg/m)	100' (299 kPa)
700	3.78 lb/ft (5.63 kg/m)	150' (448 kPa)



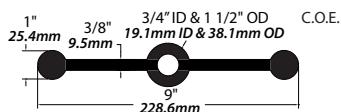
FOR A FULL LIST
OF AVAILABLE
WATERSTOP PROFILES VISIT:
USA.SIKA.COM

PROJECT PROFILES AND SIZES

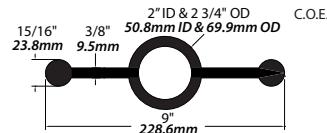
SHAPES ARE DRAWN TO VARYING SCALES

DUMBBELL CENTERBULB

NO.	STD. WT.	HEAD PRESS.
753	3.10 lb/ft (4.61 kg/m)	150' (448 KPa)



NO.	STD. WT.	HEAD PRESS.
754	3.70 lb/ft (5.51 kg/m)	150' (448 KPa)

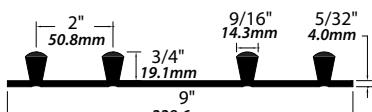


NO.	STD. WT.	HEAD PRESS.
757	1.41 lb/ft (2.10 kg/m)	100' (299 KPa)

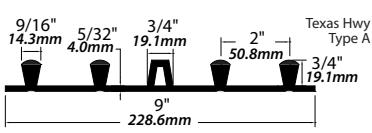


BASE SEAL

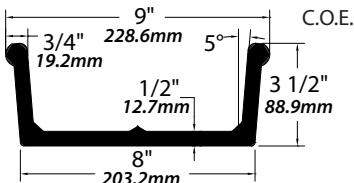
NO.	STD. WT.	HEAD PRESS.
771	1.53 lb/ft (2.28 kg/m)	100' (299 KPa)



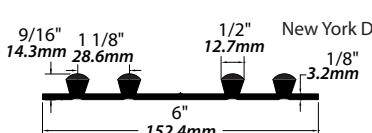
NO.	STD. WT.	HEAD PRESS.
772	1.85 lb/ft (2.75 kg/m)	100' (299 KPa)



NO.	STD. WT.	HEAD PRESS.
775	4.64 lb/ft (6.91 kg/m)	



NO.	STD. WT.	HEAD PRESS.
776	.83 lb/ft (1.24 kg/m)	100' (299 KPa)

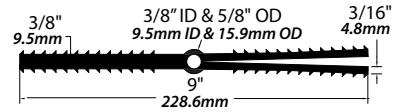


SPLIT FLANGE

NO.	STD. WT.	HEAD PRESS.
724	1.54 lb/ft (2.29 kg/m)	125' (373 KPa)

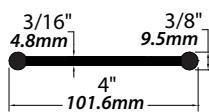


NO.	STD. WT.	HEAD PRESS.
727	2.25 lb/ft (3.35 kg/m)	150' (448 KPa)

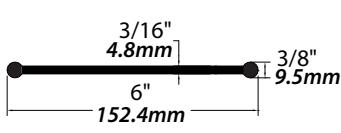


DUMBBELL

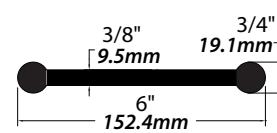
NO.	STD. WT.	HEAD PRESS.
741	0.47 lb/ft (0.70 kg/m)	65' (194 KPa)



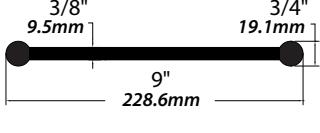
NO.	STD. WT.	HEAD PRESS.
746	0.71 lb/ft (1.06 kg/m)	75' (224 KPa)



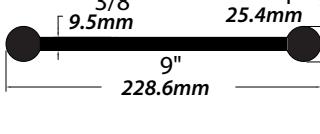
NO.	STD. WT.	HEAD PRESS.
748	1.51 lb/ft (2.25 kg/m)	125' (373 KPa)



NO.	STD. WT.	HEAD PRESS.
751	2.18 lb/ft (3.24 kg/m)	150' (448 KPa)

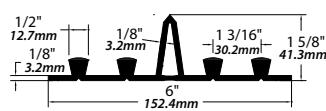


NO.	STD. WT.	HEAD PRESS.
752	2.55 lb/ft (3.79 kg/m)	150' (448 KPa)



