

November 22, 2013
Updated March 31, 2014

New York City Office of Environmental Remediation
City Voluntary Cleanup Program
c/o Shaminder Chawla
100 Gold Street, 2nd Floor
New York, NY 10038

Re: 14CVCP193K
556 Columbia Street – Basis School
Brooklyn, NY
Remedial Action Work Plan (RAWP) Stipulation List

Dear Ms Bub:

PVE Sheffler, LLC (the consultant) hereby submits a Remedial Action Work Plan (RAWP) Stipulation List for the 556 Columbia Street (the Site) to the New York City Office of Environmental Remediation (OER) on behalf of Highmark Schools. This letter serves as an addendum to the RAWP to stipulate additional content, requirements, and procedures that will be followed during the Site remediation. The contents of this list are added to the RAWP and will supersede the content in the RAWP where there is a conflict in purpose or intent. The additional requirements/procedures include the following Stipulation List below:

1. The criterion attached in **Appendix 1** will be utilized if additional petroleum containing tanks or vessels are identified during the remedial action or subsequent redevelopment excavation activities. All petroleum spills will be reported to the NYSDEC hotline as required by applicable laws and regulations. This contingency plan is designed for heating oil tanks and other small or moderately sized storage vessels. If larger tanks, such as gasoline storage tanks are identified, OER will be notified before this criterion is utilized.
2. A pre-construction meeting is required prior to the start of remedial excavation work at the Site. A pre-construction meeting will be held at the Site and will be attended by OER, the developer or developer representative, the consultant, excavation/general contractor, and if applicable, the soil broker.
3. A pre-approval letter from all disposal facilities will be provided to OER prior to any soil/fill material removal from the Site. Documentation specified in the RAWP - Appendix D - Section 1.6 "Materials Disposal Off-Site" will be provided to OER. If a different disposal facility for the soil/fill material is selected, OER will be notified immediately.
4. A CD containing the final RAWP including this approved Stipulation List will be placed in the library that constitutes the primary public repository for project documents.
5. Signage for the project will include a sturdy placard mounted in a publically accessible right of way to building and other permits signage will consist of the NYC VCP Information Sheet (attached **Appendix 2**) announcing the remedial action. The Information sheet will be laminated and permanently affixed to the placard.
6. This NYC VCP project involving the removal and transportation of hazardous waste may be subject to the New York state Department of Environmental Conservation's Special Assessment Tax (ECL 27-0923) and Hazardous Waste Regulatory Fees (ECL 72-00402). See DEC's website for more information:
<http://www.dec.ny.gov/chemical/9099.html>.

7. Collection and analysis of eight post-excavation samples from the bottom of the excavation will be collected to evaluate the performance of the remedy with respect to attainment of Track 4 Site Specific SCOs. Figure 6 indicating End point post-excavation sampling locations is attached in **Appendix 3**. Samples will be analyzed for contaminants of concern (SVOCs and metals (barium, lead, mercury, and copper).
8. Truck route is included in (**Appendix 4**).
9. A vapor barrier will be installed beneath all grade level portion of the building not used for parking. Vapor barrier plans are included in **Appendix 5**
10. **Appendix 6** includes Vapor Barrier Pre-Certification letter from Vapor Barrier manufacturer stating that the proposed vapor barrier system mitigates against the contaminants of concern at the site.
11. A rotary wind turbine for the passive sub-slab depressurization system will be installed at the roof. **Appendix 7** provides details on the header and chase for the sub-slab depressurization system.
12. The Track 4 Soil Cleanup Objective for this site for copper will be 750 ppm.
13. OER requires parties seeking City Brownfield Incentive Grants to carry insurance. For a cleanup grant, both the excavator and the trucking firm(s) that handle removal of soil must carry or be covered under a commercial general liability (CGL) policy that provides \$1 million per claim in coverage. OER recommends that excavators and truckers also carry contractors pollution liability (CPL) coverage, also providing \$1 million per claim in coverage. The CGL policy, and the CPL policy if obtained, must name the City of New York, the NYC Economic Development Corporation, and Brownfield Redevelopment Solutions as additional insured. For an investigation grant, an environmental consultant must be a qualified vendor in the BIG program and carry \$1 million of professional liability (PL) coverage. A fact sheet regarding insurance is attached as **Appendix 8**.
14. Daily report will be provided during active excavation work. If no work is performed for extended time period, daily report frequency will be reduced to weekly basis. Daily report template is attached in **Appendix 9**.

Very Truly Yours,

PVE SHEFFLER, LLC



Christopher B. Brown, CPG
Principal/Sr. Hydrogeologist

cc: S. Chawla, OER

Appendix 1

Generic Procedures for Management of Underground Storage Tanks identified under the NYC VCP

Prior to Tank removal, the following procedures should be followed:

- Remove all fluid to its lowest draw-off point.
- Drain and flush piping into the tank.
- Vacuum out the “tank bottom” consisting of water product and sludge.
- Dig down to the top of the tank and expose the upper half.
- Remove the fill tube and disconnect the fill, gauge, product, vent lines and pumps. Cap and plug open ends of lines.
- Temporarily plug all tank openings, complete the excavation, remove the tank and place it in a secure location.
- Render the tank safe and check the tank atmosphere to ensure that petroleum vapors have been satisfactorily purged from the tank.
- Clean tank or remove to storage yard for cleaning.
- If the tank is to be moved, it must be transported by licensed waste transporter. Plug and cap all holes prior to transport leaving a 1/8 inch vent hole located at the top of the tank during transport.
- After cleaning, the tank must be made acceptable for disposal at a scrap yard, cleaning the tanks interior with a high pressure rinse and cutting the tank in several pieces.

During the tank and pipe line removal, the following field observations should be made and recorded:

- A description and photographic documentation of the tank and pipe line condition (pitting, holes, staining, leak points, evidence of repairs, etc.).
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with a calibrated photoionization detector (PID).

Impacted Soil Excavation Methods

The excavation of the impacted soil will be performed following the removal of the existing tanks. Soil excavation will be performed in accordance with the procedures described under Section 5.5 of Draft DER-10 as follows:

- A description and photographic documentation of the excavation.
- Examination of the excavation floor and sidewalls for physical evidence of contamination (odor, staining, sheen, etc.).
- Periodic field screening (through bucket return) of the floor and sidewalls of the excavation, with calibrated photoionization detector (PID).

Final excavation depth, length, and width will be determined in the field, and will depend on the horizontal and vertical extent of contaminated soils as indentified through physical examination (PID response, odor, staining, etc.). Collection of verification samples will be performed to evaluate the success of the removal action as specified in this document.

The following procedure will be used for the excavation of impacted soil (as necessary and appropriate):

- Wear appropriate health and safety equipment as outlined in the Health and Safety Plan.

- Prior to excavation, ensure that the area is clear of utility lines or other obstructions. Lay plastic sheeting on the ground next to the area to be excavated.
- Using a rubber-tired backhoe or track mounted excavator, remove overburden soils and stockpile, or dispose of, separate from the impacted soil.
- If additional UST's are discovered, the NYSDEC will be notified and the best course of action to remove the structure should be determined in the field. This may involve the continued trenching around the perimeter to minimize its disturbance.
- If physically contaminated soil is present (e.g., staining, odors, sheen, PID response, etc.) an attempt will be made to remove it, to the extent not limited by the site boundaries or the bedrock surface. If possible, physically impacted soil will be removed using the backhoe or excavator, segregated from clean soils and overburden, and staged on separated dedicated plastic sheeting or live loaded into trucks from the disposal facility. Removal of the impacted soils will continue until visibly clean material is encountered and monitoring instruments indicate that no contaminants are present.
- Excavated soils which are temporarily stockpiled on-site will be covered with tarp material while disposal options are determined. Tarp will be checked on a daily basis and replaced, repaired or adjusted as needed to provide full coverage. The sheeting will be shaped and secured in such a manner as to drain runoff and direct it toward the interior of the property.

Once the site representative and regulatory personnel are satisfied with the removal effort, verification of confirmatory samples will be collected from the excavation in accordance with DER-10.

Appendix 2
Signage



NYC Voluntary Cleanup Program

This property is enrolled in the New York City Voluntary Cleanup Program for environmental remediation. This is a voluntary program administered by the NYC Office of Environmental Remediation.

For more information, log on to:

www.nyc.gov/oer



If you have questions or would like more information, please contact:

Shaminder Chawla at (212) 788-8841
or email us at brownfields@cityhall.nyc.gov
556 Columbia Street – Basis School
Site #: 14CVCP193K

Appendix 3
Endpoint Sampling Map

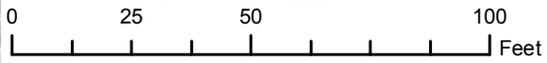


Legend

- Geoprobe Soil Boring
- ⋯ Excavation Area
- ▭ Parcel Outline
- Ramp & Loading Dock

X End-point Sample Location

PARCEL OUTLINE: NYC DIGITAL TAX MAP, ACCESSED 8-5-2013
 AERIAL PHOTO: NYC DIGITAL TAX MAP, ACCESSED 8-5-2013



SITE EXCAVATION DIAGRAM
 556 COLUMBIA STREET
 (BLOCK 601, LOT 17)
 BROOKLYN, NEW YORK

FIGURE 5

	DATE:	10/25/2013
	SCALE:	1" = 40'
	PROJECT NUMBER:	560896

ALL LOCATIONS APPROXIMATE

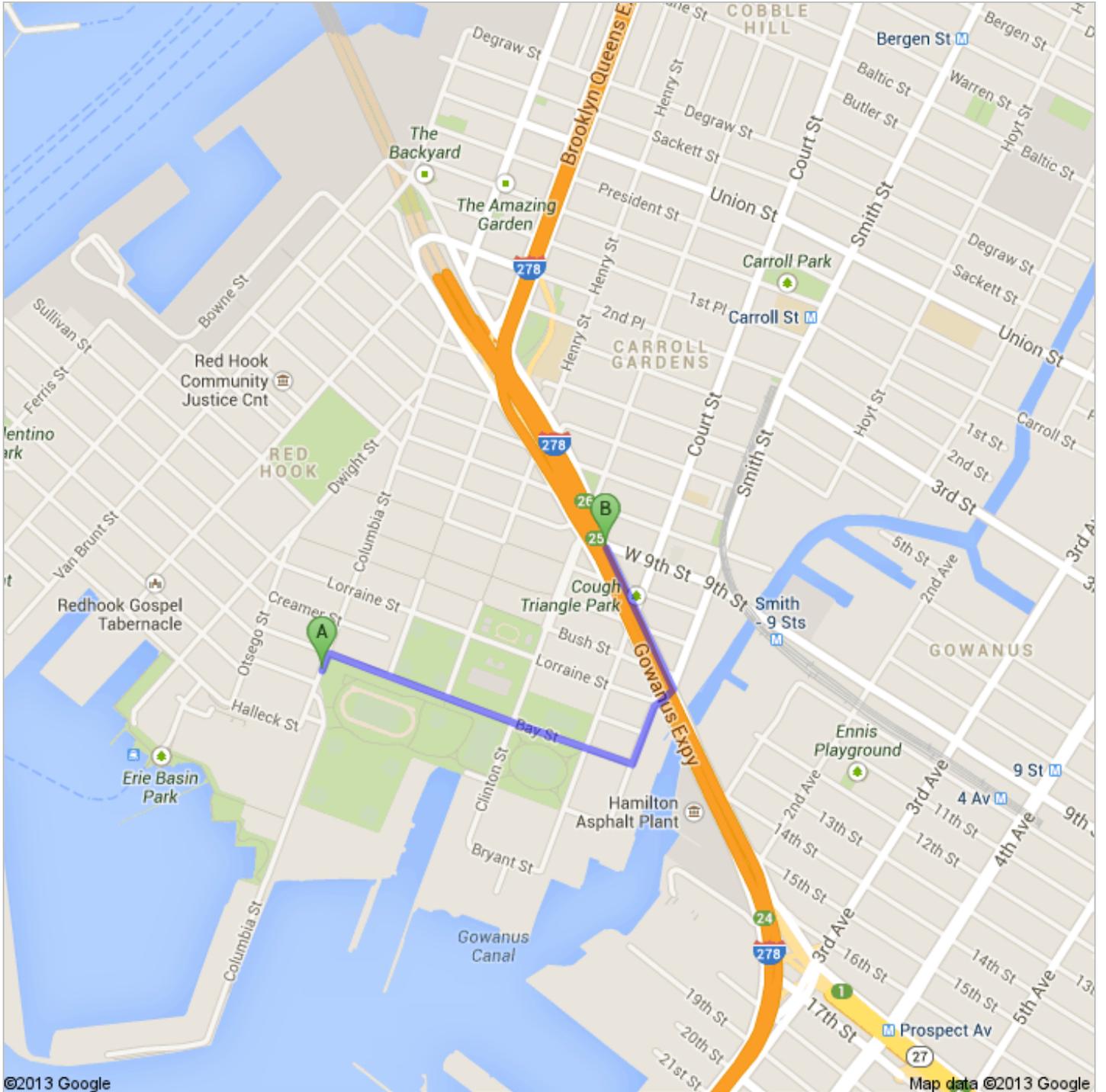


One Civic Center Plaza
 Suite 501
 Poughkeepsie, New York 12601
 Phone: (845) 454-2544
 Fax: (845) 454-2655

Appendix 4
Truck Route



Directions to Hamilton Ave
0.8 mi – about 4 mins



 556 Columbia St, Brooklyn, NY 11231

1. Head **north** on **Columbia St** toward **Bay St**

go 141 ft
total 141 ft

 2. Take the 1st right onto **Bay St**
About 2 mins

go 0.5 mi
total 0.5 mi

 3. Turn left onto **Smith St**

go 0.1 mi
total 0.6 mi

 4. Turn left onto **Hamilton Ave**
About 1 min

go 0.2 mi
total 0.8 mi

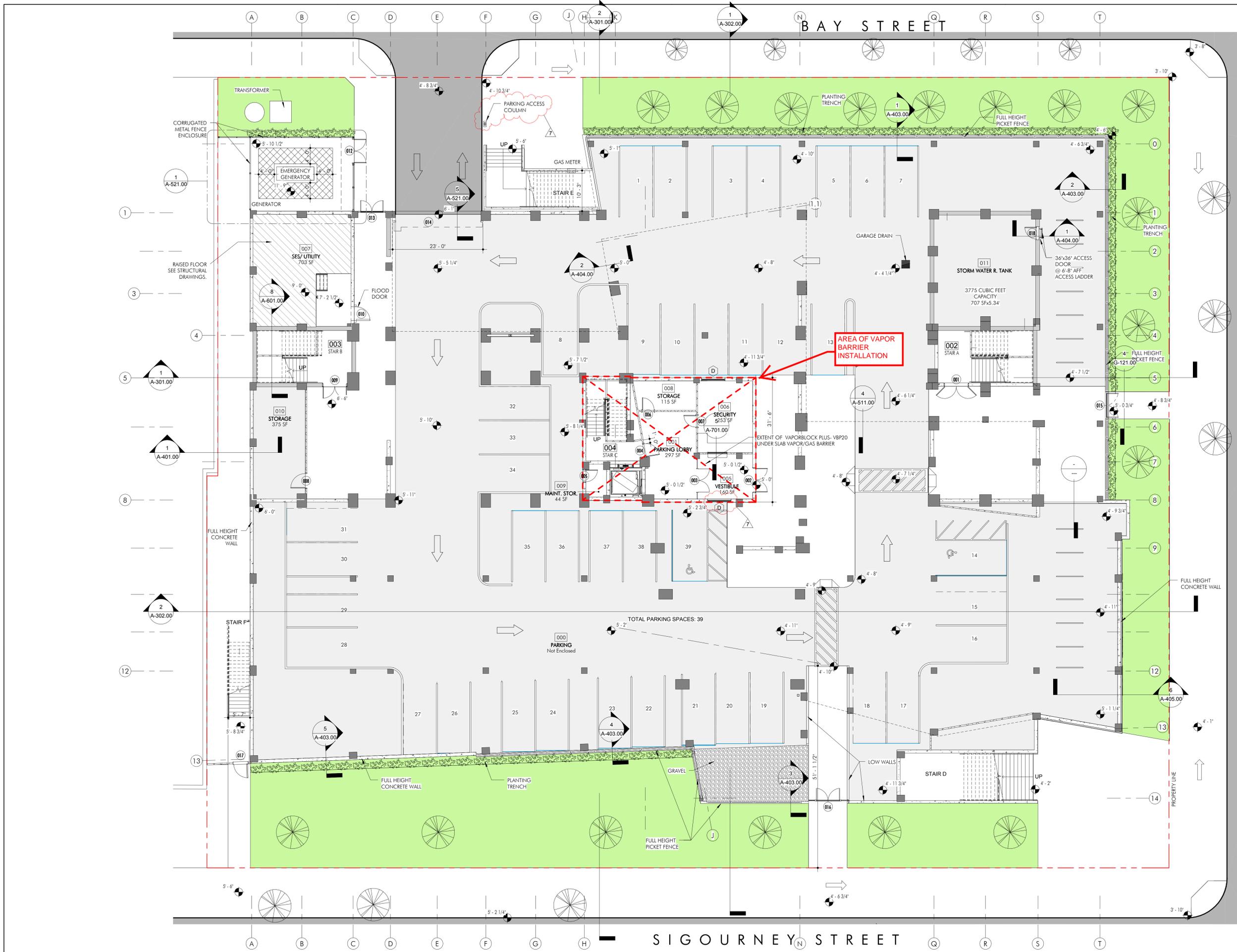
 **Hamilton Ave**

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2013 Google

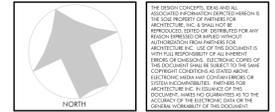
Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

