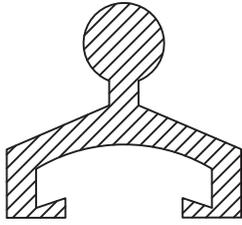




# Star Seal™ Compression Connector





The **Star Seal™ Compression Connector** produces a watertight seal between pipes entering a precast concrete structure. The **Star Seal™ Connector** is installed during the concrete pouring process **utilizing Vertex supplied Holding Rings** designed for  $\pm.250"$  off nominal OD roundness, and becomes an integral component of the concrete structure without requiring any coring or placement after the base component is cast. When the pipe is inserted, the gasket is compressed which provides primary and secondary sealing functions.

Designed to meet or exceed all requirements outlined in ASTM C-923 and C-1478, the **Star Seal™ Connector** can be used in all stormwater and wastewater applications including manholes, catch basins, pump and lift stations, wet wells, treatment plants, septic tanks and more.

Occasionally during installation or after extended usage, even if ASTM standards have been met under the prescribed test conditions, the pipe could become out-of-round, shift within the opening, or bottom out due to backfilling, ground settlements, overhead traffic and similar transverse loads on the pipe. The **Star Seal™ Connector** provides accommodations by providing a primary seal at the narrowest clearance between the pipe and the connector wall while offering a secondary sealing function on the opposite side where the annular space widens, allowing the gasket to relax thereby aiding the watertight seal.

## Product References

### ASTM C-923

Resilient Connector Between Reinforced Concrete Manhole Structures, Pipes and Laterals.

### ASTM C-1244

Standard Test Method For Concrete Sewer Manholes by the Negative Air Pressure (Vacu-um) Test.

### ASTM C-478C

Standard Specification for Precast Reinforced Concrete Manhole Sections.

### ASTM C-1478

Standard Specification for Storm Drain Resilient Connectors Between Reinforced Concrete Storm Sewer Structures, Pipes and Laterals.

## Key Advantages

- Can be used with all wastewater and stormwater applications
- Provides a primary and secondary sealing function
- Fast and easy installation
- Up to 20 degrees of omnidirectional deflection
- 20 degree tapered holding ring assures easy strip-out
- Compensates for movement after backfilling is complete

## Dimensional Data

Profile	Typical Pipe Size
4A6	4" - 6"
8T15	8" - 16"
15AA	18" +

## Performance Standard

The **Star Seal™ Connector** is molded or extruded from compounds formulated for wastewater applications, the standard rubber connector is engineered to conform with the requirements of section 4.1.1 of ASTM C-923 "Resilient Connector Between Reinforced Concrete Manhole Structures, Pipes and Laterals". Alternative compounds are available upon special request.

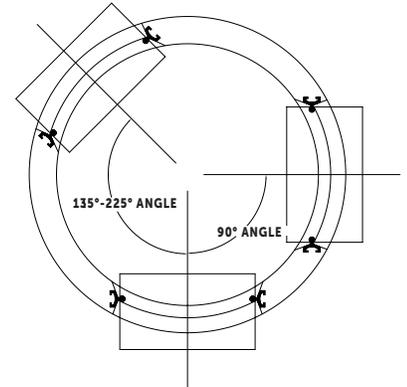
Test	Results	ASTM Method
Chemical Resistance 1 N Sulfuric Acid 1 N HCl Acid	No weight loss No weight loss	At 22° for 48h
Tensile Strength	1200 psi or 8.5 MPa, min	D 412
Elongation at Break	350% min.	
Hardness	+/- 5 from mfg's. specified hardness	D 2240
Accelerated Oven-aging	Decr. of 15% max. orig. tensile strength Decr. of 20% max. elongation	D 573
Compression set	Decr. of 25% original deflection	D 395, Method B
Water absorption	Incr. of 10% max. of original by weight	D 471
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

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## MAX. PIPE SIZE OD's $\pm.25"$

Manhole Diameter	135° - 225° Pipe Angle	90° Pipe Angle
42"	26.5"	22.0"
48"	31.5"	25.0"
60"	42.0"	32.0"
72"	52.5"	38.0"
84"	59.5"	44.0"
96"	73.5"	50.0"
108"	76.0"	56.0"
120"	85.0"	62.0"



## Installation Instructions

### Step 1:

Confirm pipe OD  $\pm.250"$ , surface is smooth, clean and free of foreign materials. Bevel any sharp edges of the pipe entry.

### Step 2:

Lubricate the connector and the entire section of the pipe that will be inserted into the connector.

### Step 3:

Center the pipe and connector square to each other and insert the pipe into the connector using a bar or back hoe depending on the size. Once the pipe is coupled with the connector, deflect the structure or pipe to achieve the proper angle.

### Warning:

To ensure the connector remains a flexible watertight connector, we recommend 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 of ground movement. When installing pipe stubs for future pipeline installation, all stubs must be mechanically restrained to prevent any movement by means other than and in addition to the resilient connectors.

### Note:

To find approximate subgrade, measure from the outside base of the structure to the junction of the connector and flat spot. Then add the wall thickness plus 1/4 inch.

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