

SAN ANTONIO WATER SYSTEM
San Antonio, Texas
Specification for Casing Insulators
Revised: December 2006

1. SCOPE

This product specification covers casing spacers for use in water supply service. Casing spacers are used to facilitate installing a water pipe inside a casing pipe or tunnel. Casing spacers shall consist of two or more segments of circular steel that bolt together forming a shell around the carrier pipe(s). Casing spacers should protect the carrier pipe and any protective coating or wrapping from damage during the installation, and properly support and electrically isolate the carrier pipe(s) within the casing or tunnel. On occasion multiple carrier pipes may be installed in one casing or tunnel.

2. GENERAL REQUIREMENTS

The San Antonio Water System (SAWS) reserves the right to limit the purchase of casing spacers from the manufacturers and to the models specified as shown in paragraph 4, providing such casing spacers conform to the provisions contained herein.

- a. Casing spacers shall be eight inches (8") long for carrier pipes up to 16-inch diameters and twelve inches (12") long for larger carrier pipe sizes. Manufacturer's approval in writing shall be required for installations exceeding 300 ft. in length, carrier pipes in excess of 48- inch diameter or multiple carrier pipes in one casing or tunnel.
- b. Casing spacers shall have a minimum 14-gauge steel band and 10 gauge steel riser when required. The band, risers and connecting studs shall be welded and cleaned at the factory before the application of a fluidized bed fusion bonded PVC coating. Stainless steel (type 304) casing spacer is an acceptable alternative.
- c. The fluidized bed fusion bonded PVC coating shall be between 10-16 mils thickness. The PVC coating shall provide good resistance to acids and alkali and excellent resistance under ASTM B117 salt spray tests. The coating shall have a minimum 1380volts/mil per ASTM D149-61 short time 0.010" test and a Durometer-shore A@ (10 sec) of 80 per ASTM D1706-61T. Epoxy coatings are not an acceptable alternative.

Casing Insulators
Specifications Number 05-31

- d. The spacers shall have a flexible PVC liner of 0.09-inch thickness with Durometer “A” 85-90 hardness and a minimum 58,000- volt dielectric strength (60,000-volt minimum Surge Test.) Moisture absorption shall not exceed 1%.
- e. The runners shall be of high pressure molded glass reinforced polyester with a minimum compressive strength of 18,000 psi per ASTM D695, flexural strength of 25, 300 psi per ASTM D790, tensile strength of 17,600 psi per ASTM D638 and Rockwell hardness (M) of 90 per ASTM D785. The riser shall be designed and fabricated to place the runner (skid) in full contact with the inside surface of the casing pipe. This evenly distributes the load force to all support members. The ends of all runners shall be shaped to resist hanging or sticking inside casing during installation of the carrier pipe. Polyethylene runners are not acceptable.
- f. Runners shall be a minimum of 1.0 inch in width and a minimum of 7 inches long for carrier pipes up to 16”, and a minimum of 2.0 inches in width and 11 inches long for larger carrier pipes. Bolts on runners are not acceptable. The runners shall be attached to the band or riser by 3/8 the wearing surface on the runner. The recess shall be filled with a corrosion inhibiting filler. There shall be four runners per casing spacer for carrier pipes up to 12” diameter, six runners for 14” through 36” and eight or more runners for carrier pipes over 36” diameter.
- g. The band section shall be bolted together with 5/16” cadmium-plated studs, nuts and washers. There shall be six sets per 8” long casing spacer and eight sets per 12” long spacer. Stainless steel casing spacers shall be furnished with stainless steel studs, nuts and washers.
- h. Casing spacers shall have ample riser height to limit vertical movement of the carrier pipe in the casing. A minimum of 1” to 2” clearance shall be provided between the top runner and the ID of the casing or tunnel.
- i. Continuous operating temperatures for the PVC Coated Casing Spacers should not exceed 150o F. Stainless steel casing shall be used in applications where continuous operating temperatures exceed 150o F.
- j. Unless noted otherwise, casing spacers shall be required on all carrier pipes installed in casing or tunnel applications.

Casing Insulators
Specifications Number 05-31

3. Quality Assurance

All casing spacers are to be manufactured in accordance to NACE International Recommend Practice RP 0286-97 (Isolation Spacers.) Each casing spacer shall be manufactured in the USA at a facility that has a Registered ISO 9002 Quality Management System or be in the process of achieving this certification by March 2005. Non-compliance to this registered commercial quality system requirement by March 2005 will result in removal of the manufacturer's product from paragraph 4 approved manufacturers.

If on receipt of casing spacers they are found to be non-compliant, the manufacturer shall replace the defective casing spacer with a casing spacer that meets the San Antonio Water System's specifications, at no charge to San Antonio Water System.

If San Antonio Water System audits, product inspection and performance data review in accordance to these specifications determine excessive casing spacer Noncompliance, the manufacturer will be subject to removal by the Products Standard Committee. Copy of the current ISO 9002 registration (or written documentation of being "in the process of achieving ISO registration," prior to March 2005) shall be provided with material submittal.

<u>Manufacturers</u>	<u>Locations</u>	<u>Model Numbers</u>
Pipeline Seal & Insulator, Inc.	Houston, TX	C8G-2 or SI8G-2
Pipeline Seal & Insulator, Inc.	Houston, TX	C12G-2 or SIIG-2
Advance Products & Systems, Inc.	Lafayette, LA	APS S18-2 APS SS18-2
Advance Products & Systems, Inc.	Lafayette, LA	APS S112-2 APS SS112-2
Advance Products & Systems, Inc.	Lafayette, LA	SI8M-2 SI12M-2 (Carbon Steel)

Casing Insulators
Specifications Number 05-31

<u>Manufacturers</u>	<u>Locations</u>	<u>Model Numbers</u>
Power Seal Pipeline Products, Inc.	Wichita Falls, TX	4810 SS (Stainless steel) 4810 CS (Carbon steel)
J-Four Pipeline Products Inc	Broken Arrow, Ok	M59 CS/SS M63 CS/SS
CCI Pipeline Systems	Breaux Bridge, La	CSC 8" & 12" Wide CSS 8" & 12" Wide End Seals