

KISTNER CONCRETE PRODUCTS, INC.

8713 READ ROAD

EAST PEMBROKE, NEW YORK 14056-0218

PH: 585-762-8216

FX: 585-762-8315

**FACTS YOU NEED TO
KNOW ABOUT
WATERTIGHT
PRECAST MANHOLES**

ASTM C-478

ASTM C-443

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TECHNICAL NOTE #100

Subject: ASTM C-443 *for more information see www.astm.com

ASTM C-443 provides guidance and specifications regarding flexible, watertight joints for circular concrete sewer pipe and precast concrete manholes used rubber gaskets for sealing joints where infiltration and exfiltration is a factor in design.

The ASTM design standards have been developed to provide the Specifying Engineer, Installing Contractor, Owner, and the Public with a high level of assurance that the quality and performance of precast concrete components of a drainage system meet or exceed an established level of physical performance requirements.

Specifying ASTM C-443 as a mandatory requirement demonstrates a solid understanding of quality drainage systems and represents a commitment to the environment and public health. Maintaining this specification also provides long-term quality assurance and financial value to the owner and/or municipality.

WARNING!!!

BUTYL RUBBER MASTIC DOES NOT MEET ASTM C-443 SPECIFICATIONS. THE FOLLOWING PHYSICAL PERFORMANCE CRITERIA WOULD BE COMPRISED IF ONLY BUTYL RUBBER MASTIC WERE USED: SECTION 6.1.1 – TENSILE STRENGTH, ELONGATION, DUROMETER, HYDROSTATIC TESTING (13 PSI), AND AASHTO M198.

NOTE!!!

Confined Rubber Gaskets fully comply with ASTM C-443

The manufacturing technology to provide high quality rubber gaskets is readily available in the precast concrete industry. You do not have to compromise your project, creating potential liability, by using a sub-standard product.

Kistner Concrete Products respects and endorses specifications which are clearly spelled out. We will continue to competently provide products which meet project requirements without compromise or the lowering of industry standards.

Should you have any questions or wish to discuss this matter further, please contact us at Kistner Concrete Products Inc. – Sales & Engineering. (585) 762-8216

FACTORY LUBRICATED MANHOLE GASKETS

Factory Lubricated Manhole Gaskets: A distinct innovation that becomes the total solution in the joint sealing of manhole bases and riser sections.

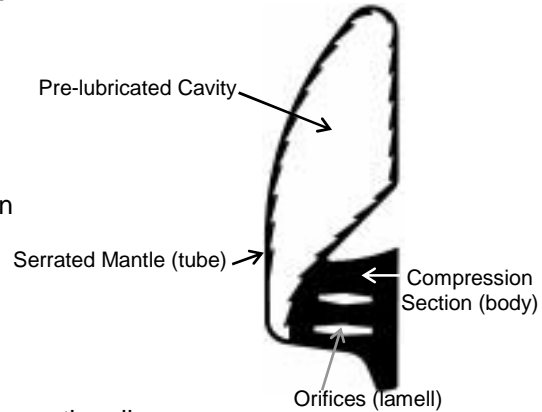
Advantages

Unique Design

- Self contained lubricant
- No special handling or packaging
- No threat of lubricant contamination or deterioration
- Saves time and mess of lubricant application
- No equalization required
- No butyl required

Function

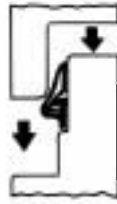
Factory lubricated gaskets have silicone lubricant encapsulated in the tube. During pipe assembly the mantle rolls over the compression area of the gasket resulting in a watertight seal.



Installation



Factory lubed gasket should be positioned firmly in the step of the spigot.



Lower manhole section slowly and lower onto spigot



The mantle section of the factory lubed gasket rolls over the compression area and comes to rest in the small annular space creating a watertight seal and preventing concrete to concrete contact.

WARNING: USE NO CONVENTIONAL LUBRICANT WHATSOEVER.

Using lubricant may dislodge gasket from step of spigot or prevent the mantle from being drawn into small annular space causing leaks or breaking the bell.

Material Specifications

Factory lubricated gaskets are manufactured from top quality rubber. All gasket material conforms to or exceeds C.S.A. A-257, A.S.T.M. C-443, and C-361 specifications.

