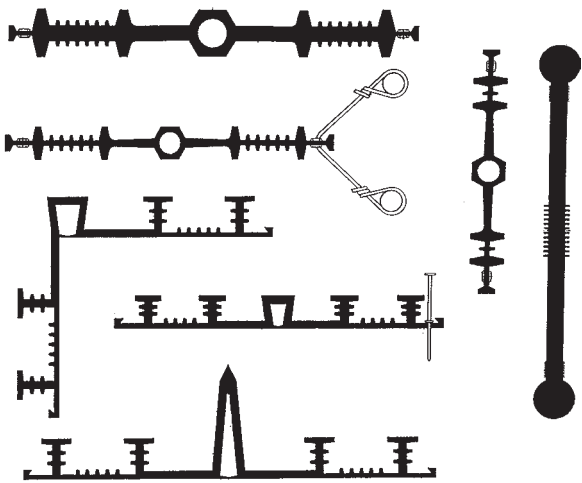


GREENSTREAK®



INTERNATIONAL WATERSTOPS FOR CONCRETE



Concrete structures are only as watertight as the waterstops that join them. Greenstreak waterstops stop leaks before they start... in the joints of concrete structures.

Since 1950, Greenstreak has served the general and architectural concrete construction industry. Innovation, engineering and quality craftsmanship combined to produce products of choice for the industry's owners, designers and contractors.

Greenstreak maintains its position of industry leadership by responding to the unique needs of our customers. Greenstreak's dedicated technical and customer service staffs are active participants in the concrete industry to take advantage of the latest technological advances, communicate with our market and analyze trends.

Centrally located, Greenstreak products are readily available through a dedicated network of Concrete Forming and Accessory Distributors both nationally and internationally.

Typical Structures Requiring Waterstops Include:

- Water and waste water treatment facilities
- Primary and secondary containment structures
- Tunnels and culverts
- Dams, locks, canals, water reservoirs and aqueducts
- Pipe penetrations
- Swimming pools
- Storage tanks
- Retaining walls
- Foundations
- Slabs on grade



Water and Waste Water Treatment Plants



Hydroelectric and Flood Control Projects

GREENSTREAK®

3400 Tree Court Industrial Boulevard,
St. Louis, Missouri 63122
Phone: 800. 325-9504 or 636. 225-9400
Fax: 800. 551-5145 or 636. 225-2049
www.Greenstreak.com

شركة الغانم للمواد الخصوصية ذ.م.م.
ALGHANIM SPECIALITIES CO. W.L.L



Tel.: +965 1820044 - Fax: +965 24582548
www.spec-kw.com - sales@spec-kw.com

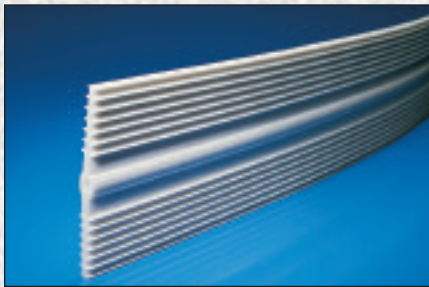
Flexible solutions. Concrete performance.

WATERSTOP BASIC USE

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

SUGGESTED WATERSTOP DESIGN CHECKLIST

- ◆ Determine structure type
- ◆ Verify chemical containment requirements (if any)
- ◆ Verify hydrostatic head pressure requirements
- ◆ Determine joint type and joint movement requirements
- ◆ Verify joinery details of dissimilar or non-symmetrical waterstop profiles (consider using one profile throughout to simplify intersections)
- ◆ Specify ribbed profile for best water sealing performance
- ◆ Specify type and size (by product number, if possible)
- ◆ Specify factory fabrications of intersections and heat welded field butt joints
- ◆ Specify method for securing waterstop in position (hog rings, grommets, etc.)



PVC WATERSTOP

- ◆ The industry standard
- ◆ Broadest design selection
- ◆ Formulated and compounded by Greenstreak
- ◆ Manufactured by Greenstreak from only prime resins and all virgin raw materials
- ◆ Great inherent elasticity
- ◆ Resistant to many waterborne chemicals
- ◆ Heat weldable
- ◆ Will not discolor concrete or produce electrolytic action
- ◆ Suitable for above or below grade applications

GREENSTREAK PVC Waterstop is available in two grades:

–Specification Grade (-40°F/-40°C)

This is the most utilized grade for standard construction projects. PVC Specification Grade, the industry standard, is maintained in stock.

