



SUGGESTED MASTER SPECIFICATION SECTION 03 15 13 PVC WATERSTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Provision of waterstops embedded in concrete and spanning control, expansion, and/or construction joints to create a continuous diaphragm to prevent fluid migration.
- B. Non-metallic waterstops for use in concrete joints subjected to chlorinated water, seawater, and many waterborne chemicals.

1.02 REFERENCES

- A. PVC WATERSTOP
 - 1. Corps of Engineers: CRD-C 572-74
 - 2. American Society for Testing Materials (ASTM)
 - 3. Bureau of Reclamation: C-902
 - 4. Canadian General Standards Board: 41-GP-35M Types 1 & 3

1.03 QUALITY ASSURANCE

- A. Waterstop manufacturer shall demonstrate five years (minimum) continuous, successful experience in production of waterstops.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store waterstops under tarps to protect from oil, dirt, and sunlight.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Provide flexible PVC (polyvinyl chloride) waterstop as manufactured by Greenstreak, profile style number (fill in profile style number).
- B. The PVC waterstop shall be extruded from an elastomeric plastic material of which the basic resin is prime virgin polyvinyl chloride. The PVC compound shall not contain any scrapped or reclaimed material or pigment whatsoever.
- C. Performance Requirements as follows:

Property	Test Method	Required Limits
Water absorption	ASTM D 570	0.15% max
Tear Resistance	ASTM D 624	300 lb/in (52.5 kN/m) min.
Ultimate Elongation	ASTM D 638	350% min.
Tensile Strength	ASTM D 638	2000 psi (13.78 Mpa) min.
Low Temperature Brittleness	ASTM D 746	No Failure @ -35° F (-37° C)
Stiffness in Flexure	ASTM D 747	700 psi (4.82 Mpa) min.
Specific Gravity	ASTM D 792	1.38 max.

Hardness, Shore A	ASTM D 2240	79 $\pm$ 3
Tensile Strength after accelerated extraction	CRD-C 572	1600 psi (9.54 Mpa) min.
Elongation after accelerated extraction	CRD-C 572	300% min.
Effect of Alkalies after 7 days: Weight Change Hardness Change	CRD-C 572	between -0.10% / +0.25% +/- 5 points

2.02 ACCESSORIES

- A. Provide factory made waterstop fabrications for all changes of direction, intersections, and transitions leaving only straight butt joint splices for the field.
- B. Provide hog rings or grommets spaced at 12 inches on center along length of waterstop.
- C. Provide Teflon coated thermostatically controlled waterstop splicing irons for field butt splices.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Field butt splices shall be heat fused welded using a Teflon coated thermostatically controlled waterstop splicing iron at approximately 380 degrees F. Follow approved manufacturer recommendations. Lapping of waterstop, use of adhesives, or solvents shall not be allowed.
- B. Center waterstop in joint and secure waterstop in correct position using hog rings or grommets spaced at 12 inches on center along the length of the waterstop and wire tie to adjacent reinforcing steel.

3.02 FIELD QUALITY CONTROL

- A. Waterstop splicing defects which are unacceptable include, but are not limited to the following:
 - 1. Tensile strength less than 80 percent of parent section.
 - 2. Misalignment of centerbulb, ribs, and end bulbs greater than 1/16 inch.
 - 3. Bond failure at joint deeper than 1/16 inch or 15 percent of material thickness.
 - 4. Misalignment that reduces waterstop cross section more than 15 percent.
 - 5. Visible porosity in the weld.
 - 6. Bubbles or inadequate bonding.
 - 7. Visible signs of splice separation when cooled splice is bent by hand at a sharp angle.
 - 8. Charred or burnt material.

END OF SECTION

Greenstreak Group, Inc.

3400 Tree Court Industrial Blvd. St. Louis, MO 63122 USA
 www.Greenstreak.com 800-325-9504 or 636-225-9400



KCI Construction Company, Inc.
10315 Lake Bluff Drive
St. Louis, MO 63123
O: 314.894.8888 | F: 314.894.7418

Submittal Cover Page

Webster University

Interdisciplinary Science Building

8274 Big Bend Blvd

Webster Groves, MO 63119

KCI Project #: 16-008

Specification Section: 03 3000 - Cast-In-Place Concrete

Submittal: Waterstops

Subcontractor: Carter-Waters

Paragraph #	Description	Type
2.6 B.	Greenstreak: #773 - Ribbed Flat Waterstop	Product Data: Cut Sheet
	*FOR ALL VERTICAL CONCRETE WALL POUR JOINTS	
	Greenstreak: #667 - Retrofit Waterstop System	Product Data: Cut Sheet
	*FOR CONNECTIONS TO EXISTING CONCRETE JOINTS	
	Greenstreak: 7300 Epoxy	Product Data
	*FOR CONNECTIONS TO EXISTING CONCRETE JOINTS	
2.6 C.	Greenstreak: Swellstop	Product Data
	*FOR ALL HORIZONTAL FOOTING AND CONCRETE WALL POUR JOINTS	
	Greenstreak: Swellstop Primer Adhesive	Product Data
	*FOR ALL HORIZONTAL FOOTING AND CONCRETE WALL POUR JOINTS	
2.6	Greenstreak: Waterstop Catalog	Product Data
	Greenstreak: Data Sheet	Product Data