Appendix 5
Vapor Barrier Plans



DOB SCAN

ISS/REV	DATE	ISSUED TO	DESCRIPTION
7	01/17/2014	CLIENT AND CONTRACTOR	ADD ALTERNATE-II
6	12/27/2013	CLIENT AND CONTRACTOR	ADD ALTERNATE-I
5	12/13/2013	CLIENT AND CONTRACTOR	ISSUED FOR BIDDING
4	11/18/2013	CLIENT AND CONTRACTOR	ISSUED FOR BIDDING
3	11/01/2013	DEPARTMENT OF BUILDING	ISSUED FOR PERMIT
2	10/18/2013	OWNER	OWNER REVIEW
1	10/16/2013	DOB	ZONING AND EGRESS REVIEW



**NEW SCHOOL FOR: BASIS
 INDEPENDENT SCHOOLS**

556 COLUMBIA STREET
 BROOKLYN, NY 11231

**FLOOR PLAN PARKING
 LEVEL**

SEAL & SIGNATURE	DATE: 10/28/2013
DRAWN BY: BT	PROJECT NO.: 13-607
CHECKED BY: RS	DRAWING NO.: A-100.00
CAD FILE NO.: J:\Proj\2013\13-607 BASIS	SCALE: 3/32" = 1'-0"

VAPORBLOCK® PLUS™ VBP20

Under-Slab Vapor / Gas Barrier



Product Description

VaporBlock® Plus™ 20 is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock® Plus™ 20 is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock® Plus™ 20 is more than 100 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon and other harmful VOCs.

VaporBlock® Plus™ 20 is one of the most effective underslab gas barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in a 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock® Plus™ 20 is produced within the strict guidelines of our ISO 9001:2008 Certified Management System.

Product Use

VaporBlock® Plus™ 20 resists gas and moisture migration into the building envelop when properly installed to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock® Plus™ 20 works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

Size & Packaging

VaporBlock® Plus™ 20 is available in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.



Under-Slab Vapor/Gas Retarder

Product

Part

VaporBlock Plus 20 VBP 20

APPLICATIONS

- | | |
|-----------------|--------------------------------|
| Radon Barrier | Under-Slab Vapor Retarder |
| Methane Barrier | Foundation Wall Vapor Retarder |
| VOC Barrier | |

VaporBlock® Plus™
UNDERSLAB VAPOR RETARDER / GAS BARRIER

VAPORBLOCK® PLUS™ VBP20



Under-Slab Vapor / Gas Barrier

PROPERTIES	TEST METHOD	VAPORBLOCK PLUS 20	
		IMPERIAL	METRIC
APPEARANCE		White/Gold	
THICKNESS, NOMINAL		20 mil	0.51 mm
WEIGHT		102 lbs/MSF	498 g/m ²
CLASSIFICATION	ASTM E 1745	CLASS A, B & C	
TENSILE STRENGTH LBF/IN (N/CM) AVERAGE MD & TD (NEW MATERIAL)	ASTM E 154 Section 9 (D-882)	58 lbf	102 N
IMPACT RESISTANCE	ASTM D 1709	2600 g	
MAXIMUM USE TEMPERATURE		180° F	82° C
MINIMUM USE TEMPERATURE		-70° F	-57° C
PERMEANCE (NEW MATERIAL)	ASTM E 154 Section 7 ASTM E 96 Procedure B	0.0098 Perms grains/(ft ² ·hr·in·Hg)	0.0064 Perms g/(24hr·m ² ·mm Hg)
(AFTER CONDITIONING) PERMS (SAME MEASUREMENT AS ABOVE PERMEANCE)	ASTM E 154 Section 8, E96 Section 11, E96 Section 12, E96 Section 13, E96	0.0079 0.0079 0.0097 0.0113	0.0052 0.0052 0.0064 0.0074
WVTR	ASTM E 96 Procedure B	0.0040 grains/hr-ft ²	0.0028 gm/hr-m ²
RADON DIFFUSION COEFFICIENT	K124/02/95	< 1.1 x 10 ⁻¹³ m ² /s	
METHANE PERMEANCE	ASTM D 1434	< 1.7 x 10 ⁻¹⁰ m ² /d·atm 0.32 GTR (Gas Transmission Rate) ml/m ² ·D·ATM	

VaporBlock® Plus™ Placement

All instructions on architectural or structural drawings should be reviewed and followed.
Detailed installation instructions accompany each roll of VaporBlock® Plus™ and can also be located on our website.
ASTM E-1643 also provides general installation information for vapor retarders.



VaporBlock® Plus™ is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

Note: To the best of our knowledge, unless otherwise stated, these are typical property values and are intended as guides only, not as specification limits. Chemical resistance, odor transmission, longevity as well as other performance criteria is not implied or given and actual testing must be performed for applicability in specific applications and/or conditions. RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage. Limited Warranty available at www.RavenEFD.com



Scan QR Code to download current technical data sheets via the Raven website.



Engineered Films Division
P.O. Box 5107
Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333

Toll Free: 800-635-3456
Email: efdsales@ravenind.com
www.ravenefd.com
1/11 EFD 1125

VaporBoot Plus Installation Instructions

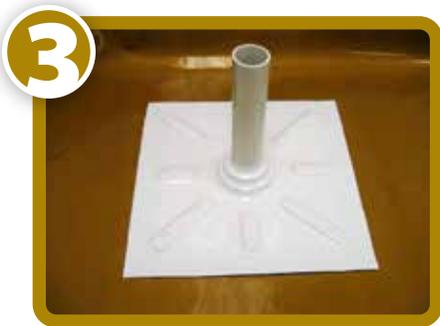
Part Number: VBPBT • Package Contents: 12 Each VaporBoot Plus Preformed Pipe Boots



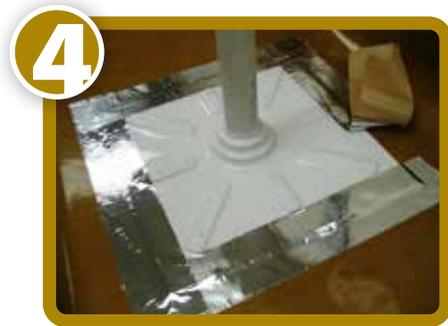
Check your pipe size and cut the hole size required in the prefabricated VaporBoot Plus Boot. The formed steps are for 1", 2", 3" and 4" PVC pipe or IPS size. This will allow the pipe to fit tightly in the hole and the VaporBoot Plus to stretch taunt around the pipe.



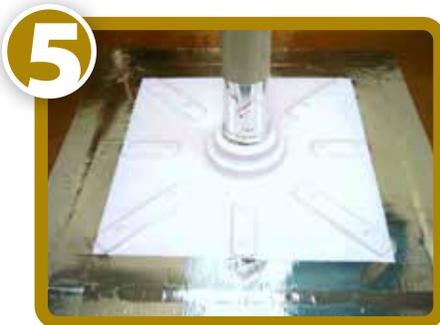
Turn the boot over and apply 2-sided Raven Butyl Seal tape (sold separately) to the perimeter of the bottom side. Once the entire perimeter is taped; remove all the release liner.



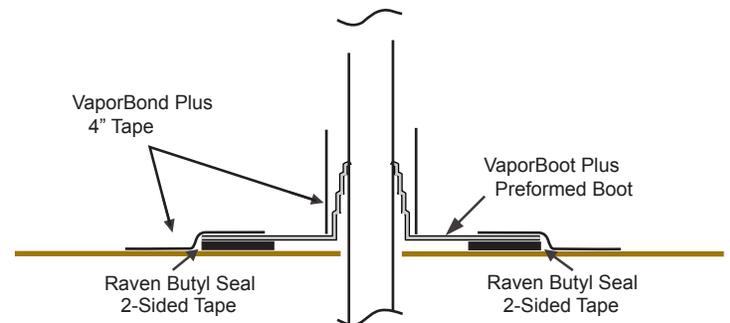
Force the VaporBoot Plus Boot over the penetration and apply pressure to the taped area around the entire perimeter to secure in place.



Peel off the paper release liner and tape the entire perimeter with VaporBond Plus seaming tape (sold separately).



To finish boot installation take VaporBond Plus tape and wrap tightly around to seal the boot to the penetration.





Vapor Bond

Part# TVB4

Product Specification

General Description

This tape combines a heavy duty, weather resistant polyethylene backing with a non-staining, clean removal, rubber adhesive. Typical applications include use as a seaming tape for large panels of polyethylene film for vapor retarder, cover, and liner applications.

Face Material:	7.5 mil Low Density Polyethylene
Adhesive:	1.5 mil Rubber Based Pressure Sensitive
Elongation:	450%
Tensile Strength:	17 lbs.
Application Temp:	50 degrees Fahrenheit to 120 degrees Fahrenheit
Operating Temp:	-40 degrees Fahrenheit to 180 degrees Fahrenheit
Tape Width:	4"
Tape Length:	210'
Case Qty:	12 rolls
Weight/Case:	45 lbs.

Telephone: (800) 635-3456

Fax: (605) 331-0333

Sioux Falls, SD

UNDER-SLAB GAS BARRIER / VAPOR RETARDER (Class A)

PART 1 – GENERAL

1.1 SUMMARY

- A. Products Supplied Under This Section
 - 1. Gas Barrier / Vapor Retarder, Seam Tape, and Pipe Boots

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil Or Granular Fill Under Concrete Slabs
 - 2. ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
 - 3. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
 - 4. ASTM E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
 - 5. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
- B. Radon Diffusion Coefficient K124/02/95
- C. American Concrete Institute (ACI)
 - 1. ACI 302.1R-6 & 7 Section 3.2.3 Vapor Retarder

1.3 SUBMITTALS

- A. Testing/Specifications
 - 1. Laboratory test results showing compliance with ASTM & ACI Standards.
 - 2. Manufacturer's samples, literature.
 - 3. Manufacturer's installation instructions for placement and seaming.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Provide a Gas Barrier / Vapor Retarder that meets the following:

- 1. ASTM E-1745 Standard for Plastic Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs
 - a) Must meet all Class "A" criteria.
- 2. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
 - a) Methane Permeance:
 $1.7 \times 10^{-10} \text{ m}^2/\text{d}\cdot\text{atm}$ or $0.32 \text{ GTR ml}/\text{m}^2\cdot\text{D}\cdot\text{ATM}$
- 3. K124/02/95 Radon Diffusion Coefficient: $< 1.1 \times 10^{-13} \text{ m}^2/\text{s}$
 - VaporBlock[®] Plus[™] 20 by Raven Industries – 800-635-3456

Other Manufacturer accepted meeting the above specification:

- CETCO Liquid Boot Company - 714-384-0111

2.2 ACCESSORIES

A. Seam Tape

1. VaporBond Plus Tape by Raven Industries, 800-635-3456 or other 4" wide gas barrier tape approved by the gas barrier / vapor retarder manufacturer.
2. VaporBoot Tape by Raven Industries, 800-635-3456 or other 2" wide stretchable butyl rubber tape.
3. Butyl Seal Tape by Raven Industries, 800-635-3456 or other 2" wide double-sided reinforced butyl rubber seaming tape.

B. Pipe Boots

1. Raven VaporBoot Plus pipe boots or other manufacturer's supplied pipe boot system.

PART 3 – EXECUTION

3.1 PREPARATION

A. Ensure that subsoil is approved by architect

1. Level and tamp or roll aggregate, sand or tamped earth base.

3.2 INSTALLATION

A. Install Gas Barrier / Vapor Retarder:

1. Installation shall be in accordance with manufacturer's instructions and ASTM E 1643. (Instructions on architectural or structural drawings should be reviewed and followed.)
 - A. Unroll VaporBlock Plus with the longest dimension parallel with the direction of the pour and pull open all folds to full width.
 - B. Lap VaporBlock Plus over footings and seal to the vertical foundation walls with 2-Sided Raven Butyl Seal tape.
 - C. Overlap joints a minimum of 12 inches and seal in-between overlap with 2-Sided Raven Butyl Seal tape then center the Raven VaporBond Plus Tape or other 4" wide gas barrier tape approved by gas barrier / vapor retarder manufacturer over the seal overlap.
 - D. Seal around sewer pipes, support columns or any other penetration with Raven VaporBoot Plus pipe boots or at minimum a combination of VaporBlock Plus and VaporBond Plus Tape or VaporBoot Tape, creating a monolithic membrane between the surface of the slab and moisture sources below as well as at the slab perimeter.
 - E. When VaporBlock Plus gas barrier is used as a part of an active control system for radon gas and other VOCs, a ventilation system will be required. When installed as a passive system it is still recommended to include a ventilation system that could be converted to an active system later.
 - F. Repair damaged areas by cutting patches of VaporBlock Plus, overlapping damaged area 12 inches and taping all four sides with VaporBond Plus Tape or other 4" wide gas barrier tape approved by vapor retarder / gas barrier manufacturer.

NOTE: See manufacturers full-length VaporBlock Plus Installation Guidelines located at www.ravenefd.com for complete details.

Appendix 6

Vapor Barrier Pre-Certification letter



4/3/14

Raven Industries
821 W Algonquin St
Sioux Falls, SD 57104

Conor Tarbell
Environmental Technician
PVE Sheffler
One Civic Center Plaza, Suite 501
Poughkeepsie, New York 12601

Dear Mr. Tarbell,

The "VaporBlock Plus" liner system is designed specifically to perform not only as a moisture barrier, but also as a barrier to other chemical substances such as those found in the reports provided to Raven Industries concerning soils located at 556 Columbia St Borough of Brooklyn, New York. Conventional liners have a significant rate of transmission of many of these chemicals, and therefore would not be recommended for this site.

For soils with the contaminants at the levels found in the provided reports, VaporBlock Plus would make an effective underslab vapor barrier.

Sincerely,

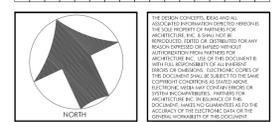
A handwritten signature in black ink that reads "Justin Norberg". The signature is written in a cursive, slightly slanted style.