Greenstreak PVC Waterstop Physical Properties		
PROPERTY	TEST Method	Typical VALUE
Tensile strength	ASTM D-638	2000 PSI Min.
Ultimate Elongation	ASTM D-638	300% Min.
Specific gravity	ASTM D-792	1.39
Stiffness in flexure	ASTM D-747	600 PSI Min.
Hardness Shore A15	ASTM D-2240	80±3
Low temperature brittleness @-35°F	ASTM D-746	Pass
Water absorption	ASTM D-570	.15% Max.
Tensile strength After Accelerated extraction	CRD-C-572	1850 PSI Min.
Elongation After Accelerated extraction	CRD-C-572	300% Min.
Alkali Resistance • weight change • hardness change	CRD-C-572	.20% Max. 2 Pts. Max
Tear resistance	*D624	395 lb./in.

Independent laboratory tests are available for the following applicable standards:

- ◆ Corps of Engineers CRD-C572-74
- ◆ Bureau of Reclamation C902

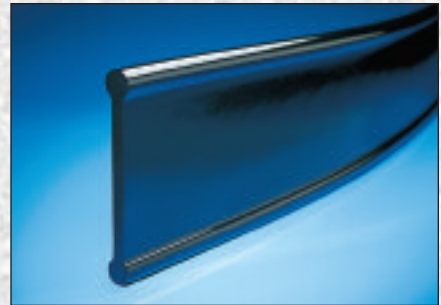
British Standards Test Results		
Property	Test Method	Typical Value
Ultimate Tensile Strength	BS2782 Method 320A	> 15.0 N/mm ²
Ultimate Elongation	BS2782 Method 320A	> 325%
Elastic Modulus	BS2782 Method 320A	> 8.0 N/mm ²
Density	BS2782 Method 620A	1.38 +/- 5%
Hardness (Shore A)	BS2782 Method 365B	79 +/- 3
Water Absorption	BS2782 Method 430A	> 0.1%

–Arctic Grade (-58°F/-50°C)

PVC Waterstop is specially formulated to retain its physical properties and performance in excessively cold environments.

Requirements available on order to meet:

- ◆ Ontario Hydro Standard M-264-81
- ◆ Canadian General Standards Board 41-GP-35M Type II



SBR AND NEOPRENE RUBBER WATERSTOPS

Greenstreak offers SBR and Neoprene waterstops for applications requiring the physical properties of rubber.

Greenstreak Rubber Waterstop Physical Properties			
Property	ASTM Test Method	Styrene Butadiene (SBR)	High Tensile Neoprene*
Tensile Strength (PSI min)	D 412	2,500	2,500
Tensile Strength @ 300% Modulus (PSI min)	D 412	1,150	1,150
Ultimate Elongation, (% min)	D412	450	450
Durometer, Shore A (+/- 5)	D2240	65	65
Water Absorption, 7 Days at 70°C % Weight Change (% max)	CRD-C575	5	15
Compression Set, 22 hr. @ 70°C % of Original Deflection (max)	D395 (Method B)	30	30
Accelerated Aging, 96 hrs. @ 70°C % of Tensile Strength before aging (min)	D572	80	80
% of Elongation before aging (min)		80	80
Ozone Resistance, 7 Days at 50PPHM @ 38°C, 20% Elong.	D1149	No Cracks	No Cracks

*Provides maximum resistance to ozone, sewage, oil and solvents

TYPES OF CONCRETE JOINTS

Contraction (Control) Joint

Contraction joints are designed planes of weakness to control the location of cracks due to shrinkage of concrete.

