A-LOK PRODUCTS, INC.

The Company With Connections®

PIPE TO MANHOLE CONNECTOR FOR SANITARY SYSTEMS

Z•LOK Cast In Boot Connector

Z•LOK Pipe to Manhole Connector

The **Z•LOK Pipe to Manhole Connector** is a flexible connector specifically engineered to produce a positive watertight seal for pipes entering precast concrete structures and the structure itself. Its heavier wall is designed to provide the highest performance. The **Z•LOK CONNECTOR** is manufactured to meet or exceed the requirements set forth in ASTM C-923 titled "Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals".

MATERIAL

The **Z•LOK CONNECTOR** is molded from an EPDM compound engineered to conform with the requirements of section 4.1.1 of ASTM C-923. Alternative compounds are available for unusual applications upon special order.

All stainless steel hardware is in compliance with section 4.2, "Mechanical Devices" of ASTM C-923 and C-1644.

KEY ADVANTAGES

The **Z•LOK CONNECTOR** assures a positive watertight connection and provides up to 25° of omnidirectional deflection and 1.50" of vertical or horizontal movement without loss of seal, providing greater flexibility in the design and installation of pipelines and structures. These design features of the **Z•LOK CONNECTOR** prevent infiltration due to shear caused by settlement or ground movement.

The inner rubber O-ring design eliminates rubber wrinkling, compensates for pipe irregularity and wall thickness insuring a watertight seal.

The unique bi-directional design, permits the **Z•LOK CONNECTOR** take-down clamp to be fastened from either the inside or outside of the structure. Once fastened, immediate backfilling is possible enhancing project safety and overcomes the normal problems encountered with water, running sand and other unstable trench conditions.

When casting the **Z•LOK CONNECTOR** into the structure, making it an integral part of the wall, 50% of the opportunity for infiltration is eliminated.

PRODUCT REFERENCES

A.) ASTM C-923
Resilient Connector Between Reinforced Concrete Manholes Structures, Pipe and Laterals.

B.) ASTM C-1244
Standard Test Method For Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test

C.) ASTM C-478
Standard Specification for Precast Reinforced Concrete Manhole Sections

D.) ASTM C-1644
Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes

PERFORMANCE STANDARD

The **Z•LOK CONNECTOR** meets or exceeds all material and test requirements of ASTM C-923-00 and ASTM C-1644.

See following chart:

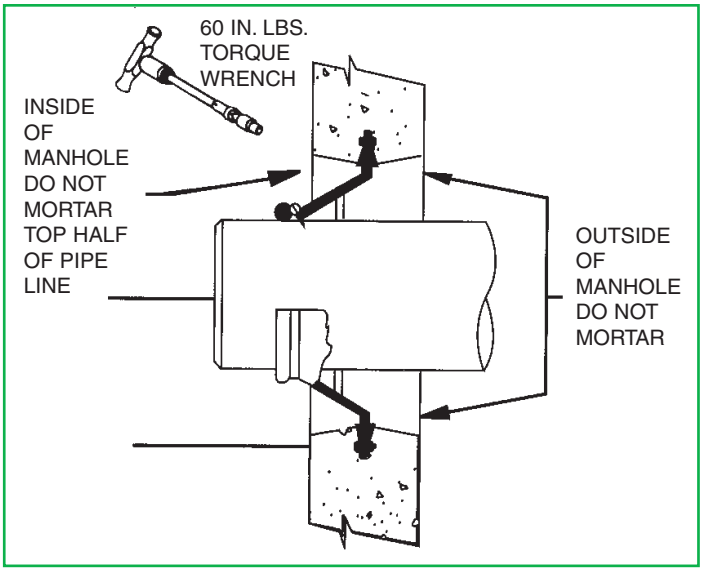
RESILIENT TEST REQUIREMENTS OF A.S.T.M. C-923

TEST	RESULTS	ASTM METHOD
Chemical resistance 1 N Sulfuric acid 1 N Hydrochloric Acid	 no weight loss no weight loss	at 22°C for 48h
Tensile strength	1200 psi or 8.5 MPa, min	D 412
Elongation at break	350% min.	
Hardness	±5 from mfg's. specified hardness	D 2240 (Shore A durometer)
Accelerated oven-aging	decr. of 15%, max. of original tensile strength, decr. of 20% max. of elongation	D 573, 70±1°C for 7 days
Compression set	decr. of 25%, max. of original deflection	D 395, Method B, at 70°C for 22h
Water absorption	increase of 10%, max. of original by weight	D 471, immerse 0.75 by 2-in. or 19 by 25-mm Specimen in distilled water at 70°C for 48h
Ozone resistance	rating 0	D 1171
Low-temp brittle point	no fracture at -40°C	D 746
Tear resistance	200 lbf/in. or 34 kn/m	D 624, Method B