CRACK INDUCER

NO.	STD. WT.	HEAD PRESS.
639	1.03 lb/ft (1.53 kg/m)	100' (299 KPa)



PROJECT PROFILES AND SIZES

SHAPES ARE DRAWN TO VARYING SCALES

RETROFIT WATERSTOP SYSTEMS

NO.	SYSTEM STD. WT. with hardware	NO.	SYSTEM STD. WT. with hardware
581	1.51 lb/ft (2.25 kg/m)	655	1.38 lb/ft (2.05 kg/m)
609	2.92 lb/ft (4.35 kg/m)	667	8.27 lb/ft (12.31 kg/m)

A NOTE ABOUT HEAD PRESSURE RATINGS: Head Pressure Ratings are based on parameters published in the Corps of Engineers document, Waterstops and Other Preformed Joint Materials for Civil Works Structures EM 1110-2-2101, dated 30 September 1995. Sample testing conducted by Sika® on select profiles has indicated a conservative tendency in these ratings. That said, the published Head Pressure Ratings should be considered to be ultimate values. An appropriate safety factor should be applied to these values. Contact a Sika® Greenstreak® representative for more information.

INSTALLATION AIDS AND FABRICATIONS

PVC waterstops must be securely positioned in the forms to prevent deflection or misalignment during concrete placement. This is achieved by tying off the outer edge of the waterstop to adjacent reinforcing steel. Sika offers options to properly anchor PVC waterstop, including:

- PUNCHED FLANGES - most ribbed shapes can be provided with punched flanges
- GROMMETS - select shapes can be provided with brass grommets
- HOG RINGS AND PLIERS - available for field application and suitable for most shapes

Virtually every concrete structure requiring a PVC waterstop is going to encounter a joint that will change direction or intersect with another joint. One of the benefits PVC offers is the ability to heat weld the material to create a continuous sealing diaphragm within the joints of a concrete structure. Waterstop failures are often the result of improper field fabricated transitions and intersections. Sika strongly recommends factory made fabrications to help reduce failure of your waterstop system. Heat welding is the only recognized installation method for PVC waterstop. Sika® Greenstreak® offers a full range of Splicing Irons with replacement covers to fill this requirement. Please contact the Sika® Greenstreak® sales department for additional details.

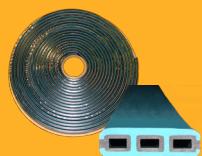


PVC WATERSTOP COMPANION PRODUCTS

SIKA® GREENSTREAK® ALSO OFFERS THE BELOW ACCESSORY ITEMS, WHICH CAN BE USED IN CONJUNCTION WITH OUR PVC WATERSTOPS ENSURING A FULLY WATERTIGHT STRUCTURE .



X-Plug® Mechanical Taper Tie Void Plug
The X-Plug® is a "patented" mechanical plug specifically designed to SEAL the void formed in a concrete wall by the removal of a taper tie rod or pass through tie sleeve.



Sika® Hydrotite® is a world renowned hydrophilic waterstop. Composed of modified chloroprene rubber protected with a special delay coating, Hydrotite® expands when exposed to water, creating an effective compression seal within joints where limited movement will occur.



Sika® Swellstop™ is comprised of bentonite clay and butyl rubber. It is a hydrophilic waterproofing material that expands upon contact with water to form a compression seal in non-working joints. Swellstop™ is available in three sizes and must be used in conjunction with **Swellstop™ Primer Adhesive**.



SikaFuko® VT injection hose is the world's number one injection hose system. SikaFuko® VT is available in two sizes that can deliver our specially formulated 306 or 215 injection resins along with Portland cement, microfine cement or a wide variety of other injectable materials to seal cracks or voids in the joint area.

The sale of all Sika products are subject to the following Limited Warranty:

LIMITED MATERIAL WARRANTY

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Our most current General Sales Conditions shall apply. Please consult the Product Data Sheets prior to any use and processing.