Expansion (Isolation) Joint

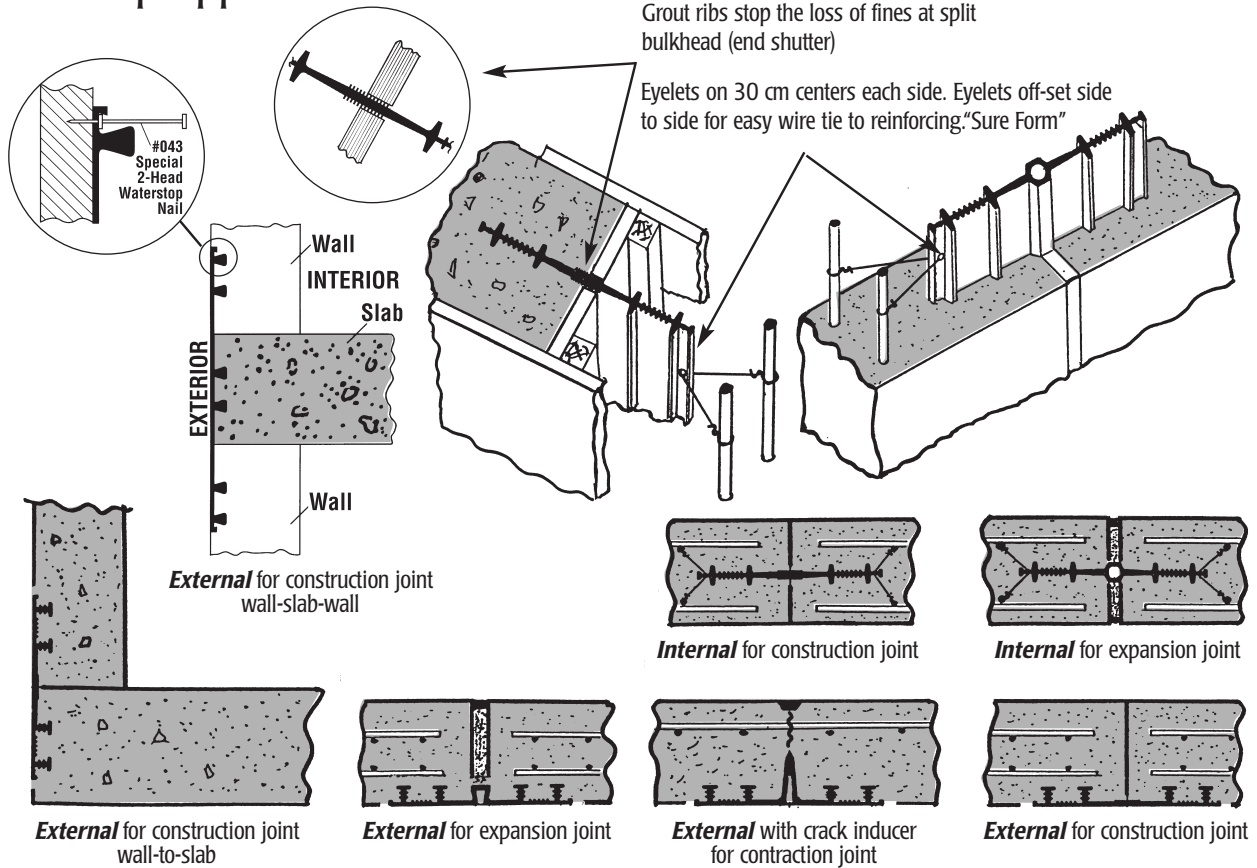
Expansion joints separate or isolate abutting concrete structures (walls, slabs, footings columns) protecting them from compressive

stresses that may develop due to thermal expansion, settlement, creep, live load deflections, drying shrinkage or crush. Differential movement at these joints can be both lateral and transverse.

Construction Joint

Construction joints are determined by interruptions in the placement of concrete.

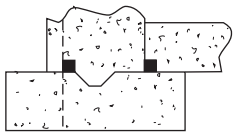
Waterstop Applications



SWELLSTOP™ WATERSTOP

A flexible butyl rubber and swellable clay waterproofing compound that swells upon contact with water to form a long lasting compression seal in non-moving concrete joints.

Swellstop



Swellstop requires a 2" minimum clear coverage from the face of the concrete.



"SURE-FORM" PVC Waterstops

Internal Style: Brass reinforced eyelets for easy wire tie to reinforcing bars.

FOR EXPANSION JOINTS		
STYLE 951	STD. WT. 31.44 Kg/20 LM ROLL	HEAD PRESS. 224 KPa
STYLE 952	STD. WT. 39.45 Kg/20 LM ROLL	HEAD PRESS. 373 KPa
STYLE 953	STD. WT. 42.16 Kg/16 LM ROLL	HEAD PRESS. 448 KPa
STYLE 954	STD. WT. 63.85 Kg/14 LM ROLL	HEAD PRESS. 597 KPa

FOR CONSTRUCTION/CONTRACTION JOINTS		
STYLE 955	STD. WT. 30.12 Kg/20 LM ROLL	HEAD PRESS. 224 KPa
STYLE 956	STD. WT. 39.20 Kg/20 LM ROLL	HEAD PRESS. 373 KPa
STYLE 957	STD. WT. 41.56 Kg/16 LM ROLL	HEAD PRESS. 448 KPa
STYLE 958	STD. WT. 61.49 Kg/14 LM ROLL	HEAD PRESS. 597 KPa

External Style: Easy nail-in-place with special two-headed nail – or – lay on grade.