PART 6 • DIMENSIONAL DATA

Z-LOK RING NO.	PIPE O.D. MIN.	INCHES MAX.	CLAMP NUMBER	PIPE O.D. MIN. (mm)	MM MAX.
C107-1	1.25″	1.75″	CL-040	31.75	44.45
C107-2	2.00″	2.50″	CL-040	50.8	63.5
C107-3	2.75″	3.75″	CL-088	69.85	95.25
C107-4	4.25″	6.25″	CL-088	107.95	158.75
C107-6	6.25″	8.25″	CL-128	158.75	209.55
F208-8	8.25″	8.625″	CL-188	209.55	219.075
C107-8	8.25″	10.25″	CL-188	209.55	260.35
C107-10	10.25″	12.25″	CL-188	260.35	311.15
C107-12	12.25″	14.25″	CL-248	311.15	361.95
C107-15	14.25″	16.00″	CL-EV15-18-L	361.95	406.4
C107-16	16.25″	18.00″	CL-EV15-18-L	412.75	457.2
C107-18	18.25"	21.25"	CL-EV15-18-L	463.55	539.75

NOTE:
- F208-8 GASKET CAN BE USED ON C107-6 MANDREL
- WHEN ORDERING CLAMPS, PIPE OD'S ARE REQUIRED
- C107-1 AND C107-2 USE THE SAME MANDREL
- C107-16 AND C107-18 USE THE SAME MANDREL
- REDI-LOK CLAMP IS REQUIRED FOR C107-15 THROUGH C107-18 GASKETS



WARNING: To ensure the **Z-LOK Connector** remains a flexible watertight connector, it is A•LOK Products, Inc. strong recommendation that **no mortar** be placed between the pipe and wall of the concrete structure. The use of mortar in this area would decrease the effectiveness of the connector to compensate for shear caused by settlement or ground movement.

NOTE: The 60 in.-lb. Torque Wrench is available through A•LOK Products, Inc.

CAUTION: When installing pipe stubs for future pipeline installation, all stubs must be properly restrained to prevent any movement by means other than the Z-LOK Connector.

ANY QUESTIONS REGARDING Z-LOK CONNECTOR, PLEASE CALL 1-800-822-2565

PRODUCT SPECIFICATIONS

A flexible pipe to manhole connector shall be used whenever a pipe penetrates into a precast concrete manhole or structure.

The connector shall be the **Z•LOK CONNECTOR** as manufactured by **A•LOK PRODUCTS, INC.**, Tullytown, PA, or approved equal.

The design of the connector shall provide a flexible, watertight seal between the pipe and concrete structure. The connector shall assure that a seal is made between:

(1) The connector and the structure wall by casting the connector integrally with the structure wall during the manufacturing process in a manner that it will not pull out during pipe coupling.

(2) The seal between the connector and the pipe shall be made by compressing the connector against the outside circumference of the pipe by means of a stainless steel take-down band.

The connector shall be made from materials that conform to the physical and chemical requirements outlined in Section 4, *"Materials and Manufacture"* of ASTM C-923 *"Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals"*, and the overall design will meet or exceed Section 7, *"Test Methods and Requirements"* of ASTM C-923.

The connector shall be sized specifically for the type of pipe being used and shall be installed in accordance with the recommendations of the manufacturer.

INSTALLATION INSTRUCTIONS

Experience has shown that successful performance of this product depends on proper plant installation, as well as the backfill and the care in the field installation of the manhole or wastewater structure and connecting pipes.

Z-LOK CONNECTOR – INWARD POSITION

STEP 1:
Bevel pipe.
Clean connector.
Clean pipe of dirt & debris.

INSIDE Z-LOK CONNECTOR INSTALLATION

STEP 2:
Center pipe in connector and push through.

STEP 3:
Attach proper size clamp beside o-ring then center pipe in connector and **VERY IMPORTANT** tighten clamp with torque wrench to 60 inch pounds.

OUTSIDE INSTALLATION

STEP 4:
When installing a Z-LOK connector in the outside the manhole position pull pipe back out after inserting so the connector flips outward, then **VERY IMPORTANT** - center pipe in connector and tighten the take down clamp to 60 inch pounds with a torque wrench.

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