Justin Norberg
Product Development Specialist
Raven Industries
821 W Algonquin St.
Sioux Falls, SD 57104
(605)335-0288
Justin.Norberg@Ravenind.com

Appendix 7
SSDS Details

DOB SCAN

ISS/REV	DATE	ISSUED TO	DESCRIPTION
5	01/17/2014	OWNER / CONTRACTOR	ADD ALTERNATE #2
4	12/26/2013	CLIENT AND CONTRACTOR	ADD ALTERNATE #1
3	11/27/2013	OWNER	CONSTRUCTION SET
2	11/15/2013	CONTRACTOR / OWNER	BID PROGRESS
1	11/02/2013	DOB	ISSUE FOR PERMIT

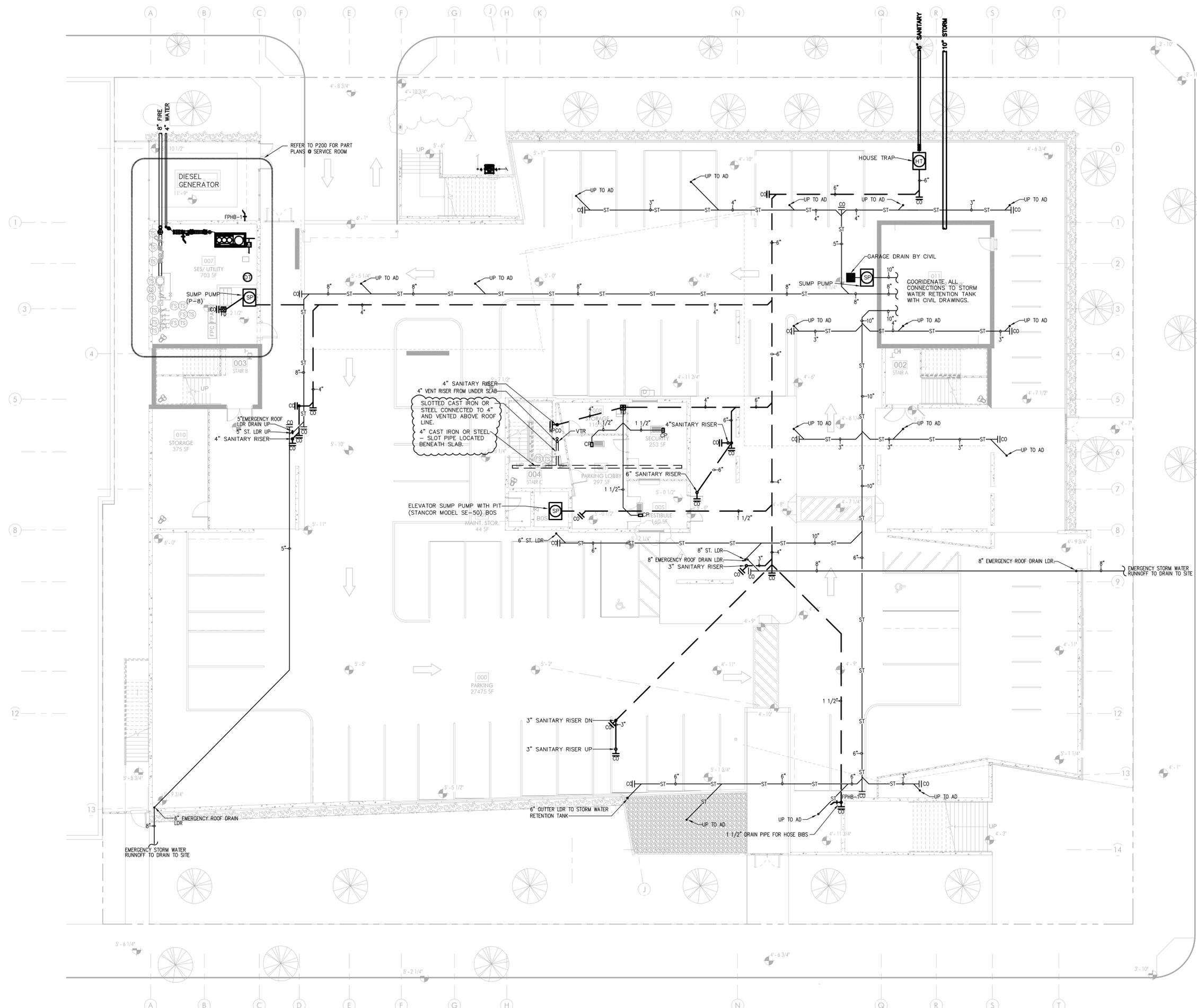


NEW SCHOOL FOR: BASIS INDEPENDENT SCHOOLS

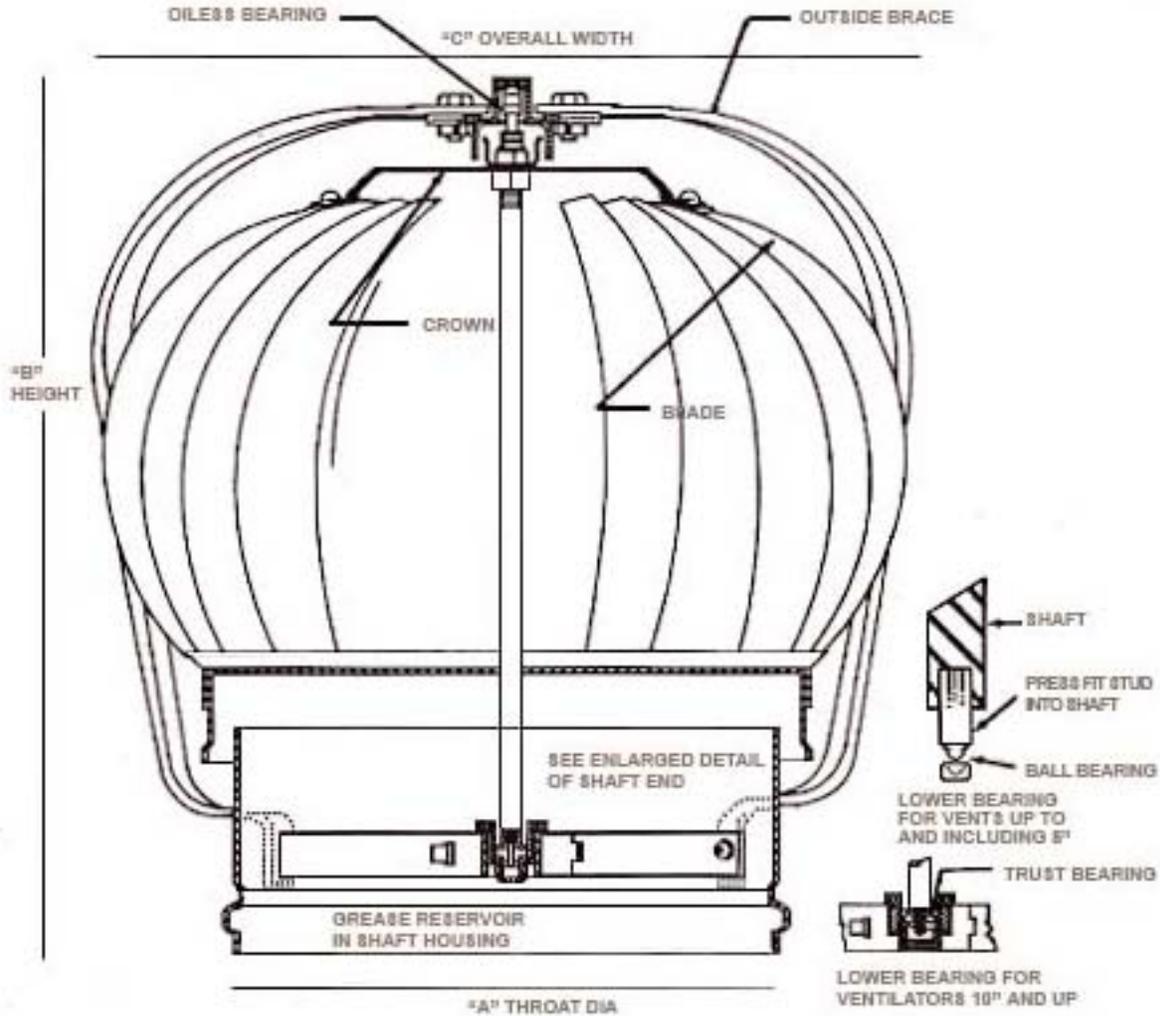
556 COLUMBIA STREET
 BROOKLYN, NY 11231

PLUMBING-STORM, SAN., VENT PARKING LEVEL FLOOR PLAN

SEAL & SIGNATURE	DATE: 11.02.2013
DRAWN BY: DK	PROJECT NO.: 2013.046
CHECKED BY: DCP	DRAWING NO.: P108.00
CAD FILE NO.: P1080001.DWG	DATE OF PLOT: 11/02/2013



TURBINE VENTILATORS



CONSTRUCTION SPECIFICATIONS					
"A" THROAT SIZE	GAUGE			NO. OF BRACES	BRACE MATERIAL
	CROWN GALV.	BLADE GALV.	THROAT GALV.		
4	24	28	26	3	ALUMINUM
6	24	28	26	3	ALUMINUM
8	24	28	26	3	ALUMINUM
10	24	28	26	3	ALUMINUM
12	24	28	24	3	ALUMINUM
14	22	26	24	3	ALUMINUM
16	22	26	24	3	STEEL
18	22	26	24	4	STEEL
20	20	26	24	4	STEEL
24	20	26	22	4	STEEL

DIMENSIONAL AND PERFORMANCE DATA				
"A" THROAT SIZE	"B" HEIGHT	"C" OVERALL WIDTH	EXHAUSTED CAPACITY*	APPROX. SHIPPING WEIGHT
4	12	10 1/4	125	5
6	14 1/2	12 3/4	147	7
8	15	14 1/4	255	8
10	16 1/4	16 1/4	425	11
12	17	19	631	13
14	19 3/4	22 3/4	700	21
16	21 3/4	25 1/2	950	31
18	24	29	1200	38
20	25 1/4	31 5/8	1700	46
24	28 1/4	35 3/4	2350	58

*4 MPH WIND CFM

FLEXIBLE COUPLINGS

Connect pipe sizes from 1-1/4" to 27"

Fernco Flexible Couplings have found wide acceptance among sewer and plumbing contractors and municipalities because of their quality and ease of installation. Fernco couplings are used for all types of in-house and sewer connections: drain waste, vent piping, house-to-main, repairs, cut-ins, conductor and roof drains and increasers-reducers.

Made of tough elastomeric polyvinyl chloride (PVC), they are strong, resilient and unaffected by soil conditions. They are also resistant to chemicals, ultraviolet rays, fungus growth, and normal sewer gases due to the inert nature and physical properties of the material. And they're leakproof, rootproof and seal against infiltration and exfiltration.

Fernco makes the most complete line in the industry, from sizes of 1-1/4" to 27" (32mm to 381mm) with couplings available to connect any two pipes. For larger size connections, see Large Diameter Couplings. The dimensional flexibility of Fernco couplings ensures leakproof seals on virtually any pipe material: plastic, cast iron, asbestos cement, clay, concrete, steel, fibre and ductile iron.

All couplings are clearly marked with part number, size, and pipe materials that the coupling will connect. Fernco makes fast delivery of stock items with no minimum order required. For special applications, our custom design service can supply couplings to individual customer requirements.



For sewer, drain, waste & vent piping.
Specially formulated PVC compound positively seals any sewer and drain connection.

Takes only minutes for the average connection. Place coupling over spigot and tighten band. Saves money by saving installation time.

All Fernco clamps, including the band screw and housing, are made from Series 300 Stainless Steel. They are corrosion-resistant and rustproof. Additional band slots have been added for greater flexibility and the bands are specially designed for greater sealing efficiency.



- Positive seal against infiltration and exfiltration
- Leakproof and rootproof for under ground applications.
- Connect pipes of same or different sizes and materials
- Stainless steel clamps are corrosion-resistant and rustproof
- Conforms to ASTM #D5926 and C1173 and applicable parts of ASTM C443, C425, C564 and D1869

US: 1-800-521-1283

• CANADA: 1-800-265-7518



Fernco, Inc.

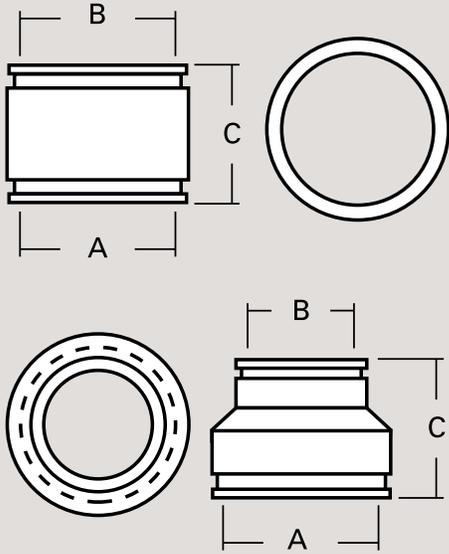
Coupling Sizing Charts

- 1001 Series - Clay to Clay
- 1002 Series - Clay to CI or Plastic
- 1003 Series - Clay to ABS or Ductile Iron
- 1004 Series - Concrete to Concrete
- 1006 Series - Concrete to CI or Plastic
- 1051 Series - ABS or Ductile Iron to CI or Plastic
- 1055 Series - ABS or Ductile Iron to ABS or Ductile Iron
- 1056 Series - CI, Plastic, Copper, Steel or Lead to
CI, Plastic, Copper, Steel or Lead
- 1059 Series - Plastic Socket to Plastic Pipe
- 1060 Series - Plastic Socket to Plastic Socket



1001 SERIES

FLEXIBLE COUPLINGS



Connect Any Two Pipes, Regardless Of Pipe Size Or Pipe Material.

- Fast, easy installation
- Effective, leakproof connection

Fernco Flexible Couplings Connect Pipe Sizes From 1-1/4" to 27"

Designed for drain, waste, vent and sewer applications. Test pressure should not exceed 4.3 psi (29.6 kPa)

FOR SIZES OVER 27"
SEE OUR LARGE DIAMETER COUPLINGS.



SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

SERIES 1001

Clay to Clay

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1001-44	5.25	133	5.25	133	4.00	101
1001-54	6.12	155	5.25	133	6.00	152
1001-55	6.12	155	6.12	155	5.00	127
1001-64	7.38	187	5.38	133	6.00	152
1001-65	7.38	187	6.38	155	6.00	152
1001-66	7.38	191	7.38	191	6.00	152
1001-86	9.65	245	7.38	187	6.00	152
1001-88	9.65	245	9.65	245	6.00	152
*1001-10-8	12.73	323	9.65	245	6.00	152
1001-1010	12.73	323	12.73	323	6.00	152
*1001-1210	14.38	365	12.73	323	6.00	152
1001-1212	14.38	365	14.38	365	6.00	152
*1001-1512	17.85	453	14.38	365	7.00	177
1001-1515	17.85	453	17.85	453	10.00	254
1001-1818	21.70	551	21.70	551	10.00	254
1001-2121	25.50	648	25.50	648	10.00	254
1001-2424	29.00	737	29.00	737	10.00	254
1001-2727	32.50	826	32.50	826	10.00	254

*Supplied with a reducer.

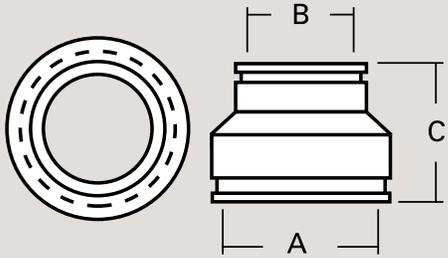
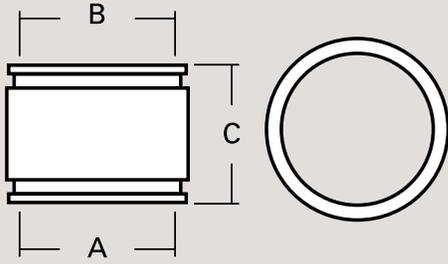
US: 1-800-521-1283

CANADA: 1-800-265-7518



**1002
SERIES**

FLEXIBLE COUPLINGS



Connect Any Two Pipes, Regardless Of Pipe Size Or Pipe Material.