FOR EXPANSION JOINTS		
STYLE 923	STD. WT. 30.22 Kg/20 LM ROLL	HEAD PRESS. 224 KPa
STYLE 924	STD. WT. 43.18 Kg/20 LM ROLL	HEAD PRESS. 373 KPa
STYLE 925	STD. WT. 43.78 Kg/16 LM ROLL	HEAD PRESS. 448 KPa
STYLE 926	STD. WT. 26.91 Kg/8 LM ROLL	HEAD PRESS. 448 KPa

FOR CONSTRUCTION/CONTRACTION JOINTS		
STYLE 927	STD. WT. 26.48 Kg/20 LM ROLL	HEAD PRESS. 224 KPa
STYLE 928	STD. WT. 39.42 Kg/20 LM ROLL	HEAD PRESS. 373 KPa
STYLE 929	STD. WT. 39.87 Kg/16 LM ROLL	HEAD PRESS. 448 KPa
STYLE 930	STD. WT. 48.62 Kg/16 LM ROLL	HEAD PRESS. 522 KPa
<p><i>Not to scale</i></p>		

Note: All dimensions in (mm) and dimensions are nominal and subject to manufacturing tolerances.

Additional PVC Waterstops

PVC WATERSTOPS		
STYLE 931	STD. WT. 8.11 Kg/3 LM	
STYLE 932	STD. WT. 63.49 Kg/16 LM ROLL	HEAD PRESS. 448 KPa
STYLE 933	STD. WT. 51.19 Kg/12 LM ROLL	HEAD PRESS. 448 KPa
STYLE 934	STD. WT. 47.16 Kg/20 LM ROLL	HEAD PRESS. 373 KPa
STYLE 936	STD. WT. 45.77 Kg/18 LM ROLL	HEAD PRESS. 373 KPa
STYLE 937	STD. WT. 45.92 Kg/18 LM ROLL	HEAD PRESS. 299 KPa
STYLE 938	STD. WT. 49.72 Kg/18 LM ROLL	HEAD PRESS. 299 KPa
STYLE 838	STD. WT. 52.48 Kg/32 LM ROLL	HEAD PRESS. 448 KPa
STYLE 696	STD. WT. 39.44 Kg/10 LM ROLL	HEAD PRESS. 523 KPa

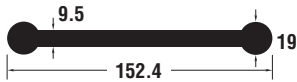
PVC WATERSTOPS		
STYLE 703	STD. WT. 34.88 Kg/32 LM ROLL	HEAD PRESS. 299 KPa
STYLE 712	STD. WT. 91.26 Kg/14 LM ROLL	HEAD PRESS. 672 KPa
STYLE 713	STD. WT. 56.55 Kg/10 LM ROLL	HEAD PRESS. 672 KPa
STYLE 718	STD. WT. 43.76 Kg/14 LM ROLL	HEAD PRESS. 597 KPa
STYLE 732	STD. WT. 42.86 Kg/18 LM ROLL	HEAD PRESS. 373 KPa
STYLE 735	STD. WT. 58.34 Kg/16 LM ROLL	HEAD PRESS. 597 KPa
STYLE 700	STD. WT. 33.75 Kg/6 LM ROLL	HEAD PRESS. 448 KPa
STYLE 777	STD. WT. 73.67 Kg/18 LM ROLL	SlabSpan
<p style="text-align: center;">Not to scale</p>		
STYLE 609	STD. WT. 9.60 Kg/3 LM	Retrofit System
<p>Available as a system:</p> <ul style="list-style-type: none"> #609W6 Waterstop #609B1 S.S. Batten Bar 2 per 3 meter length of waterstop #609S1 S.S. Anchor Bolt 42 pcs. per 3 meter length of waterstop Epoxy Gel 		

Note: GREENSTREAK manufactures over 100 waterstop profiles in addition to those illustrated in this catalog. If you do not see a profile for your application, contact us. All dimensions in (mm) and dimensions are nominal and subject to manufacturing tolerances.

