

SPECIFICATION FOR

CONVERTIBLE COLLAR LINER (POLYETHYLENE (PE)) 03/09

With

Lip Seal Gasket

A) SCOPE:

Furnish a multi-purpose, Polyethylene (PE) liner with gasket for manhole (sanitary, storm, leachate, retrofit) grade adjustment rings of precast concrete (brick/masonry/field poured concrete) or ABS to address the following criteria.

1.0 Provide a corrosion resistant barrier to protect exposed concrete grade adjustment above fully lined or unlined flat slab top/cones.

1.1 Create an effective seal between multiples of concrete or ABS grade rings and their contact with flat slab tops/cones to prevent infiltration of surface water into the sewer system.

1.2 Provide both vertical and horizontal adjustment to suit grade and camber.

1.3 The convertible collar and gasket shall be resistant to the chemical environment normally found in wastewater transmission systems.

B) POLYETHYLENE (PE) CONVERTIBLE COLLAR WITH LIP SEAL

GASKET:

1.0 The convertible collar shall be a one piece rotationally molded polyethylene sleeve with a sealing flange (approx 2"/50mm wide) at right angles to the vertical.

1.1 The adjustable effective height shall be minimum ± 4 inches (100mm).

1.2 Inside diameter of the access opening shall be 24 inches (610mm).

C) MATERIALS:

1.0 POLYETHYLENE (PE) – Low density polyethylene (LDPE), suitable for potable water tanks, chemical storage tanks and septic tanks.

1.1 Minimum thickness – 0.2"-0.25" (5mm-6mm).

1.2 Color – dull mustard/goldenrod.

1.3 Polyisoprene gasket – 50-55 durometer.

D) INSTALLATION:

1.0 Assemble and install precast manhole structure in the customary manner as prescribed by the manufacturer and approved construction plans.

1.1 Inspect precast flat slab top/cone for correct access opening diameter and any damage or irregularities that could compromise the installation and seal of the convertible collar liner. Repair/replace as necessary.

1.2 Clean dirt and/or excess concrete slurry from the gasket mounting area.

1.3 Install lip seal gasket as described: The outer/upper lip of the gasket shall be placed evenly around the top interior edge of access opening. The three sealing flutes of the gasket must be oriented to face the center of the opening and downward toward the interior of the structure.

1.4 Insert convertible collar liner through the installed lip seal gasket/access opening and deflect the liner to conform to the finished sub-grade or pavement surface as per drawings or as directed by the engineer. To provide accurate cast iron frame alignment, precast concrete grade rings or ABS grade rings must be set on top of flat slab tops/cones before the convertible collar is installed. **IMPORTANT NOTE;** Precast concrete grade rings must have an inside diameter 1 1/2" greater than the inside diameter of the convertible collar. (I.E. 24" inside diameter convertible collar liner requires 25 1/2" inside diameter precast concrete grade rings.)

1.5 Set precast grade rings or brick masonry into a full bed of non-shrink grout ensuring that the space between each ring or brick course is completely filled. The annular space between the convertible collar liner and grade rings etc. must also be filled with grout leaving no voids.

1.6 Manhole frame shall be aligned with and bedded into a bead of approved, preformed flexible butyl joint sealant applied to the top of the liner's sealing flange. The cast iron frame shall be anchored as prescribed by the utility specification or as directed by the engineer. It is recommended that the butyl joint sealant be ¼" to 3/8" thick and from ¾" to 1 ½" wide. The butyl joint sealant shall comply with the most current revision of Standard Specification ASTM C990, Section 6.2 – Butyl Rubber Sealant and Federal Specification SS-S-210A type 1 and shall be applied per manufacturer's instructions. NOTE: Thicker butyl sealant strips typically used for precast concrete structure joints are too thick and will prevent accurate alignment of the convertible collar liner and the cast iron frame on the correct grade.

1.7 Mechanical anchoring attachments through liner surfaces must be sealed with an approved elastomeric sealant. (See approved source recommendations.)

1.8 After assembly is complete, the interior surfaces of the liner shall be free of pinholes, cracks, pits or defects which are detrimental to the intended use of the liner. No liner shall have holes or openings which will permit the intrusion of liquids or gasses through the liner wall and into the concrete matrix. There shall be no exposed mortar on any inside liner surface at cast iron frame ring joint which will permit the passage of liquid or gasses through the liner wall to masonry adjustment or precast concrete sections.