- Fast, easy installation
- Effective, leakproof connection

Fernco Flexible Couplings Connect Pipe Sizes From 1-1/4" to 27"

Designed for drain, waste, vent and sewer applications. Test pressure should not exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

SERIES 1002						
Clay to Cast Iron or Plastic						
Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1002-43	5.25	133	3.38	85	4.00	101
1002-44	5.25	133	4.38	111	4.00	101
1002-46	5.25	133	6.38	162	6.00	152
1002-54	6.12	155	4.38	111	6.00	152
1002-55	6.12	155	5.38	136	5.00	127
1002-64	7.38	187	4.38	111	6.00	152
1002-65	7.38	187	5.38	136	6.00	152
1002-66	7.38	187	6.38	162	6.00	152
1002-86	9.65	245	6.38	162	6.00	152
1002-88	9.65	245	8.50	215	6.00	152
*1002-10-8	12.73	323	8.50	215	6.00	152
1002-1010	12.73	323	10.60	269	6.00	152
*1002-1210	14.38	365	10.60	269	6.00	152
1002-1212	14.38	365	12.60	320	6.00	152
*1002-1512	17.85	453	12.60	320	7.00	177
1002-1515	17.85	453	15.40	391	7.00	177
1002-1818	22.00	559	19.00	483	10.00	254
*1002-2121	25.50	648	22.30	566	10.00	254
*1002-2424	29.00	737	25.00	635	10.00	254
*1002-2727	32.50	826	28.20	716	10.00	254

*Supplied with a reducer.

US: 1-800-521-1283

CANADA: 1-800-265-7518

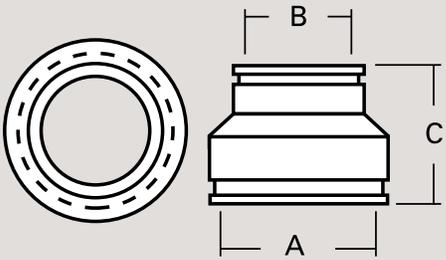
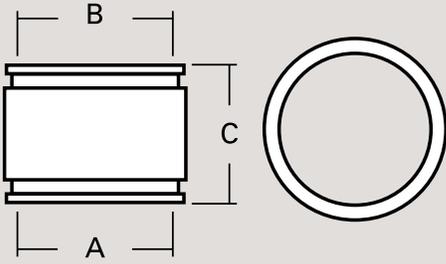


**1003
SERIES**

FLEXIBLE COUPLINGS

SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings



**Connect Any Two
Pipes, Regardless
Of Pipe Size Or
Pipe Material.**

- Fast, easy installation
- Effective, leakproof connection

**Fernco Flexible
Couplings Connect
Pipe Sizes From
1-1/4" to 27"**

Designed for drain, waste,
vent and sewer applications.
Test pressure should not
exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SERIES 1003

Clay to Asbestos Cement Fibre or Ductile Iron

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1003-44	4.87	124	4.70	119	4.00	101
*1003-54	6.12	155	4.75	120	5.00	127
1003-55	6.12	155	5.90	149	5.00	127
*1003-64	7.38	187	4.75	120	6.00	152
*1003-65	7.38	187	5.90	149	6.00	152
1003-66	7.38	187	7.00	177	6.00	152
*1003-85	9.65	245	5.90	149	6.00	152
*1003-86	9.65	245	7.00	177	6.00	152
1003-88	9.65	245	9.12	231	6.00	152
*1003-10-8	12.73	323	9.12	231	6.00	152
*1003-1010	12.73	323	11.12	282	6.00	152
*1003-1210	14.38	365	11.12	282	6.00	152
1003-1212	14.38	365	13.20	335	6.00	152
*1003-1512	17.85	453	13.20	335	10.00	254
1003-1516	18.25	464	17.80	452	10.00	254
*1003-1818	21.70	551	19.50	495	10.00	254

*Supplied with a reducer.

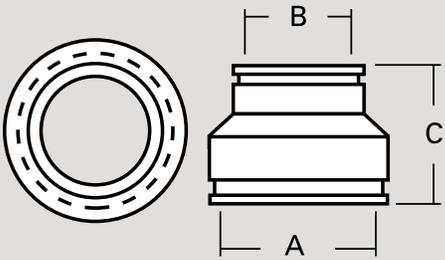
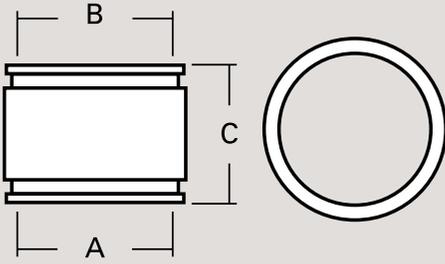
US: 1-800-521-1283

• CANADA: 1-800-265-7518



1004 SERIES

FLEXIBLE COUPLINGS



Connect Any Two Pipes, Regardless Of Pipe Size Or Pipe Material.

- Fast, easy installation
- Effective, leakproof connection

Fernco Flexible Couplings Connect Pipe Sizes From 1-1/4" to 27"

Designed for drain, waste, vent and sewer applications. Test pressure should not exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

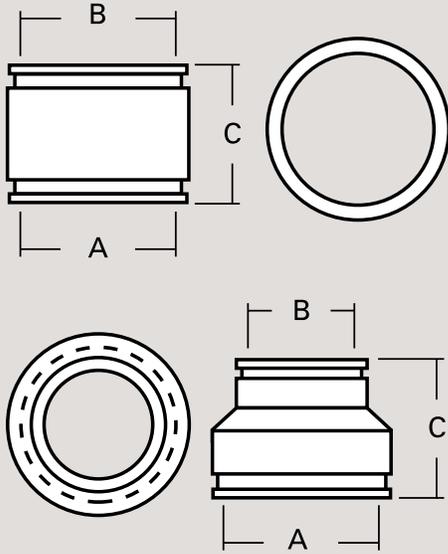
SERIES 1004						
Concrete to Concrete						
Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1004-44	5.62	142	5.62	142	4.00	101
*1004-64	7.80	198	5.62	142	6.00	152
1004-66	7.64	193	7.64	193	6.00	152
*1004-86	10.25	260	7.80	198	6.00	152
1004-88	10.25	260	10.25	260	6.00	152
1004-99	Use part number 1001-1010					
*1004-10-8	12.73	323	10.25	260	6.00	152
1004-1010	12.73	323	12.73	323	6.00	152
1004-1210	15.40	391	12.73	323	6.00	152
1004-1212	15.40	391	15.40	391	6.00	152
1004-1515	19.75	502	19.75	502	10.00	254
1004-1818	22.50	571	22.50	571	10.00	254
1004-2121	26.50	673	26.50	673	10.00	254
1004-2424	30.50	775	30.50	775	10.00	254
1004-2727	34.00	864	34.00	864	10.00	254

*Supplied with a reducer.



**1006
SERIES**

FLEXIBLE COUPLINGS



**Connect Any Two
Pipes, Regardless
Of Pipe Size Or
Pipe Material.**

- Fast, easy installation
- Effective, leakproof connection

**Fernco Flexible
Couplings Connect
Pipe Sizes From
1-1/4" to 27"**

Designed for drain, waste,
vent and sewer applications.
Test pressure should not
exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

SERIES 1006

Concrete to Cast Iron or Plastic

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1006-43	5.62	142	3.38	85	4.00	101
1006-44	5.62	142	4.38	111	4.00	101
1006-64	7.80	198	4.38	111	6.00	152
*1006-65	7.80	198	5.38	136	6.00	152
1006-66	7.80	198	6.38	162	6.00	152
*1006-86	10.25	260	6.38	162	6.00	152
1006-88	10.25	260	8.50	215	6.00	152
*1006-10-8	12.73	323	8.50	215	6.00	152
1006-1010	12.60	320	10.60	269	6.00	152
*1006-1210	16.00	391	10.60	269	6.00	152
1006-1212	16.40	416	12.50	318	6.00	152
1006-1515	19.75	502	15.50	388	10.00	254
*1006-1818	22.50	571	18.90	480	10.00	254
*1006-2121	26.50	673	22.30	566	10.00	254
*1006-2424	30.50	775	25.00	635	10.00	254
*1006-2727	34.00	864	28.20	716	10.00	254

*Supplied with a reducer.

US: 1-800-521-1283

CANADA: 1-800-265-7518

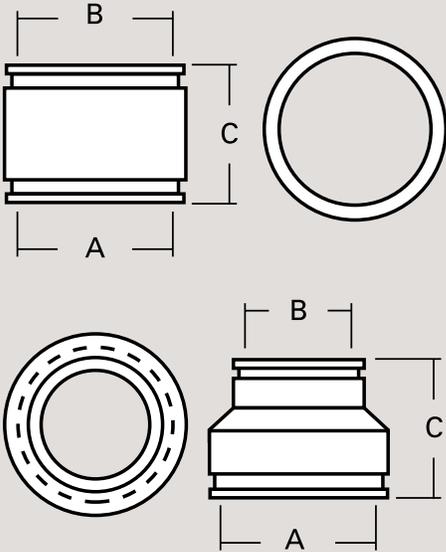


**1051
SERIES**

FLEXIBLE COUPLINGS

SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings



Connect Any Two Pipes, Regardless Of Pipe Size Or Pipe Material.

- Fast, easy installation
- Effective, leakproof connection

Fernco Flexible Couplings Connect Pipe Sizes From 1-1/4" to 27"

Designed for drain, waste, vent and sewer applications. Test pressure should not exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SERIES 1051

Asbestos Cement Fibre or Ductile Iron to Cast Iron or Plastic

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
*1051-43	4.75	120	3.38	85	4.00	101
1051-44	4.87	120	4.50	111	4.00	101
1051-54	5.90	149	4.38	111	4.00	101
1051-55	5.90	149	5.38	136	5.00	127
1051-64	7.00	177	4.38	111	6.00	152
1051-65	7.00	177	5.38	136	6.00	152
1051-66	7.00	177	6.38	162	6.00	152
*1051-86	9.12	231	6.38	162	6.00	152
1051-88	9.12	231	8.50	215	6.00	152
*1051-10-8	11.12	282	8.50	215	6.00	152
1051-1010	11.12	282	10.60	269	6.00	152
*1051-1210	13.20	335	10.60	269	6.00	152
1051-1212	13.20	335	12.60	320	6.00	152
1051-1615	17.85	453	15.40	391	7.00	177
1051-1818	19.50	495	18.90	480	10.00	1254

*Supplied with a reducer.

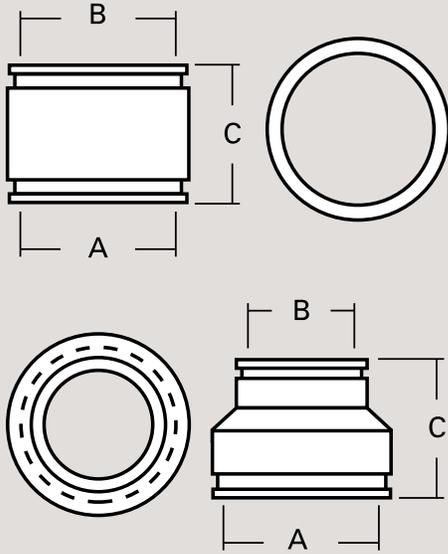
US: 1-800-521-1283

• CANADA: 1-800-265-7518



**1055
SERIES**

FLEXIBLE COUPLINGS



Connect Any Two Pipes, Regardless Of Pipe Size Or Pipe Material.

- Fast, easy installation
- Effective, leakproof connection

Fernco Flexible Couplings Connect Pipe Sizes From 1-1/4" to 27"

Designed for drain, waste, vent and sewer applications. Test pressure should not exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

SERIES 1055

Asbestos Cement Fibre or Ductile Iron to Asbestos Cement Fibre or Ductile Iron

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1055-44	4.75	120	4.75	120	4.00	101
*1055-54	5.90	149	4.75	120	5.00	127
1055-55	5.90	149	5.90	149	5.00	127
1055-64	7.00	177	4.75	120	6.00	152
1055-65	7.00	177	5.90	149	6.00	152
1055-66	7.10	180	7.10	180	6.00	152
*1055-86	9.12	231	7.00	177	6.00	152
1055-88	9.12	231	9.12	231	6.00	152
*1055-10-8	11.12	282	9.12	231	6.00	152
1055-1010	11.12	282	11.12	282	6.00	152
*1055-1210	13.20	335	11.12	282	6.00	152
1055-1212	13.20	335	13.20	335	6.00	152
*1055-1615	17.80	452	16.50	419	10.00	254
*1055-1818	19.50	495	19.50	495	10.00	254

*Supplied with a reducer.

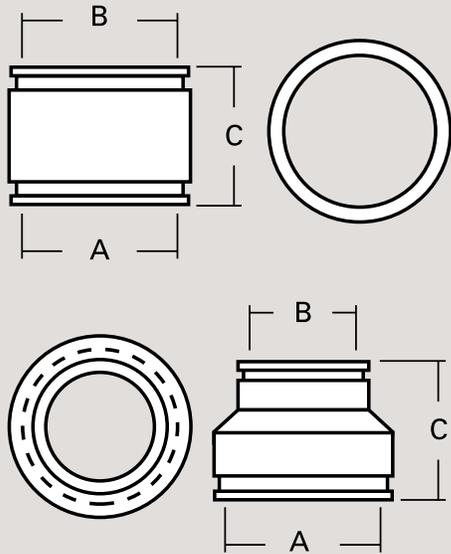
US: 1-800-521-1283

CANADA: 1-800-265-7518



**1059 & 1060
SERIES**

FLEXIBLE COUPLINGS



**Connect Any Two
Pipes, Regardless
Of Pipe Size Or
Pipe Material.**

- Fast, easy installation
- Effective, leakproof connection

**Fernco Flexible
Couplings Connect
Pipe Sizes From
1-1/4" to 27"**

Designed for drain, waste,
vent and sewer applications.
Test pressure should not
exceed 4.3 psi (29.6 kPa)

**FOR SIZES OVER 27"
SEE OUR LARGE
DIAMETER COUPLINGS.**



SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

SERIES 1059

Plastic Socket to Plastic Pipe

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1059-150	2.25	57	1.93	49	4.00	101
1059-22	2.75	70	2.43	62	4.00	101
1059-33	3.95	100	3.51	89	4.00	101
1059-44	4.99	127	4.51	115	4.00	101

SERIES 1060

Plastic Socket to Plastic Socket

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1060-150	2.25	57	2.25	57	4.00	101
1060-22	2.75	70	2.75	70	4.00	101
1060-33	3.95	100	3.95	100	4.00	101
1060-44	4.99	127	4.99	127	4.00	101

*Supplied with a reducer.

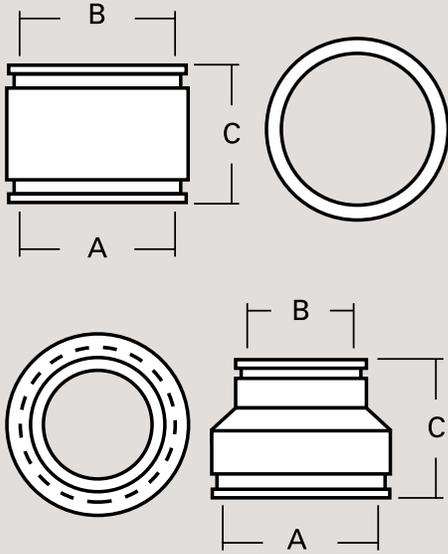
US: 1-800-521-1283

CANADA: 1-800-265-7518



**1056
SERIES**

FLEXIBLE COUPLINGS



Connect Any Two Pipes, Regardless Of Pipe Size Or Pipe Material.