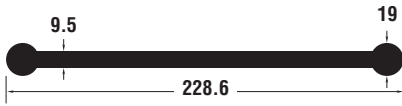
RUBBER SHAPES

Neoprene Rubber

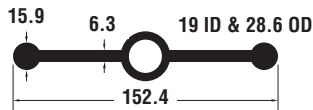
918 STD. WT. 1.51 lbs/ft 2.25 Kg/m



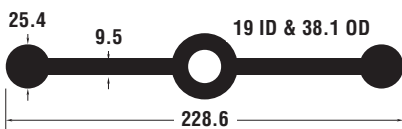
919 STD. WT. 2.20 lbs/ft 3.27 Kg/m



920 STD. WT. 1.22 lbs/ft 1.82 Kg/m

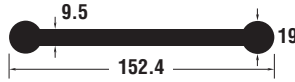


921 STD. WT. 2.90 lbs/ft 4.32 Kg/m

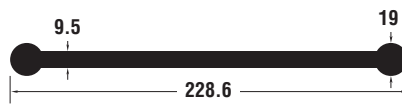


Styrene Butadiene Rubber (SBR)

902 STD. WT. 1.30 lbs/ft 1.93 Kg/m



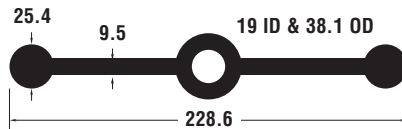
903 STD. WT. 1.90 lbs/ft 2.83 Kg/m



904 STD. WT. 1.05 lbs/ft 1.55 Kg/m

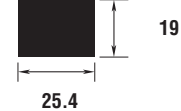


906 STD. WT. 2.50 lbs/ft 3.70 Kg/m



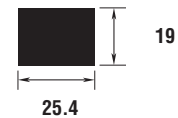
Swellstop

594 STD. WT. 0.41 lbs/ft 0.61 Kg/m



Lockstop

595 STD. WT. 0.48 lbs/ft 0.71 Kg/m

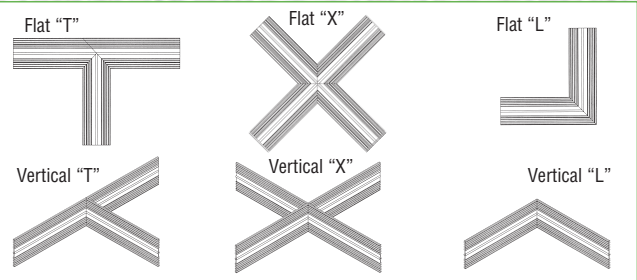


Factory Fabricated Waterstop Intersections

PVC FABRICATIONS

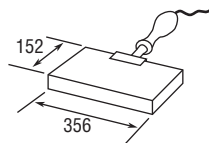


PVC waterstop splices, directional changes and intersections are critical components of a quality installation. Specifications requiring factory made fabrications are strongly recommended. Greenstreak can provide homogenous directional changes and intersections, leaving only the less difficult straight splices to be welded in the field.

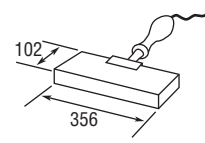


Field Splicing Irons

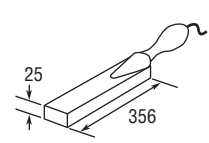
- ◆ Easy to use for straight butt joint splicing
- ◆ Accommodates small and large size waterstops
- ◆ Teflon Pad prevents sticking
- ◆ Lightweight, easy to use
- ◆ Thermostatically controlled
- ◆ 110 VAC. (220 VAC. optional)
- ◆ Peel and stick covers (replaceable)



#297
152 mm heating bar



#213
102 mm heating bar



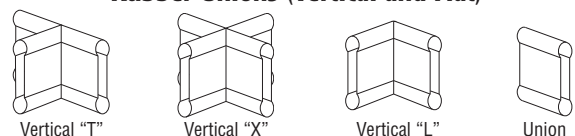
#214
25 mm heating bar

RUBBER FITTINGS



Splices, directional changes and intersections are achieved with premolded unions, fittings and a rubber adhesive kit.

Rubber Unions (Vertical and Flat)



Note: Adhesive available for bonding rubber intersections (unions).

Note: All dimensions in (mm) and dimensions are nominal and subject to manufacturing tolerances.