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
☐ CRITICAL	

ITEM BEING SUBMITTED (check only one)

- | | | |
|---|--|--|
| ☐ Shop Drawings | ☐ Certification / Qualifications | ☐ Coordination Drawing |
| ☐ Samples (____ copies) | ☐ Record Documents | ☐ Calculations |
| ☐ LEED Submittal | ☐ Product Data | ☐ Schedules |
| ☐ Other _____ | ☐ O&M Manuals | |

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action
 ☐ Information Only
 ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION (SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By: **Devin D. Gates**

REVIEWED BY

DATE

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE
☐ A. No Exceptions Taken No further review of submittal is required.
☐ B. Make Corrections Noted Incorporate corrections in work; resubmission is not required.
☐ C. Revise and Resubmit Revise as noted, and resubmit for review.
☐ D. Rejected Submittal is not in compliance with Contract Documents; provide new submittal.
☐ E. For Record / Information Only Submittal was reviewed for Record / Information purposes only.
☐ F. Not Required for Review Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS

☐ See attached sheet(s) for additional comments

SHOP DRAWING / SUBMITTAL REVIEW	
☒ NO EXCEPTION TAKEN	☐ EXCEPTIONS NOTED, RESUBMITTAL NOT REQUIRED
☐ REJECTED	
☐ REVIEWED FOR INFORMATION ONLY	☐ REVISE AND RESUBMIT AS NOTED
Checking is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: Dimensions which shall be confirmed and correlated at the job site, fabrication processes and techniques of the construction, coordination of his work with that of all other trades and the satisfactory performance of his work.	
DAVID MASON & ASSOCIATES, INC.	
REVIEW BY: <u> JYW / DMA </u> DATE: <u> 04/22/2016 </u>	

REVIEWED BY

DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0021

Paric Corporation

PROJECT: Webster University Interdisciplinary Science Building

DATE: 04/21/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Waterstop product data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:		SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings		☐ Approval	☐ Approved as Submitted
☐ Letter		☐ Your Use	☐ Approved as Noted
☐ Prints		☐ As Requested	☐ Returned After Loan
☐ Change Order		☐ Review and Comment	☐ Resubmit
☐ Plans			☐ Submit
☐ Samples		SENT VIA:	☐ Returned
☐ Specifications		☐ Attached	☐ Returned for Corrections
☒ Other:		☐ Separate Cover Via:	☒ Due Date: 03/07/2016

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		033000-013	1		04/21/2016	Waterstop product data	Open

NOTES:

CC:

Signed: _____
Devin Gates



KCI Construction Company, Inc.
ST. LOUIS: 10315 Lake Bluff Drive | St. Louis, MO 63123
LEBANON: 119 West Fremont | Lebanon, MO 65536

O: 314.894.8888
F: 314.894.7418
www.kciconstruction.com

SUBMITTAL TRANSMITTAL

Date Sent: 04/21/2016

Project: Webster University –
Interdisciplinary Science Building

Project #: 16-008

Subject: 03 3000 Cast-In-Place Concrete –
Waterstops

Submittal ID: 0004

Type: Submittal

Purpose: For Approval

Sent Via: Email (PDF)

Transmitted To:

Devin Gates
Paric
77 Westport Plaza, Suite 250
St. Louis, MO, 63146
Phone: (636) 561-9592
Email: ddgates@paric.com

Transmitted From:

Kyle Nieman
KCI Construction Company
10315 Lake Bluff Drive
St. Louis, MO 63123
Phone: (314) 200-6486
Email: knieman@kciconstruction.com

Contents:

Qty: 1

Dated: 04/21/2016

Submittal Package No.: 0004 – 03 3000 – 00

Description: 03 3000-00_Cast-In-Place Concrete – Waterstops

Remarks: Please review and return at your earliest opportunity. Thanks,

 04/21/16

Kyle Nieman
KCI Construction Company

A BUILDER, NOT A BROKER.

General Building | Design/Build | Heavy Industrial | Transportation



KCI Construction Company, Inc.

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WEBSTER UNIVERSITY – INTERDISCIPLINARY SCIENCE BUILDING

St. Louis, MO

Submittal Description: Cast-In-Place Concrete – Waterstops

Submittal #: 0004 – 03 3000 – 00

Notes:

This submittal/drawing has been reviewed and found to be in general conformance with the contract documents.

APPROVED

APPROVED AS NOTED

REVISE AND RESUBMIT

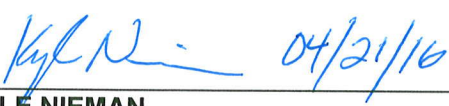
X

03 3000

SPEC SECTION

04/21/2016

DATE


KYLE NIEMAN

KCI CONSTRUCTION CO.

A BUILDER, NOT A BROKER.

General Building | Design/Build | Heavy Industrial | Transportation