Quality Control

Our state of the art production and laboratory facilities, as well as our staff of competent engineers, and technicians, work together to ensure the highest quality precast products available today.

Service

For more than half a century, Kistner Concrete Products, Inc. has been the leader in the manufacture of precast concrete in Western New York. Our complete line of products, ongoing research and development programs, and a knowledgeable sales staff, continue to make us number one and second to none within the industry.

The Leading Manufacturer of Precast Concrete Products

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PRODUCT DESIGNATION
MANHOLE ASSEMBLY PROCEDURE

CODE
MH-INSTALL ©
4-26-01

PRODUCT CODE: IS-INST-MH

* EQUIPMENT MUST NEVER BE USED TO FORCE MANHOLE SECTIONS TOGETHER. IF DIFFICULTY IS ENCOUNTERED, REMOVE SECTION AND REPEAT STEPS 1-6. CALL KISTNERS' SALES & ENGINEERING DEPARTMENT IMMEDIATELY.

LUBRICANT APPLICATION

4' DIA. - 1/2	GAL/JOINT
5' DIA. - 1	GAL/JOINT
6' DIA. - 1	GAL/JOINT
8' DIA. - 2	GAL/JOINT
10' DIA. - 2	GAL/JOINT

SEALANT APPLICATION

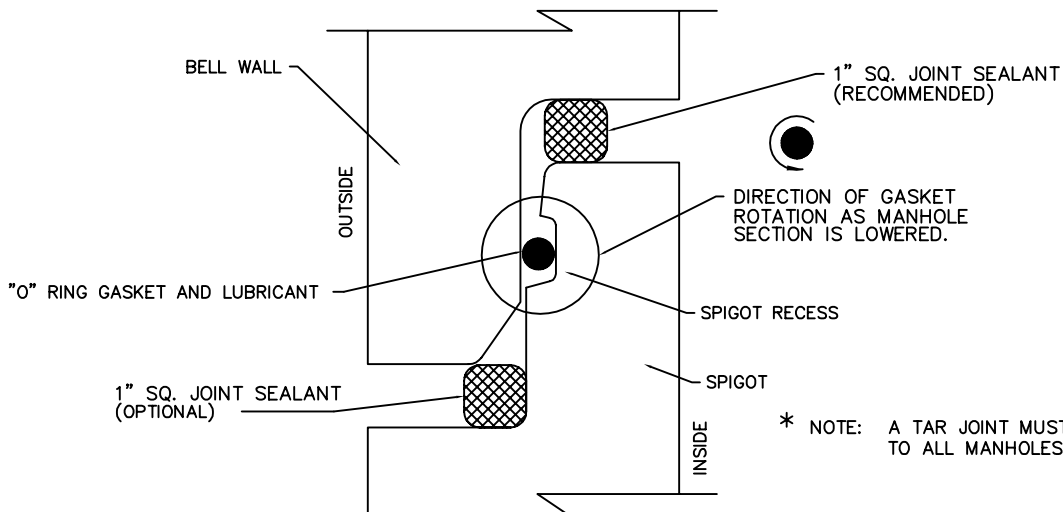
4' DIA. - 1	STRIP
5' DIA. - 1.5	STRIPS
6' DIA. - 2	STRIPS
8' DIA. - 2	STRIPS
10' DIA. - 2.5	STRIPS

PER POINT OF APPLICATION.
(MANUFACTURER RECOMMENDS
TWO APPLICATION POINTS PER
JOINT AS SHOWN IN DETAIL.)