Sheet Drains

Basic Use: GREENSTREAK® Drainage Systems are lightweight, one sided planar drains. Geocomposite Sheet Drain enhances waterproofing systems by reducing hydrostatic head pressure on subgrade or retaining wall structures. Geocomposite Deck Drain provides horizontal planar drainage for storm water control under pavers.

Advantages

- ◆ Reduces hydrostatic pressure and loads
- ◆ Reduces deadload on horizontal decks by replacing aggregate
- ◆ Eliminates drainage aggregate stockpiles on tight job sites
- ◆ Minimizes freeze-thaw damage
- ◆ Lightweight and easy to install
- ◆ More economical than aggregate
- ◆ Enhances waterproofing systems
- ◆ Protection board for membrane waterproofing
- ◆ Easy to ship, transport and store

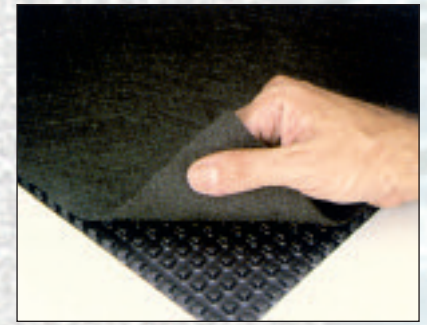
Deck Drain



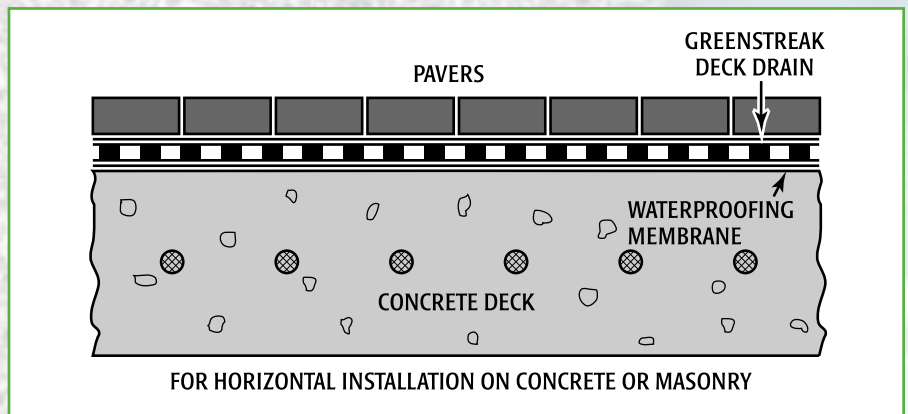
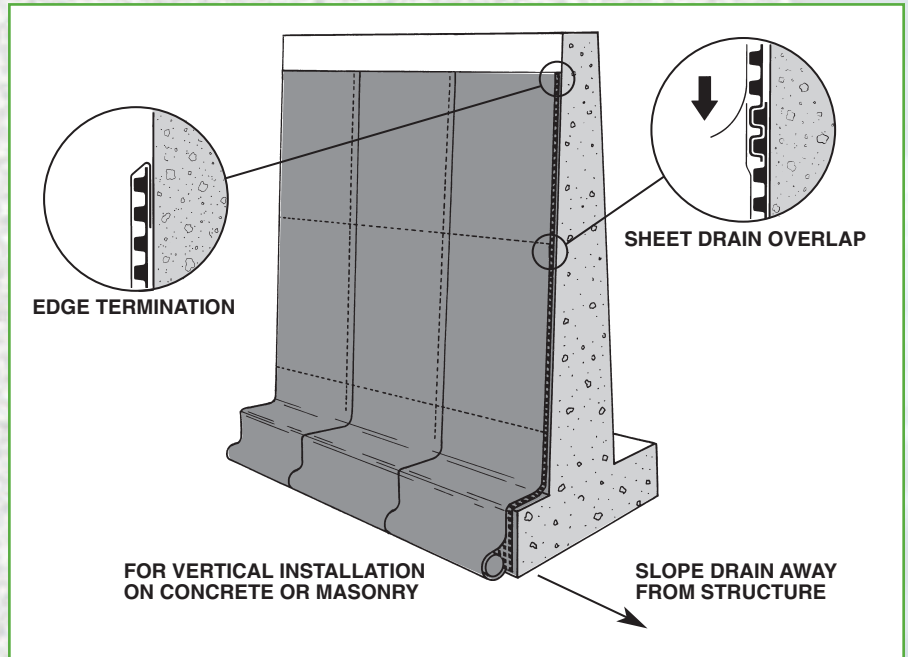
DECK DRAIN, .43 in. (10.92mm) thick with 1 in. (25.4mm), center-to-center peg spacing, is designed for horizontal applications with exceptional flow and high compressive strength requirements. DECK DRAIN is a sturdy product that withstands rough handling and abrasion due to thermal expansion and contraction of deck materials. DECK DRAIN may also be used for vertical applications where soil conditions dictate a more open filter fabric.