- Fast, easy installation
- Effective, leakproof connection

Fernco Flexible Couplings Connect Pipe Sizes From 1-1/4" to 27"

Designed for drain, waste, vent and sewer applications. Test pressure should not exceed 4.3 psi (29.6 kPa)

FOR SIZES OVER 27"
SEE OUR LARGE DIAMETER COUPLINGS.



www.fernco.com

SIZING CHARTS

All Dimensions Given In Inches and Millimeters
300 Series Stainless Steel Clamps Provided With All Couplings

SERIES 1056

Cast Iron, Plastic, Copper, Steel or Lead to Cast Iron, Plastic, Copper, Steel or Lead

Part Number	A		B		C	
	in.	mm	in.	mm	in.	mm
1056-125	1.65	40	1.65	40	3.50	88
1056-150/125	1.90	48	1.65	40	3.50	88
1056-150	1.90	48	1.90	48	3.50	88
1056-215	2.40	60	1.90	48	3.50	88
1056-22	2.40	60	2.40	60	3.50	88
1056-315	3.38	85	1.90	48	4.00	101
1056-32	3.38	85	2.40	60	4.00	101
1056-33	3.50	85	3.50	85	4.00	101
1056-415	4.38	111	1.90	48	4.00	101
1056-42	4.38	111	2.40	60	4.00	101
1056-43	4.38	111	3.38	85	4.00	101
1056-44	4.50	112	4.50	112	4.00	101
*1056-53	5.62	142	3.38	85	4.00	101
1056-54	5.62	142	4.38	111	4.00	101
1056-55	5.62	142	5.62	142	4.00	101
*1056-63	6.38	162	3.38	85	6.00	152
1056-64	6.38	162	4.38	111	6.00	152
1056-65	6.50	165	5.50	140	6.00	152
1056-66	6.38	162	6.38	162	6.00	152
*1056-84	8.50	215	4.38	111	6.00	152
1056-86	8.50	215	6.38	162	6.00	152
1056-88	8.50	215	8.50	215	6.00	152
1056-10-8	10.60	269	8.50	215	6.00	152
1056-1010	10.60	269	10.60	269	6.00	152
1056-1210	12.60	320	10.60	269	6.00	152
1056-1212	12.83	326	12.83	326	6.00	152
1056-1512	16.00	391	12.60	320	6.00	152
1056-1515	15.40	391	15.40	391	10.00	254
*1056-1815	18.90	480	15.30	404	10.00	254
1056-1818	18.90	480	18.90	480	10.00	254
1056-2121	22.30	566	22.30	566	10.00	254
1056-2424	25.00	635	25.00	635	10.00	254
1056-2727	28.20	716	28.20	716	10.00	254

*Supplied with a reducer.

US: 1-800-521-1283

• CANADA: 1-800-265-7518



1059 & 1060 SERIES

FLEXIBLE COUPLINGS

For Plastic Socket Connections

Easy, reliable, outside connections for socket-to-socket or socket-to-pipe.

Flexible Couplings for plastic socket connections are a time-saving way to repair or alter plastic pipe joints without replacing perfectly good fittings. They fit neatly over plastic pipes and sockets, making socket-to-pipe and socket-to-socket connections incredibly easy and reliable. They can even be used with plastic traps. Sizes available up to 4".

No messy glues or solvents are necessary. And like all Fernco connectors these new couplings are made of elastomeric PVC to provide years of trouble-free service. Premium Series 300 stainless steel bands are included with each product.



SERIES 1059	
Socket to Pipe	
1059-150	1-1/2"
1059-22	2"
1059-33	3"
1059-44	4"

SERIES 1060	
Socket to Socket	
1060-150	1-1/2"
1060-22	2"
1060-33	3"
1060-44	4"

SEE THE SIZING CHART
FOR SPECIFIC
DIMENSIONS FOR
THE 1059 AND 1060
SERIES COUPLING.

APPLICATIONS: Couplings can be used at full 4" lengths or cut down to either 3" or 2" lengths for close quarter installations. Grooves accommodate stainless steel band when couplings are shortened.



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CANADA: 1-800-265-7518



**1070
SERIES**

FLEXIBLE COUPLINGS

For Corrugated Polyethylene

Flexible Couplings for corrugated polyethylene drainage tubing.

Connects drainage/irrigation systems tubing to PVC sewer piping quickly and easily.

Fernco's NEW flexible couplings for corrugated polyethylene drainage tubing are designed to connect modern drainage and irrigation systems to PVC pipes quickly...easily.

Lightweight, flexible, heavy-duty PVC connectors fit tight.

Available in four sizes: 3" x 3", 4" x 4", 6" x 6", and 8" x 8".



A.D.S. Corrugated Pipe & Hancor Corrugated

Ideal for use in:

- Storm and sub-soil drainage systems
- Farm irrigation systems
- Golf course drainage
- Residential areas
- Anywhere corrugated polyethylene drainage and irrigation systems are connected to S & D or DWV plastic pipe.

SERIES 1070

For Corrugated Pipe

1070-33	3" x 3"
1070-44	4" x 4"
1070-66	6" x 6"
1070-88	8" x 8"

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**L.D.C.X.
SERIES**

LARGE DIAMETER COUPLINGS

For Special or Non-Standard Sizes

Large Diameter Couplings are ideal for repair, alterations or rehabilitation of large diameter sewer pipe. These couplings are made from flexible PVC and offer easy installation and leak free connections. They are engineered for use with all common sewer piping materials: clay, concrete, cast and ductile iron, asbestos/cement, plastic or fiberglass.

Note: Never install this type of coupling until you read and understand the installation instructions and verify the dimensions ordered.



FEATURES:

- Accommodates an O.D. difference of up to one inch*
- 12.7 inches wide
- 3/8 inch thick with multiple sealing ribs
- 2 - Series 300 (18-8) all stainless steel, extra strength (.040 thick) T-bolt clamps with multiple take up points
- Up to 150 in./lbs. of torque for greater sealing pressure.

Order by specifying the outside diameter (O.D.) of both pipes in inches.

*Where O.D. differences range from 1-1/4" - 4", a Fernco Bushing system is available.

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WESTERN SERIES

Center Stop Couplings and Bushings

Western Series Center Stop Couplings and Bushings are made of elastomeric PVC and are interchangeable with other brands of center stop couplings. The couplings and bushings are sized for West Coast Clay.

- Center-stop design with bushing inserts
- Bushings available for most common 4", 6", 8" transitions of clay, CI or plastic and A/C to:
 - Sch. 40 PVC and ABS Plastic
 - SDR-35 Plastic
 - Bead, Bald and Plain end Cast Iron
 - Rough Barrel and Machined-end A/C
 - Ductile Iron
- 300 series stainless steel worm gear clamps (316 stainless available)
- Manufactured in the USA by Fernco



Western Series Center Stop Coupling

COUPLINGS

Part No.	Description	Size
1081-44	4" Clay x 4" Clay	5.38 x 5.38
1081-66	6" Clay x 6" Clay	8.00 x 8.00
1081-88	8" Clay x 8" Clay	10.06 x 10.06
1085-88	8" A/C x 8" A/C	9.20 x 9.20
1086-33	3" CI/PL x 3" CI/PL	3.50 x 3.50
1086-44	4" CI/PL x 4" CI/PL	4.50 x 4.50

BUSHINGS

481-4.90	4" Clay x RBAC or CI 150 DI	(B)	5.38 x 4.90
481-4.38	4" Clay x PECl / Bald CI	(J)	5.38 x 4.38
481-4.63	4" Clay x Bead CI/MEAC	(C)	5.38 x 4.63
481-4.50	4" Clay x ABS/Sch. 40		5.38 x 4.50
481-4.25	4" Clay x SDR35/PVC		5.38 x 4.25
681-6.63	6" Clay x ABS/Bead CI/MEAC	(C)	8.00 x 6.63
681-6.38	6" Clay x PECl/PVC	(J)	8.00 x 6.38
881-8.38	8" Clay x PVC/PECl	(J)	10.06 x 8.38
881-8.63	8" Clay x Bead CI/ABS/MEAC	(C)	10.06 x 8.63
881-9.00	8" Clay x RBAC/CIs 150 DI	(B)	10.06 x 9.00
885-8.38	8" A/C x PECl/PVC	(D)	10.06 x 8.38
885-8.63	8" Clay x Bead CI/ABS/MEAC	(AEK)	10.06 x 8.63



US: 1-800-521-1283

CANADA: 1-800-265-7518



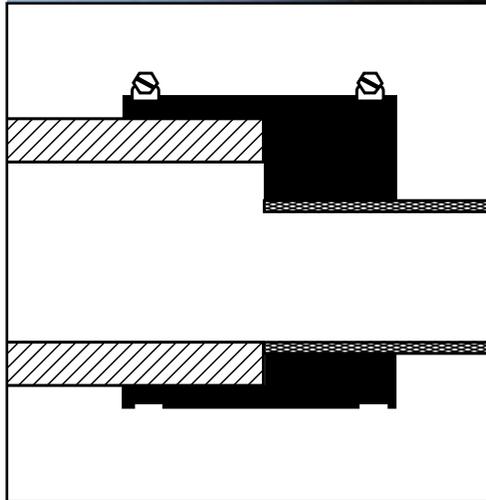
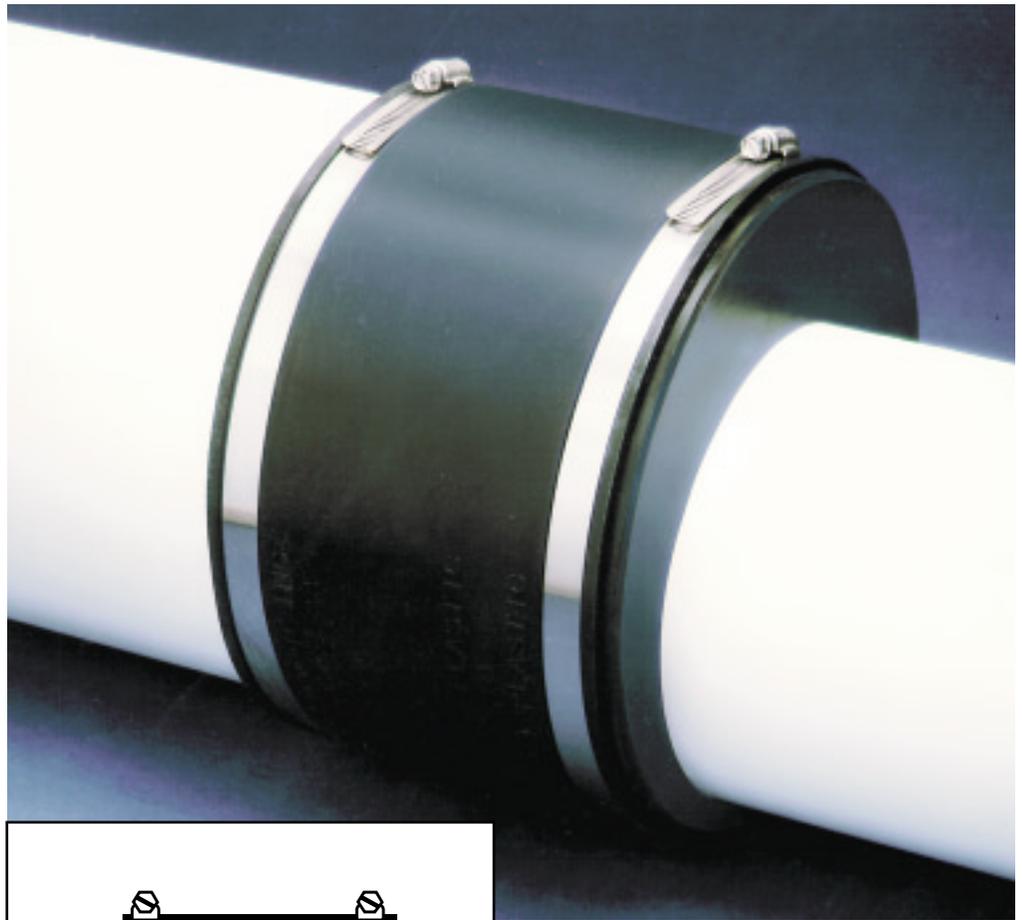
ECCENTRIC COUPLINGS

For Critical Grade Conditions

Available for all common sewer pipe materials

Fernco Eccentric Couplings help maintain an even, continuous flowline in critical grade conditions. They're easy to install and available to fit all common sewer pipe size combinations. Made of tough, flexible elastomeric PVC, Eccentric Couplings seal reliably against infiltration and exfiltration.

Eccentric bushings fit one end of Fernco Standard Flexible Couplings.



Available for all common sewer pipe materials.

- Clay to Clay
- Clay to CI/Plastic
- Clay to A-C/Ductile
- Concrete to Concrete
- Concrete to CI/Plastic
- A-C/Ductile to CI/Plastic
- A-C/Ductile to A-C/Ductile
- CI/Plastic to CI/Plastic

When ordering, please provide size and piping materials to be connected.

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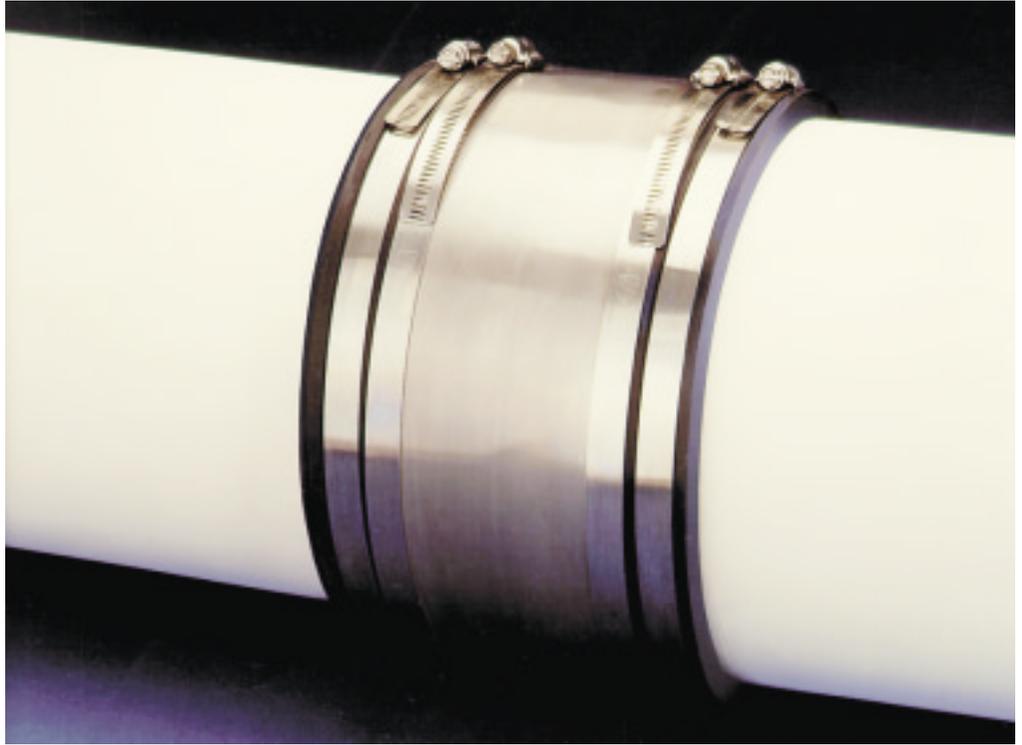
SHEAR RINGS

Add Extra Strength and Rigidity

Stainless Steel Shear Rings add extra strength and rigidity to just about any size couplings. They're easy to attach and help maintain proper alignment in even the most unstable ground conditions. Bushings are separately supplied for material transition and size reduction.