MANHOLE SECTIONS SHALL BE INSTALLED AS FOLLOWS:

1. CLEAN OUTSIDE OF MANHOLE SURFACE SPIGOT OF ALL FOREIGN MATERIAL & CHECK FOR IMPERFECTIONS WHICH MAY RESTRICT "O" RING ROTATION.
2. LUBRICATE MANHOLE SPIGOT LIBERALLY BEFORE "O" RING IS INSTALLED.
3. LUBRICATE "O" RING BEFORE INSTALLING INTO SPIGOT RECESS.
4. STRETCH "O" RING GASKET INTO SPIGOT RECESS & EQUALIZE THE MATERIAL BY INSERTING A SCREWDRIVER OR SIMILAR TOOL UNDER THE GASKET, TRAVELING THE TOTAL MANHOLE CIRCUMFERENCE. (MAKE CERTAIN "O" RING GASKET IS HELD AT THE TOP OF SPIGOT RECESS.)
5. CLEAN & LUBRICATE THOROUGHLY INSIDE SURFACE OF BELL.
6. ALIGN SPIGOT & BELL AND COUPLE MANHOLE SECTIONS.
 - a) MANHOLE SECTIONS SHOULD BE INSTALLED WITH PROPER LIFTING APPARATUS, STRONGBACK OR EQUAL, SUCH THAT MANHOLE SECTIONS WILL HANG FREE & LEVEL.
 - b) SECTIONS SHOULD BE LOWERED TO A POINT WHERE TAPER OF INSIDE BELL IS IN CONTACT WITH "O" RING THE TOTAL CIRCUMFERENCE OF MANHOLE SECTION.
 - c) LOWER SECTION EVENLY UNTIL SECTIONS SEAT.

MANHOLE INSTALLATION DYNAMICS



* NOTE: A TAR JOINT MUST BE APPLIED TO ALL MANHOLES.

MANHOLE WALL SECTION VIEW

"O" RING GASKET ACTUALLY SPINS AS TOP SECTION IS LOWERED. FOR THIS REASON LUBRICATION IS NECESSARY FOR SUCCESSFUL INSTALLATION. IF "O" RING GASKET IS RESTRICTED AND IS NOT ALLOWED TO SPIN FREELY, THIS WILL ULTIMATELY CAUSE THE GASKET TO PINCH, RESULTING WITH UNEQUAL PRESSURE UPON BELL WALL THUS CAUSING RUPTURE. RECOMMENDED LUBRICANT USAGE PER MANHOLE JOINT. SEE ABOVE CHART.

CAUTION: IN COLD WEATHER, GASKETS MUST BE KEPT IN A WARM ENVIRONMENT, OR THE COLD HARDENED GASKET WILL POSSIBLY CAUSE RUPTURING OF THE BELL WALL.



KISTNER CONCRETE PRODUCTS, INC.

SUPERIOR PRECAST PRODUCTS

MAIN SALES OFFICE

P.O. BOX 218 8713 READ ROAD EAST PEMBROKE, N.Y. 14056
716/894-2267 BUFFALO LINE 585/762-8216 EAST PEMBROKE LINE
585/762-8315 FAX

Web: www.kistner.com Email: sales@kistner.com.

Subject: *Sanitary and Storm Manhole Specifications*

The purpose of this letter is to request guidance from you regarding Municipal joint specifications for both sanitary and storm manholes. We have recently observed variation in plan details regarding manhole joints and gaskets. This variation has led to confusion with respect to current requirements as well as concern when comparing these requirements to national standards (ASTM).

We sometimes see sanitary manhole joint details having one joint requiring "*Waterstop RX or Approved Equivalent*" and another joint requiring "*Super 'O' Ring Joint and Gasket*". As an NPCA-certified manufacturing facility, Kistner endorses compliance with national standards and specifications ASTM C-478 and ASTM C-443. These standards mandate that manhole joints utilize rubber gaskets to prevent and/or eliminate infiltration and exfiltration. Joint details requiring compliance with these ASTM specifications ensure precast materials that meet national standards.

The purpose of the attached documentation is to provide a resource for your use in modifying manhole joint specifications to reflect the use of a rubber gasket as a requirement. It is our belief that referencing and enforcing ASTM C-478 and C-443 in manhole joint details will ensure that the owner will receive precast products from responsible producers that greatly reduce and/or eliminate long-term infiltration and exfiltration costs. As we are sure you are well aware, processing infiltrated ground water through a waste water treatment system can become quite costly in both processing and maintenance costs.

Please be advised we are available to discuss efforts Kistner Concrete Products, Inc. has made which enable us to provide our customers with precast products of the highest quality and function. Please contact us directly at (585) 762-8612 should you have any questions or require further information.

Regards,

KCP