SHEET DRAIN, .42 in. (10.67mm) thick with 1 in. (25.4 mm), center-to-center peg spacing is designed for vertical applications with high flow and moderate compressive strength requirements.



SHEET DRAIN HS, .25 in. (6.35mm) thick with 1/2 in. (12.7mm), center-to-center peg spacing designed for vertical applications with moderate flow and exceptional compressive strength requirements.



Form Release 7000

Form Release 7000 is specially formulated to prevent concrete from bonding to aluminum, steel, plywood and plastic forms and form liners. Form Release 7000 should be used with all reusable Greenstreak Form Liners.

Advantages

- ◆ Will not stain gray or white concrete
- ◆ Will not impair bonding ability of paints, epoxies or other coatings

- ◆ Rust inhibitors help prevent stains in concrete and deterioration of forms
- ◆ Minimizes form clean-up
- ◆ Lengthens life of wooden forms

Coverage

- ◆ 300-400% higher than most premium releases
- ◆ Steel, aluminum, plastic, high density plywood...3000-4000 ft²/ gal.

- ◆ Plywood, concrete...1000-1500 ft²/ gal.
- ◆ Rough sawn, dimensional, striated plywood...800-1000 ft²/ gal.

Technical

- ◆ Consists of fatty wood derivatives in a light amber clear hydrocarbon carrier
- ◆ Contains no lubricating oil, diesel oil, conventional form oil or kerosene
- ◆ Red label not required

Architectural Concrete FORM LINERS



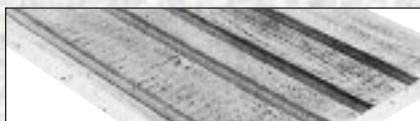
Form Follows Function

Greenstreak® Architectural Concrete Form Liners make it easy to pour interesting detail into a structure...without pouring in a lot of money.

Greenstreak Form liners are available in several grades and are ideal for texturing tilt-up, cast-in-place and precast concrete.

Greenstreak Form Liners are attached to the forming system or casting bed prior to concrete placement. After normal placement and curing time, the form work and liner are stripped, leaving an architectural finish in the concrete.

Just a few Greenstreak patterns are shown in this catalog. Call Greenstreak for additional pattern details or if you would like us to create a custom pattern or design.



351



302



360



337



373



GREENSTREAK®

3400 Tree Court Industrial Blvd., St. Louis, Missouri 63122 U.S.A.

Phone: 800. 325-9504 or 636. 225-9400 • Fax: 800. 551-5145 or 636. 225-9854

www.Greenstreak.com email: info@greenstreak.com

LIMITED WARRANTY: GREENSTREAK® warrants to the Buyer that this product 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 GREENSTREAK®'s recommendations; and,

Second, the Buyer has selected the proper product for the specific application required. GREENSTREAK® disclaims any responsibility for the selection of a particular waterstop product. Product selection is the sole responsibility and decision of the Buyer. The suitability of any material for a specific application requiring fluid resistance is best determined by specific testing for the application. GREENSTREAK® urges the Buyer to conduct its own site application testing.

Any information supplied by GREENSTREAK® with respect to its products is believed to be correct. GREENSTREAK® makes no representations or warranties, express or implied, as to the accuracy or completeness of such information or the use of such information for a particular purpose. GREENSTREAK® has not performed any tests. Any test data has been prepared by independent commercial laboratories.

Because GREENSTREAK® has no control over either the application or the selection of its products, GREENSTREAK®'s Limited Warranty is as follows:

The exclusive remedies of the Buyer and the limit of the liability of GREENSTREAK® from any and all losses or damages resulting from the use of this product (including claims based on contract, negligence, strict liability, or otherwise) shall be either the full refund of the purchase price to Buyer of this product or the replacement of the quantity of product purchased by the Buyer - at the election of GREENSTREAK®. In no event shall GREENSTREAK® be liable for any incidental or consequential damages. The Buyer and all users of this product are deemed to have accepted the terms of this Limited Warranty which may not be varied in any way by any verbal or written agreement.



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