Stocked separately for convenient use with your regular inventory.

- All stainless steel bands, nuts, and housings (Series 300 Stainless Steel).
- Designed to fit Fernco's 1001 (Clay to Clay) 1004 (Concrete to Concrete) 1055 (AC to AC) 1056 (Cl/Plastic to Cl/Plastic) series couplings.
- Available for 1-1/2" to 15" couplings.



PART NUMBER	SHEAR RING LENGTH	BAND SIZE	SHIELD WIDTH	FERNCO COUPLING PART #
SR-9	9"	32	1.5"	1056-150
SR-11	11"	44	1.5"	1056-22
SR-15	15"	64	2"	1056-33
SR-19	19"	88	2"	1056-44, 1055-44
SR-22	22"	96	2"	1001-44, 1004-44, 1056-55
SR-25	25"	116	4"	1056-66
SR-27	27"	128	4"	1001-66, 1055-66
SR-28	28"	140	4"	1004-66
SR-33	33"	152	4"	1056-88
SR-35	35"	164	4"	1001-88, 1055-88
SR-37	37"	184	4"	1004-88
SR-39	39"	184	4"	1055-1010, 1056-1010
SR-46	46"	(2) 116	4"	1001-1010, 1004-1010, 1051-1212, 1055-1212, 1056-1212
SR-54	54"	(2) 128	4"	1001-1212, 1004-1212 1056-1515
SR-59	59"	(2) 152	4"	1001-1515
SR-63	63"	164 & 152	4"	1056-1818
SR-73	73"	(2) 184	4"	1056-2121

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STRONG BACK

Fernco Strong Back RC Series Repair Couplings offer a .012" stainless steel shielded coupling that has a molded in bushing for those areas that require extra rigidity.

- Molded in bushing
- .012" thick stainless steel shear ring
- 300 series stainless steel clamp housing, clamp screw, clamp band and shear ring
- Clamps are spot welded in place

RC Series Repair Couplings

For where there is a need for resistance to heavy earth loads, shear forces and improved alignment



1. Gasket

- Manufactured to Meet the Material Requirements of:
 - CSA B602 - mechanical couplings for drain, waste, vent pipe and sewer pipe
 - ASTM D 5926 - Standard Specification for Poly (Vinyl Chloride) (PVC) Gaskets for Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Systems
 - ASTM C 1173 - Standard Specification for Flexible Transition Couplings for Underground Piping Systems
- Hardness, Shore"A", Inst. ++565
- Tensile Strength, Min. psi1000
- Elongation at Rupture, Min. %250
- Tear Strength, Min.150 lb/in.
- Brittleness Temperature-40°F

2. Clamps

- Manufactured to the requirements of CSA B602
- Clamp Housing- 301 Stainless Steel
- Clamp Band - 301 Stainless Steel
- Clamp Screw- 305 Stainless Steel
- Free Torque Max, 4"1bs., Ultimate Torque Min. 65" lbs

3. Shear Ring

- .012" Thick, 300 Series Stainless Steel
- Width Manufactured to Order Depending on Coupling Width (1.50", 2.13", or 4")
- Length Manufactured to Order (Depending on Coupling Diameter)
- Clamps Spot Welded in Place

4. Coupling

- Manufactured to Conform to the Performance Requirements of:
 - ASTM C 1173 - standard specification for flexible transition couplings for underground piping systems
 - CSA B602 - mechanical couplings for drain, waste, and vent and sewer pipe

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STRONG BACK RC Series Repair Couplings

Part Numbers & Descriptions



***INSERT BUSHING INCLUDED WITH DESIGNATED PART NUMBERS**

CALL FERNCO FOR ADDITIONAL SIZES



1001 RC Series - For Clay to Clay	
1001-44RC	4" Clay to 4" Clay
1001-66RC	6" Clay to 6" Clay
1001-88RC	8" Clay to 8" Clay
1001-1010RC	10" Clay to 10" Clay
1001-1212RC	12" Clay to 12" Clay
1002 RC Series - For Clay to Cast Iron or Plastic	
1002-44RC	4" Clay to 4" Cast Iron or Plastic
*1002-55RC	5" Clay to 5" Cast Iron or Plastic
*1002-64RC	6" Clay to 4" Cast Iron or Plastic
1002-66RC	6" Clay to 6" Cast Iron or Plastic
1002-88RC	8" Clay to 8" Cast Iron or Plastic
*1002-1010RC	10" Clay to 10" Cast Iron or Plastic
*1002-1212RC	12" Clay to 12" Cast Iron or Plastic
1003 RC Series - For Clay to ABS or Ductile Iron	
1003-44RC	4" Clay to 4" ABS or Ductile Iron
1003-66RC	6" Clay to 6" ABS or Ductile Iron
1003-88RC	8" Clay to 8" ABS or Ductile Iron
*1003-1010RC	10" Clay to 10" ABS or Ductile Iron
*1003-1212RC	12" Clay to 12" ABS or Ductile Iron
1004 RC Series - For Concrete to Concrete	
1004-44RC	4" Concrete to 4" Concrete
1004-66RC	6" Concrete to 6" Concrete
1004-88RC	8" Concrete to 8" Concrete
1004-1010RC	10" Concrete to 10" Concrete
1004-1212RC	12" Concrete to 12" Concrete
1006 RC Series - For Concrete to Cast Iron or Plastic	
*1006-44RC	4" Concrete to 4" Cast Iron or Plastic
*1006-64RC	6" Concrete to 4" Cast Iron or Plastic
*1006-66RC	6" Concrete to 6" Cast Iron or Plastic
*1006-88RC	8" Concrete to 8" Cast Iron or Plastic
*1006-1212RC	12" Concrete to 12" Cast Iron or Plastic
1051 RC Series - For ABS or Ductile Iron to Cast Iron or Plastic	
1051-44RC	4" ABS or Ductile Iron to 4" Cast Iron or Plastic
1051-66RC	6" ABS or Ductile Iron to 6" Cast Iron or Plastic
1051-88RC	8" ABS or Ductile Iron to 8" Cast Iron or Plastic
*1051-108RC	10" ABS or Ductile Iron to 8" Cast Iron or Plastic
1051-1010RC	10" ABS or Ductile Iron to 10" Cast Iron or Plastic
*1051-1212RC	12" ABS or Ductile Iron to 12" Cast Iron or Plastic
1055 RC Series - For ABS or Ductile Iron to ABS or Ductile Iron	
1055-44RC	4" ABS or Ductile Iron to 4" ABS or Ductile Iron
1055-66RC	6" ABS or Ductile Iron to 6" ABS or Ductile Iron
1055-88RC	8" ABS or Ductile Iron to 8" ABS or Ductile Iron
1055-1010RC	1010" ABS or Ductile Iron to 1010" ABS or Ductile Iron
1055-1212RC	1212" ABS or Ductile Iron to 1212" ABS or Ductile Iron
1056 RC Series - For CI, PL, Copper, ST or Lead to CI, PL, Copper, ST or Lead	
1056-150RC	1-1/2" CI, PL, Copper, ST or Lead to 1-1/2" CI, PL, Copper, ST or Lead
1056-22RC	2" CI, PL, Copper, ST or Lead to 2" CI, PL, Copper, ST or Lead
1056-33RC	3" CI, PL, Copper, ST or Lead to 3" CI, PL, Copper, ST or Lead
*1056-43RC	4" CI, PL, Copper, ST or Lead to 3" CI, PL, Copper, ST or Lead
1056-44RC	4" CI, PL, Copper, ST or Lead to 4" CI, PL, Copper, ST or Lead
1056-55RC	5" CI, PL, Copper, ST or Lead to 5" CI, PL, Copper, ST or Lead
*1056-64RC	6" CI, PL, Copper, ST or Lead to 4" CI, PL, Copper, ST or Lead
1056-66RC	6" CI, PL, Copper, ST or Lead to 6" CI, PL, Copper, ST or Lead
*1056-86RC	8" CI, PL, Copper, ST or Lead to 6" CI, PL, Copper, ST or Lead
1056-88RC	8" CI, PL, Copper, ST or Lead to 8" CI, PL, Copper, ST or Lead
1056-1010RC	10" CI, PL, Copper, ST or Lead to 10" CI, PL, Copper, ST or Lead
1056-1212RC	12" CI, PL, Copper, ST or Lead to 12" CI, PL, Copper, ST or Lead

***INSERT BUSHING INCLUDED - CALL FERNCO FOR ADDITIONAL SIZES**

US: 1-800-521-1283

CANADA: 1-800-265-7518



NO HUB COUPLINGS

For Hubless Cast Iron Systems

No Hub Couplings And
Husky SD-2000 No Hub

- **AISI 304 STAINLESS STEEL SHIELD.**
- **AISI STAINLESS STEEL CLAMPS AND SCREW HOUSING:**
Full size 9/16" wide bands and one piece screw housings are mechanically interlocked for strength. The wide clamp band provides enhanced sealing force.
- **SPECIALLY BEADED GASKET:**
Unique beaded Neoprene gasket grips with superior holding and sealing power. Gasket conforms to ASTM C 564.
- **Husky SD-2000 COUPLINGS:**
meet ASTM C 1277 and meet test criteria of CISPI 310.



Husky SD-2000

HD-150	1-1/2"
HD-22	2"
HD-33	3"
HD-44	4"
HD-55	5"
HD-66	6"
HD-88	8"
HD-1010	10"

No-Hub Couplings

NH-150	1-1/2"
NH-22	2"
NH-33	3"
NH-44	4"
NH-55	5"
NH-66	6"
NH-88	8"
NH-1010	10"
NH-1212	12"
NH-1515	15"

Reducing Sizes

NH-215	2" x 1-1/2"
NH-32	3" x 2"
NH-42	4" x 2"
NH-43	4" x 3"

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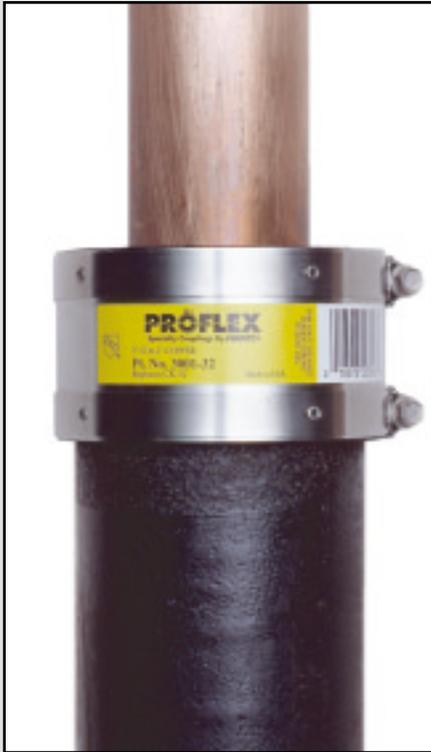
US: 1-800-521-1283

• CANADA: 1-800-265-7518



PROFLEX

Shielded Specialty Couplings



Part Numbers And Description For The 3000 Series

Part Number	Description	Mission Equivalent
3000 Series For Cast Iron To Plastic, Steel Or Extra-Heavy Cast Iron		
3000-150	1-1/2" CI, PL or ST to 1-1/2" CI, PL or ST	CP-150
3000-22	2" CI, PL or ST to 2" CI, PL, or ST	CP-22
3000-215	2" CI, PL or ST. to 1-1/2" PL or ST	CP-215
3000-33	3" CI to 3" PL, ST or XHCI	CP-33
3000-43	4" CI to 3" PL, ST or XHCI	CP-43
3000-44	4" CI to 4" PL, ST or XHCI	CP-44
3000-55	5" CI to 5" PL, ST or XHCI	CP-55
3000-66	6" CI to 6" PL, ST or XHCI	CP-66
3000-88	8" CI to 8" PL, ST or XHCI	CP-88
3001 Series For Cast Iron, Plastic, Or Steel To Copper		
3001-1125	1-1/2" CI, PL or ST to 1-1/4" Copper or 1" PL	CK-1125
3001-150	1-1/2" CI, PL or ST to 1-1/2" Copper or 1-1/4" PL	CK-115
3001-215	2" CI, PL or ST to 1-1/2" Copper or 1-1/4" PL	CK-215
3001-22	2" CI, PL or ST to 2" Copper	CK-22
3001-32	3" CI to 2" Copper	CK-32
3001-33	3" CI to 3" Copper	CK-33
3001-43	4" CI to 3" Copper	CK-43
3001-44	4" CI to 4" Copper	CK-44
3002 Series For Cast Iron, Plastic, Or Steel To Tubular		
3002-150	1-1/2" CI, PL or ST to 1-1/2" Tubular	T-150
3002-215	2" CI, PL or ST to 1-1/2" Tubular	T-215
3002-155	1-1/2" Tubular to 1-1/2" Tubular	BWT-150
3003 Series For Copper To Copper		
3003-150	1-1/2" Copper to 1-1/2" Copper or 1-1/4" PL	K-150
3003-22	2" Copper to 2" Copper	K-200
3003-215	2" Copper to 1-1/2" Copper or 1-1/4" PL	K-215
3003-33	3" Copper to 3" Copper	K-300
3004 Series For Cast Iron To Cast Iron, Plastic Or Steel		
3004-320	3" CI to 2" CI, PL or ST	C-320
3004-420	4" CI to 2" CI, PL or ST	C-420
3004-430	4" CI to 3" CI	C-430
3004-540	5" CI to 4" CI	C-540
3005 Series For Plastic, Steel Or XHCI To Plastic, Steel Or XHCI		
3005-33	3" PL, ST, or XHCI to 3" PL, ST, or XHCI	P-300
3005-43	4" PL, ST, or XHCI to 3" PL, ST, or XHCI	P-430
3005-44	4" PL, ST, or XHCI to 4" PL, ST, or XHCI	P-400
3006 Series For Copper To Cast Iron, Plastic or Steel		
3006-215	2" Copper to 1-1/2" CI, PL, or ST	KC-215
3006-32	3" Copper to 2" CI, PL, or ST	KC-32
3006-43	4" Copper to 3" CI	KC-43
3007 Series For Plastic, Steel or Extra-Heavy Cast Iron To Copper		
3007-32	3" PL, ST, or XHCI to 2" Copper	PK-32
3007-33	3" PL, ST, or XHCI to 3" Copper	PK-33
3007-43	4" PL, ST, or XHCI to 3" Copper	PK-43
3007-44	4" PL, ST, or XHCI to 4" Copper	PK-44
3008 Series For Plastic, Steel Or XHCI To Plastic, Steel Or XHCI		
3008-32	3" PL, ST, or XHCI to 2" PL, ST, or XHCI	PC-32
3009 Series For Thinwall Plastic To Sch. 40 Plastic		
3009-44	4" Thinwall PL to 4" Sch 40 PL	TWP-44
3010 Series For Copper To Tubular		
3010-150	1-1/2" Copper to 1-1/2" Tubular	KT-150