SUPPLY SOURCES OF RECOMMENDED GROUTS, ELASTOMERIC BUTYL SEALANTS AND ADHESIVES FOR INSTALLATION OF THE GU CONVERTIBLE COLLAR (03/09)

FLOWABLE/PUMPABLE GROUTS

SULPHATE RESISTANT GROUTS

PRODUCT: MASTERFLOW 928
BASF BUILDING SYSTEMS
889 Valley Park Dr
Shakopee, MN 55379
TEL: 800 / 433-9517
FAX: 800 / 496-6067
www.buildingsystems.basf.com

PRODUCT: PORTLAND EXPANDING NON-SHRINK GROUT
TARGET PRODUCTS LTD.
8535 East Lake Drive
Burnaby, BC
Canada V5A 2T7
TEL: 604/444-3620 or 800/575-7700
FAX: 604/420-3616
www.targetproducts.com

PRODUCT: FIVE STAR SPECIAL GROUT 150
FIVE STAR PRODUCTS, INC
750 Commerce Drive
Fairfield , CT 06825
TEL: 203/336-7900
FAX: 203/336-7930
www.fivestarproducts.com

NON-SULPHATE RESISTANT GROUTS

PRODUCT: 1107 ADVANTAGE GROUT
DAYTON SUPERIOR

PRODUCT: NC GROUT
THE EUCLID CHEMICAL COMPANY

777 Washington Village Dr, Suite 130
Dayton, OH 45459
TEL: 877/632-9866
FAX: 937/428-9560
www.daytonsuperior.com

19218 Redwood Rd
Cleveland, OH 44110
TEL: 216/531-9222 or 800/321-7628
FAX: 216/531-9596
www.euclidchemical.com

**PRODUCT: NON-SHRINK PRECISION GROUT
QUIKRETE CEMENT & CEMENT PRODUCTS**
One Securities Center
3490 Piedmont Road, Suite 1300
Atlanta, GA 30305
TEL: 404/634-9100 or 800/282-5828
FAX: 404/842-1424
www.quikrete.com

BUTYL RUBBER PREFORMED FLEXIBLE JOINT SEALANT

(PRECAST CONCRETE TOP SECTION JOINT ONLY - CONE / FLAT TOP / CAST IRON FRAME)
(SPECIFICATION - ASTM C-990, Section 6.2 Butyl Rubber Sealant)

PRODUCT: RU106-RUB' R-NEK "LTM"
HENRY COMPANY, SEALANTS DIVISION
CORPORATION
1277 Boyles St.
Houston, TX 77020
TEL: 713 / 671-2494 - 800 / 231-4549
FAX: 713 / 673-7714
www.henry.com

**PRODUCT: PRO-STIK
PRESS-SEAL GASKET**
2424 W. State Blvd.
Fort Wayne, IN 46804
TEL: 219 / 436-0521 - 800 / 348-7325
FAX: 219 / 436-1908
www.press-seal.com

ELASTOMERIC SEALANTS - RESILIENT CURING NON SHRINK CAULK TYPE

(MECHANICAL ANCHOR PENETRATIONS AND REMEDIAL "CAULK" SEAL OF MISCELLANEOUS JOINTS OR SEAMS - 1" WIDTH OR LESS)

NOTE: The sealant manufacturer's application and surface preparation procedures (including primer) must be followed. This includes recommended maximum joint depth of 1/2" (1/4" minimum thickness) and the use of bond-breaker polyethylene closed cell foam backer rod or polyethylene bond breaker tape.

PRODUCT: SIKAFLEX 1a

PRODUCT: SCS 1003

Polyurethane sealant;
Use SIKAFLEX 449-203 PRIMER
SIKA CORPORATION
201 Polito Ave.
Lyndhurst, NJ 07071
TEL: 800 / 933-7452
www.sikaconstruction.com

Silicone sealant;
Use GE SS4179 PRIMER
GENERAL ELECTRIC COMPANY
260 Hudson River Road
Waterford, NY 12188
TEL: 800 / 255-8886
www.gesilicones.com

PRODUCT: VULKEM 921
Polyurethane Sealant;
Tremco 171 PRIMER (porous substrates)
TREMprime NON-POROUS PRIMER (metal substrates)
TREMCO, INCORPORATED
3735 Green Road
Beachwood, OH 44122
TEL: 800 / 852-8173
www.tremcosealants.com