SIKA CORPORATION
ISO 9001: 2015 W/DESIGN
CERT# 17.318.1

SIKA CORPORATION
Sika Saint Louis Sales Office
3400 Tree Court Industrial Blvd.
St. Louis, MO 63122
USA

Contact
Phone: 800 325 9504
Fax: 800 551 5145
usa.sika.com

Greenstreak®

BUILDING TRUST

Sika®

PRODUCT DATA SHEET

Greenstreak® PVC Waterstop

Flexible PVC Waterstop

PRODUCT DESCRIPTION

Greenstreak® PVC Waterstop is a flexible PVC waterstop for joint waterproofing.

USES

- Water/Waste Water Treatment Plants
- Lock and Dam Systems
- Reservoirs and Aqueducts
- Flood Walls
- Retaining Walls
- Foundations
- Tunnels and Culverts
- Bridge Abutments
- Containment Structures and Tanks
- Slabs-on-Ground

CHARACTERISTICS / ADVANTAGES

- Embedded in concrete, across and/or along the joint, waterstops form a watertight diaphragm that prevents the passage of liquid through the joint.
- Suitable for potable water contact, meets NSF/ANSI Standard 61.
- Meets the physical property requirements of Army Corp. of Engineers PVC Waterstop Specification CRD-C 572-74

PRODUCT INFORMATION

Packaging	Available in various lengths.
Shelf Life	N/A
Storage Conditions	Material must be protected from direct sunlight

TECHNICAL INFORMATION

Product Data Sheet
Greenstreak® PVC Waterstop
November 2019, Version 01.02
020703100100000113

Shore A Hardness	79 +/- 3	(ASTM D2240)
Tensile Strength	2000 psi min.	(ASTM D638)
Elongation	350%	(ASTM D638)
Tear Strength	300 lb/in min	(ASTM D624)
Ambient Air Temperature	Low Temperature Brittleness Passes at -35°F (-37°C)	(ASTM D746)

APPLICATION INSTRUCTIONS

APPLICATION METHOD / TOOLS

Greenstreak® PVC Waterstop must be installed prior to concrete placement to ensure proper positioning and concrete consolidation around the waterstop. All transitions, intersections, and splices should be heat welded to maintain continuity. Factory Made Fabrications are recommended for all intersections and changes of direction. Specific installation requirements will vary depending on the style of profile, please refer to Sika's PVC Waterstop Installation Guide and Splicing PVC Waterstop Installation Guide available at usa.sika.com. All transitions, intersections, and splices must be heat welded using a Sika Greenstreak Splicing Iron in compliance with the instructions shown in Sika's Splicing PVC Waterstop Installation Guidelines found at usa.sika.com.

LIMITATIONS

The size, shape, and style of waterstop should be based on specific application needs. Please consult a Sika Greenstreak Engineer at 800-325-9504 for assistance with profile selection.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

REGULATION (EC) NO 1907/2006 - REACH

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS**

**PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT
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BY OTHERS.**

Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/group/SikaCorp/termsandconditions.html> or by calling 1-800-933-7452.

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usa.sika.com



Sika Mexicana S.A. de C.V.
Carretera Libre Celaya Km. 8.5
Fracc. Industrial Balvanera
Corregidora, Queretaro
C.P. 76920
Phone: 52 442 2385800
Fax: 52 442 2250537

GreenstreakPVCWaterstop-en-US-(11-2019)-1-2.pdf

Product Data Sheet
Greenstreak® PVC Waterstop
November 2019, Version 01.02
020703100100000113

**QUALITY CONTROL SUBMITTAL
CERTIFICATES OF COMPLIANCE
CRD-C-572**



Sika Corporation · 3400 Tree Court Industrial Blvd. · St. Louis, MO 63122 USA

Matthew Chun

Nan Inc.

161 Silva St.

Hilo, HI 96720

Hilo WWTP

Hilo, HI

**CERTIFICATE OF COMPLIANCE FOR
PVC WATERSTOP**

July 31, 2025

Dear Matthew:

Please allow this letter to stand as certification that Sika Greenstreak flexible PVC waterstop has been tested in accordance with the Corps of Engineers CRD-C-572 Specification for Polyvinyl Chloride Waterstops and exceeds all physical property requirements set forth by the aforementioned Specification. This includes profile 679 that you have inquired about. Also note that all Greenstreak PVC waterstop is extruded from an elastomeric plastic compound comprised of virgin PVC resin, which is required by the Corps of Engineers specification as well.

NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIIA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. SIIA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

Sincerely,

Thomas S Westphale

Tom Westphale, PE
Engineering Manager