LARGE DIAMETER WATERSTOP

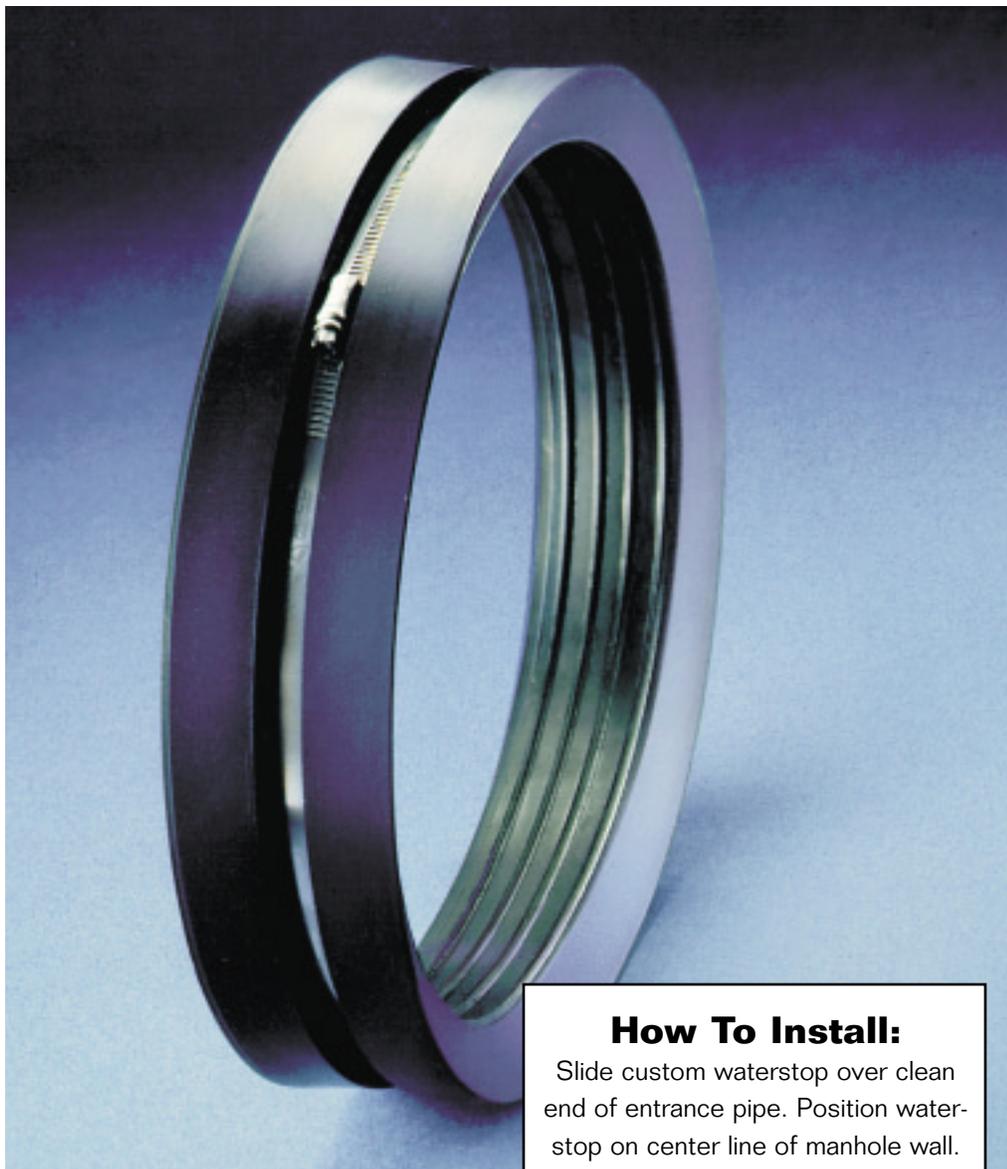
For Sewer Pipe 8" (203mm) And Larger

Order by specifying the outside diameter (O.D.) of the pipe which is to receive the waterstop. Minimum size: 8.5" O.D. (55.6mm O.D.)

Large Diameter Waterstops help eliminate leaks around pipe entering manhole walls, yet are flexible enough to permit lateral pipe movement without destroying seal integrity. It is particularly useful for pipe to which concrete will not adhere, such as plastic pipe.

The waterstop is made of elastomeric PVC, is corrosion proof and is unaffected by acid or alkalis, however the waterstop is subjected to many various conditions that are beyond the manufacturers control. High ground water tables, quality of grout, workmanship and field conditions can affect its ability to seal. Discretion must be used in its application and installation.

Due to the many varying factors that can influence the waterstop effectiveness as a seal, Fernco does not warrant this product as a positive water seal.



How To Install:

Slide custom waterstop over clean end of entrance pipe. Position waterstop on center line of manhole wall.

Tighten the stainless steel band to 60"/lbs. torque. Stainless steel band is furnished with the waterstop.

Grout around the waterstop as normally done to close an opening in a concrete wall.

For waterstops smaller than 12", see concrete manhole adapters.

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CONCRETE MANHOLE ADAPTERS

For Pipes Entering Manhole Walls

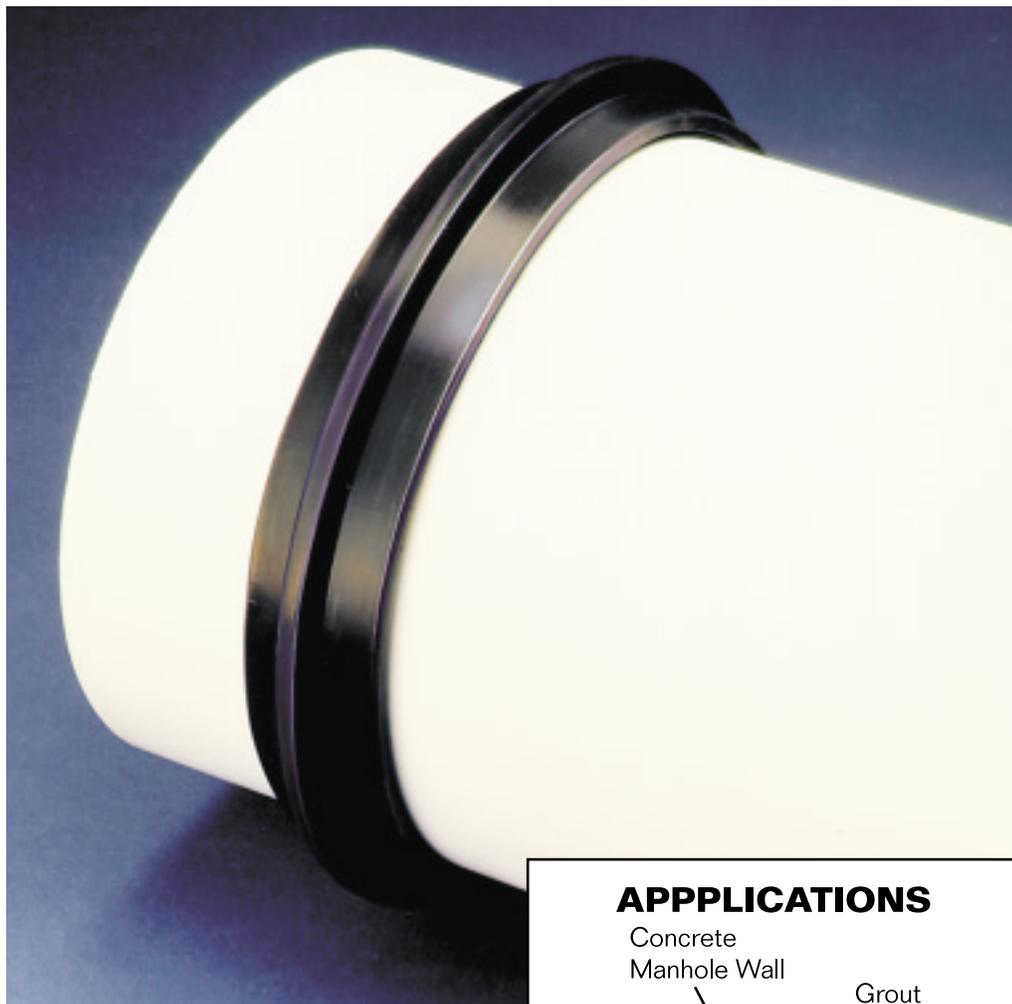
Concrete Manhole Adapters help eliminate leaks around pipe entering manhole walls, yet are flexible enough to permit lateral pipe movement without destroying seal integrity. It is particularly useful for pipe to which concrete will not adhere, such as plastic pipe.

The CMA is made of elastomeric PVC, is corrosion proof and is unaffected by acid or alkalis, however the CMA is subjected to many various conditions that are beyond the manufacturers control. High ground water tables, quality of grout, workmanship and field conditions can affect its ability to seal. Discretion must be used in its application and installation.

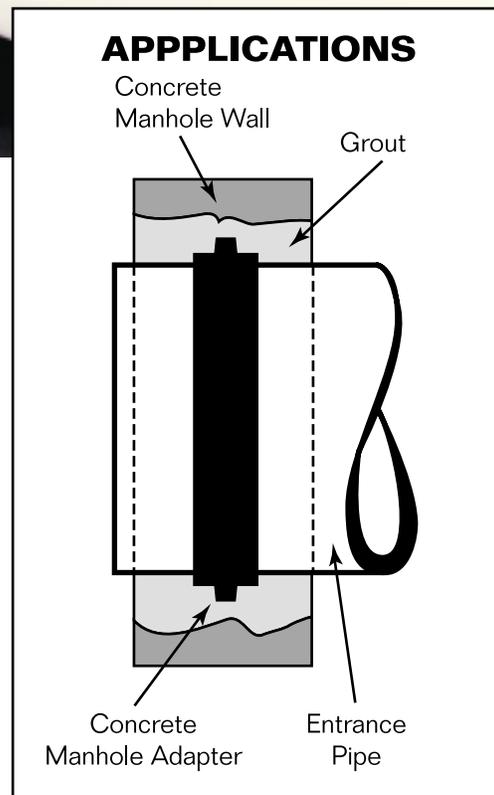
Due to the many varying factors that can influence the CMA's effectiveness as a seal, Fernco does not warrant this product as a positive water seal.

CMA's are available for 4, 6, 8, 10 and 12-inch pipe. CMA's in sizes larger than 12 inches are also available.

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CMA's	
4 CMA	4" (101mm)
6 CMA	6" (152mm)
8 CMA	8" (203mm)
10 CMA	10" (254mm)
12 CMA	12" (304mm)



US: 1-800-521-1283

CANADA: 1-800-265-7518



FERNCO DONUTS

Fernco Donuts are flexible PVC donut-shaped rings for compression sealing of sewer pipe joints and drain waste and vent connections such as sockets, hubs, bells and spigots. They offer all of the properties necessary to create a good, lasting joint.

Fernco Donuts are made from strong, resilient, chemical-resistant elastomeric PVC specially formulated for use as a sewer joint material. Because of the inertness and chemical resistance of the material, Fernco Donuts are impervious to soil conditions, sewage and water in the carrier pipes, and to normal sewer gases.

A bearing surface is provided by filling the annular space (between the pipes being joined) with the donut. This supports the spigot and distributes the earth load over a larger area of the external pipe.

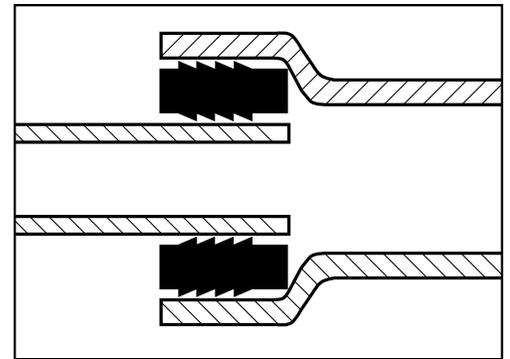
The design and elastomeric material of the Fernco Donut both contribute to sewer joint permanence even under common conditions of ground movement and expansion and contraction of the pipes.



Sewer Pipe Compression Joint Sealers



- Provides an infiltration/exfiltration-proof seal for sewer pipe joints.
- Eliminate the use of cement or mortar for sewer pipe joints.
- Reduce the need for costly, hard-to-obtain fittings.
- Seal securely - resilient, flexes with ground movement.
- Adapt size to size or increasing size—1-1/4" through 12".



The donut is designed to provide several points of seal in order to accommodate possible irregularities in the pipe surfaces. If one seal-point is disturbed, the others will maintain the seal.

Sewer pipe companies do not manufacture their pipe to common dimensional standards. Instead, pipe is produced to the designs and dimensions best suited for each particular sewer system. Because of this, variations in dimensions of pipe bells, hubs and bores are simply too great to permit making a single universal connector.

Detailed information must be furnished when ordering donuts -
Either by pipe manufacturer or by pipe dimensions.



FERNCO DONUTS

How To Order

If you do not know the part number, you can order by description; giving the size, material and type of connection you want to make. Donuts require specific information on the manufacturer of pipe. Our sales coordinators are trained to assist you. Donuts can also be ordered by dimensions.

Donuts seal by compression and have much less dimensional range than couplings. The bell, hub or socket dimensions must be given within 1/32" accuracy.

Consequently, Fernco Donuts are available in hundreds of sizes and configurations for use with most brands and types of piping material. Each is designed to fit the basic configuration and dimensions for the type of joint being made, based on the specifications received from various pipe producers . . . specifications which often are changed arbitrarily and without notice.

Caution: A donut that has too loose or too tight a fit could result in a bad joint. Contact Fernco for proper selection.

Important

Pressure test† before backfilling or concealing.



Typical Fernco Donut Installations

Same Size -
Different
Material



Same
Size -
Same
Material



Different
Size -
Same
Material



Different
Size -
Different
Material



How To Install

Tolerances of any pipe may be greater than the effective range of Donuts. Since Donuts seal by compression in the annular space between pipes being connected, considerable force † (30 PSI) must be exerted on the sealing surfaces during installation.

IMPORTANT NOTICE Concerning Installation Of Fernco Donuts:

Please be aware that the tolerances of any pipe may be greater than the effective sealing range of this product. Donuts seal by compression in the annular space between the pipes being connected. Considerable force (30 psi) must be exerted on the sealing surfaces during installation of our compression joints for gravity sewer applications. If the donut installs with little effort or appears to be loose contact the factory. We are providing the best possible donut available according to the description of the pipes being connected as supplied by you. Our interpretation of this information is based on specifications we receive from the various pipe producers.

However, these specifications are often changed arbitrarily without notifying us. It is important that you and the installer be aware that this product may not function as intended due to improper or insufficient description of the pipes being connected or changes in pipe dimension or design. We recommend that all connections be tested before back fill or enclosure.

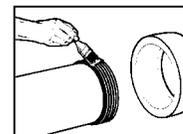
Installations and ordering instructions are available from FERNCO, INC.

DRIVE METHOD INSTALLATION

This method is used when the Donut has a wall thickness of 3/8" or greater.



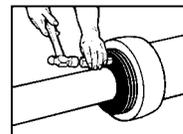
Donut quarter section view. Donut has thick wall—no stop flange.



Lubricate the outside of the donut with a soap solution.



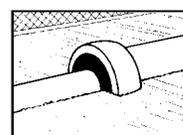
Insert spigot through center of donut approximately 1-1/2".



*Insert donut and spigot assembly into opening. Drive donut with hammer and wedge until fully seated.



Make sure the bell is clean and free of debris.



Test joint to engineer's specification. Pressure test † before backfilling or concealing. Bed and backfill properly.

For further information on Code approvals, contact Fernco Customer Service Department.

US: 1-800-521-1283

CANADA: 1-800-265-7518



QWIK TEES AND ELLS

Qwik Tees and Elbows are exceptionally flexible and extra long and are the ideal replacement for fittings cut out at the joint during alteration or repair. The connectors are easily installed by tightening the stainless steel clamps. Made from flexible PVC, Qwik-Tees and Qwik-Elbows come in four sizes (1-1/2", 2", 3" and 4") and fit all common household pipes including CI, steel, plastic, copper and lead. Reducing sizes are made with separately supplied bushings.

Installation Instructions

1. Cut pipe at joints as shown.
2. Slip pipe into fitting socket.
3. Securely tighten stainless steel bands. (60" lbs. torque.)
4. Support pipe on all sides of connection to keep weight off fitting.
5. Test for leaks before concealing

Note: Not recommended for underground connections. For drain, waste, and vent use only. In-wall pipe should be supported. Do not use in pressure applications.

Tees and elbows adapt to other pipe sizes with Qwik Bushings.



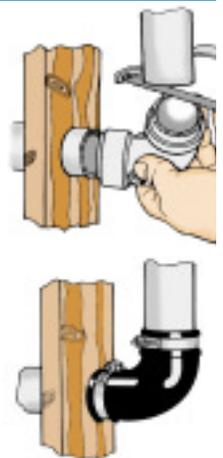
For In-Wall or Other Limited Space Connections



Product	Part No.	Size
TEES	QT-150	1-1/2" x 1-1/2" x 1-1/2" (38 x 38 x 38mm)
	QT-200	2" x 2" x 2" (50 x 50 x 50mm)
	QT-300	3" x 3" x 3" (76 x 76 x 76mm)
	QT-400	4" x 4" x 4" (101 x 101 x 101mm)
ELBOWS	QL-150	1-1/2" x 1-1/2" (38 x 38mm)
	QL-200	2" x 2" (50 x 50mm)
	QL-300	3" x 3" (76 x 76mm)
	QL-400	4" x 4" (101 x 101mm)
BUSHINGS	QB-215	2" x 1-1/2" (50 x 38mm)
	QB-32	3" x 2" (76 x 50mm)
	QB-43	4" x 3" (101 x 76mm)

To Repair Or Replace A Plastic Ell Or Tee

To repair this installed rigid elbow it is first necessary to cut out the elbow. After cutting, the portion of pipe that was welded into each socket is lost, and now a regular schedule 40 fitting can no longer be used in replacement unless the pipes are extended back to normal position. Also, the pipes are usually in a fixed position, making it difficult or impossible to get the necessary room required to solvent weld a new joint. The Qwik Elbows and Qwik Tees, however, are engineered with extra length to compensate for the shortened pipes.



EZ TAP SEWER SADDLE

EZ Tap Sewer Saddle Is a faster and less costly way for contractors and municipalities to make sewer main connections.

This new Fernco design uses a single band with a single draw point for a quick take-up system that speeds installation and reduces labor cost.

EZ Tap is built to last, too. Its band and frame work are made from durable 304 stainless steel. The saddle itself is manufactured from specially formulated elastomeric PVC that's highly resistant to caustic chemicals, bacteria and fungi to maintain a positive seal. In fact, the EZ Tap Sewer Saddle has been tested to 4.3 pounds of pressure with no leaking at all.

Applications:

EZ Tap is available in two sizes: EZ Tap 4 is used to connect 4-inch (101.6mm) lateral pipes to 6-inch (152.4mm) and larger sewer mains. EZ Tap 6 connects 6-inch (152.4mm) lateral pipes to 8-inch (203.2mm) and larger sewer mains.

By using additional lengths of Fernco's EZS-20 sewer saddle strap extenders, EZ Tap can fit any size of clay, concrete, AC/DI or CI/PL sewer mains.

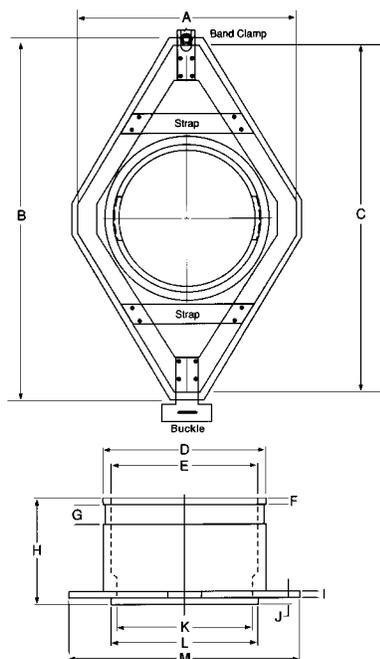


For Sewer Main Connections



- Single band with single draw point for quick installation.
- Saddle resistant to caustic chemicals, bacteria and fungi.
- EZS-20 Strap extenders allow hook-up to any size pipe.
- 1 EZS-20 strap will accommodate an additional 6" to the diameter.

Specifications	EZ Tap 4 And EZ Tap 6
Frame Work	16 Gage 304 SS
Buckle	18 Gage 304 SS
Band Clamp Strap	22 Gage 304 SS
PVC Saddle	60-65 Duro 5/16 Saddle Thickness
Hose Clamp Saddle	All 300 Series Stainless Steel
Coupling End	EZ Tap 4 fits all pipe material from 6" O.D. to 15.5" O.D. (E.Z. Tap 6 fits all 8" O.D. to 16.5" O.D. pipe material)
Leak Test	Deflection tested at 5° at 4.3 PSI to be leak free
EZS-20 Strap	1 EZS-20 strap gives an additional 6" to the diameter



	EZ Tap 4	Ez Tap 6
A	7.40"	9.92"
B	11.00"	16.38"
C	10.77"	15.75"
D	5.10"	7.37"
E	4.35"	6.63"
F	0.23"	0.25"
G	0.64"	0.64"
H	3.73"	4.87"
I	0.29"	0.31"
J	0.31"	0.31"
K	4.00"	6.31"
L	4.38"	6.50"
M	7.75"	10.37"



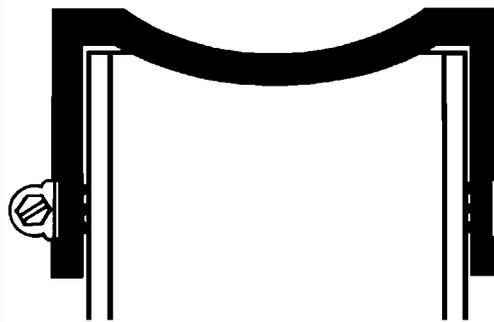
QWIK CAPS

Qwik Caps offer a quick, easy way to cap pipe ends, cleanouts and open test pipes. Made of flexible PVC, they're suitable for above-ground or underground use, on cast iron, steel, copper or plastic piping.

Qwik Caps are designed to fit all drain, waste, and vent pipe materials in a given nominal size. The convex face allows the cap to withstand greater pressure for testing purposes and minimizes ballooning.

To install, simply place over open end of pipe and tighten to 60" lbs. torque.

To Cap Pipe Ends, Cap For Testing or to Cap For Clean-Outs



Part No.	Size
QC-101	1-1/2" (38mm)
QC-102	2" (50mm)
QC-103	3" (76mm)
QC-104	4" (101mm)
QC-105	5" (127mm)
QC-106	6" (152mm)
QC-108	8" (203mm)

- Fast, easy installation
- Permanent or temporary
- For underground or above-ground use.
- Low cost, reusable.

FERNCO
Plumb-Quick
www.fernco.com

US: 1-800-521-1283



CANADA: 1-800-265-7518



STAINLESS STEEL CLAMPS

Housing Screw & Band Type 300 Stainless Steel

Series 300 Stainless Steel Clamps are corrosion-resistant and rustproof. Their inter-locked housing and band design strengthens under tension to ensure a positive seal.

Band housing and screw feature premium, all-stainless construction.

Bands have additional slots to accommodate greater dimensional range.

Hexagonal head screws are deep-slotted for fast, easy installation. Clamps cover diameters 1-5/16" to 20".



Clamp Number	For Diameters	Clamp Number	For Diameters
HAS 12	9/16" to 1-1/4"	HAS 104	5" to 7"
HAS 24	1-1/16" to 2"	HAS 116	7-1/4" to 9-1/4"
HAS 28	1-5/16" to 2-1/4"	HAS 128	6-1/2" to 8-1/2"
HAS 32	1-9/16" to 2-1/2"	HAS 140	7" to 9-1/4"
HAS 38	1-15/16" to 2-7/8"	HAS 152	8" to 10"
HAS 42	2-3/16" to 3-1/8"	HAS 164	8-3/4" to 10-3/4"
HAS 44	2-5/16" to 3-1/4"	HAS 184	10" to 12"
HAS 64	2-5/8" to 4-1/2"	HAS 196	10-3/4" to 12-3/4"
HAS 80	3-5/8" to 5-1/2"	HAS 212	11-3/4" to 13-3/4"
HAS 88	4-3/32" to 6"	HAS 248	14" to 16"
HAS 96	4-1/2" to 6-1/2"		

Series 316 Stainless Steel Clamps are available upon request. Please contact Fernco Customer Service Department.



US: 1-800-521-1283



CANADA: 1-800-265-7518



Appendix 8
BIG Program Insurance Requirements

FACT SHEET – BIG PROGRAM INSURANCE REQUIREMENTS

Investigation Grants – for a developer or site owner to be eligible for a BIG investigation grant, its environmental consultant(s) must be:

- a Qualified Vendor in the BIG Program; and
- maintain Professional Liability (PL) insurance of \$1M per claim and annual aggregate.

Cleanup Grants – for a developer or site owner to be eligible for a BIG cleanup grant:

- Its general contractor or excavation/foundation contractor hired to perform remedial work must maintain Commercial General Liability (CGL) insurance of at least \$1M per occurrence and \$2M in the general aggregate. It is recommended that the general contractor or excavation/foundation contractor also maintain a Contractors Pollution Liability policy (CPL) of at least \$1M per occurrence.
- Its subcontractors who are hired by the general contractor etc. to perform remedial work at a site, including soil brokers and truckers, must also maintain a CGL policy in the amount and with the terms set forth above. It is recommended that subcontractors also maintain a CPL policy in the amount and with the terms set forth above.

The CGL policy, and the CPL policy if in force, must list the city, EDC and BRS as additional insureds, include completed operations coverage and be primary and non-contributory to any other insurance the additional insureds may have.

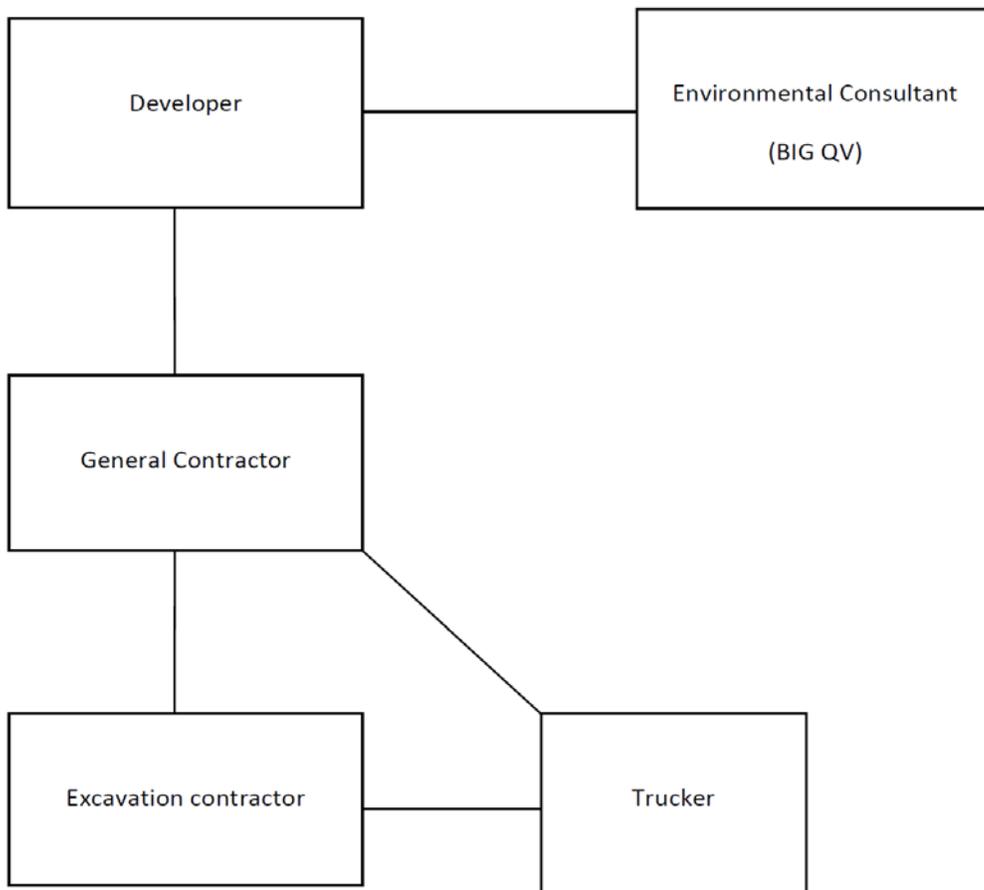
- Its environmental consultant(s) hired to oversee the cleanup must be:
 - a. a BIG Qualified Vendor; and
 - b. maintain Professional Liability (PL) insurance of \$1M per claim and annual aggregate.

If, in the alternative, the developer hires its environmental consultant to perform the cleanup, the environmental consultant must maintain CGL insurance in the amount and with the terms set forth above. It is recommended that the environmental consultant also maintain CPL coverage in the amount and with the terms set forth in the first two bulleted items listed above.

A schematic presenting the contractual relationships described above appears on page 2. Parties who must be named as Additional Insureds on Cleanup Grant insurance policies (CGL and CPL) are presented on page 3.

Example of Contractual Relationships for Cleanup Work

The Office of Environmental Remediation’s Voluntary Cleanup Plan program requires applicants to identify the parties who are engaged in active remediation of their sites including: the General Contractor hired to remediate and/or the excavation contractor hired to excavate soil from the site and the trucking firm(s) that remove soil from the site for disposal at approved facilit(ies).



The chart above shows contractual relationships that typically exist for projects that are enrolled in the Voluntary Cleanup Program.

BIG Program Additional Insureds

The full names and addresses of the additional insureds required under the Required CGL Policy and recommended CPL Policy are as follows:

“City and its officials and employees”
New York City Mayor’s Office of Environmental Remediation
253 Broadway, 14th Floor
New York, NY 10007

“NYC EDC and its officials and employees”
New York City Economic Development Corporation
110 William Street
New York, NY 10038

“BIG Grant Administrator and its officials and employees”
Brownfield Redevelopment Solutions, Inc.
739 Stokes Road, Units A & B
Medford, NJ 08055

Generic Template for Daily Status Report

Instructions

The Daily Status Report submitted to OER should adhere to the following conventions:

- Remove this cover sheet prior to editing.
- Remove all the **red text** and replace with site-specific information.
- Submit the final version as a Word or PDF file.

Daily Status Reports

Daily status reports providing a general summary of activities for each day of *active remedial work* will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions, if any;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

DAILY STATUS REPORT

WEATHER	Snow		Rain		Overcast		Partly Cloudy	X	Bright Sun	
TEMP.	< 32		32-50		50-70	X	70-85		>85	

Prepared By:

Enter Your Name Here _____

VCP Project No.:	13CVCP000M	E-Number:	13EHAN000M	Date:	01/01/2013
Project Name:	Name or Address				

Consultant: Person(s) Name and Company Name	Safety Officer: Person(s) Name and Company Name
General Contractor: Person(s) Name and Company Name	Site Manager/ Person(s) Name and Company Name
Supervisor:	

Work Activities Performed (Since Last Report):
 Provide details about the work activities performed.

Working In Grid #: A1, B1, C1

Samples Collected (Since Last Report):
 No samples collected or provide details

Air Monitoring (Since Last Report):
 No air monitoring performed or provide details

Problems Encountered:
 No problems encountered or provide details

Planned Activities for the Next Day/ Week:
 Provide details about the work activities planned for the next day/ week.

Facility # Name/ Location Type of Waste Solid <u>Or</u> Liquid	Facility # Name Location Type of Waste Solid <u>Or</u> Liquid		Example:							
	Trucks	Cu. Yds. <u>Or</u> Gallons	Trucks	Cu. Yds.						
									Clean Earth Carteret, NJ petroleum soils Solid	
Today									5	120
Total									25	600

NYC Clean Soil Bank		Receiving Facility: Name/ Address (Approved by OER)			
Tracking No.:	13CCSB000				
Today	Trucks 5	Cu. Yds. 25	Total	Trucks 120	Cu. Yds. 600

Site Grid Map
 Insert the site grid map here

Photo Log

<p>Photo 1 – provide a caption</p>	<p>Insert Photo Here – Photo of the entire site</p>
<p>Photo 2 – provide a caption</p>	<p>Insert Photo Here – Photo of the work activities performed</p>
<p>Photo 3 – provide a caption</p>	<p>Insert Photo Here – Photo of the work activities performed</p>

