

SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
SPECIFICATIONS FOR TAPPING SLEEVES
(4" and Larger Nominal Pipe Diameter)
REVISED MARCH 2004

1. **SCOPE**

These specifications cover-tapping sleeves installed on pipe from 4" and larger nominal pipe diameter.

2. **GENERAL REQUIREMENTS**

The band shall conform to the minimum OD size ranges and lengths specified in paragraph 3. The Flange shall be manufactured in compliance with AWWA C207, Class D ANSI B.16.1 drilling, recessed for tapping valve MSS-SP60. Or Mechanical Joint tapping sleeve outlet shall meet or exceed all material specifications as listed below and be suitable for use with standard mechanical joint x mechanical joint resilient wedge gate valves per ANSI/AWWA C509-94.

A. Tapping sleeves from 4" through 12" nominal pipe diameter shall meet the following minimum requirements.

1. The entire fitting shall be stainless steel type 304 (18-8). The body, lug, and gasket armor plate shall be in compliance with ASTM A240. The Flange shall be cast stainless steel in compliance with ASTM A743. The MJ outlet shall be one-piece casting made of stainless steel. The test plug shall be 3/4" NPT in compliance with ANSI B2.1 and shall be lubricated or coated to prevent galling. All metal surfaces shall be passivated after fabrication in compliance with ASTM A-380.
2. The gasket shall provide a 360-sealing surface of such size and shape to provide and adequate compressive force against the pipe after assembly, to affect a positive seal under the combinations of joint and gasket tolerances. The materials used shall be vulcanized natural or vulcanized synthetic rubber with antioxidant and antiozinant ingredients to resist set after installation. No reclaimed rubber shall be used. A heavy-gauge-type 304-stainless armor plate shall be vulcanized into the gasket to span the lug area.

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3. The lugs shall be heliarc welded (GMAW) to the shell. The lug shall have a pass-through-bolt design to avoid alignment problems and allow tightening from either side of the main. Bolts shall NOT BE integrally welded to the sleeve. Finger Lug designs are not approved; it is the intent of these specifications to allow a tapping sleeve that has a lug design similar to the approved models.
 4. Bolts and nuts shall be type 304 (18-8) stainless steel and lubricated or Teflon coated to prevent galling or seizing. Bent or damaged unite will be rejected.
 5. Quality control procedures shall be employed to insure that the shell, Lug, (4" and Larger Nominal Pipe Diameter) armor plate, gasket and related hardware are manufactured to be free of any visible defects. Each unit, after proper installation, shall have a working-pressure rating up to 200 psi, and a test pressure of 250 psi.
 6. The sleeve construction shall provide a positive means of preventing gasket cold flow and/or extrusion.
 7. Each sleeve shall be stenciled, coded or marked in a satisfactory manner to identify the size range. The markings shall be permanent type, water resistant, that will not smear or become illegible.
- B. Tapping sleeves from 16" and larger nominal pipe diameter shall meet the following minimum requirements:
1. The body shall be in compliance with ASTM A285, Grade C or ASTM A36. The test plug shall be 3/4" NPT conforming to ANSI B2.1.
 2. The gasket shall provide a watertight sealing surface of such size and shape to provide an adequate compressive force against the pipe. After assembly, the gasket will insure a positive seal under all combinations of joint and gasket tolerances. Gaskets shall be formed from vulcanized natural or vulcanized synthetic rubber with antioxidant ingredients to resist set after installation. No reclaimed rubber shall be used.

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3. Bolts and nuts shall be high strength, corrosion resistant, low alloy, pre AWWA C111, ANSI A21.11.
4. Quality control procedures shall be employed to insure that the shell, gaskets, and related hardware area are manufactured to be free of visible defects. Each unit, after proper installation, shall have a working-pressure rating up to 150 psi and a maximum test pressure of 200 psi.
5. Unless otherwise noted, unit shall be protected by fusion Epoxy 8-10 mil line and cost process per AWWA C213.
6. Units for concrete, steel cylinder pipe shall be furnished with load bearing setscrews on the gland flange to transfer loads on the outlet away from the steel cylinder and onto the sleeve. Epoxy –coated tapping sleeves do not require grout seal cavity (AWWA M-9 Manual).
7. Each Sleeve shall be stenciled, coded or marked in a satisfactory manner to identify the size range. The marking shall be permanent type, water resistant, that will not smear or become illegible.

3. **STANDARD RANGES: (4" – 30" NOMINAL PIPE DIAMETER)**

<u>Nominal Dia.x Min Length</u>	<u>Flg. Outlet</u>	<u>Range</u>	<u>Minimum OD Range**</u>
4" x 16"	4"	A	4.75" – 4.95"
		B	4.90" – 5.10"
6" x 16"	4"	A	6.70" – 7.10"
		B	7.00" – 7.40"
		C	7.35" – 7.75"
6" x 16"	6"	A	6.80" – 7.15"
		B	7.05" – 7.40"
		C	7.40" – 7.75"

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STANDARD RANGES: (continued)

<u>Nominal Dia.x Min Length</u>	<u>Flg. Outlet</u>	<u>Range</u>	<u>Minimum OD Range**</u>
8" x 16"	4" & 6"	A	9.00" – 9.45"
		B	9.35" – 9.70"
		C	9.70" – 10.10"
8" x 20"	8"	A	9.00" – 9.35"
		B	9.35" – 9.70"
		C	9.70" – 10.00"
10" x 16" 10" x 20" 10" x 24"	4" & 6"	A	11.03" – 11.47"
	8"	B	11.60" – 12.00"
	10"		
12" x 16" 12" x 20" 12" x 24" 12" x 32"	4" & 6"	A	13.00" – 13.40"
	8"	B	13.40" – 13.80"
	10"	C	14.10" – 14.50"
	12"		
16" x 12" 16" x 16" 16" x 20" 16" x 24" 16" x 36"	4" & 6"		17.33" – 17.87"
	8"		18.62" – 19.19"
	10"		
	12"		
	16"*		
20" x 12" 20" x 16" 20" x 20" 20" x 24" 20" x 36" 20" x 40"	4" & 6"	A	21.51" – 22.15"
	8"	B	23.46" – 24.16"
	10"		
	12"		
	16"*		
	20"*		

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STANDARD RANGES: (continued)

<u>Nominal Dia.x Min Length</u>	<u>Flg. Outlet</u>	<u>Range</u>	<u>Minimum OD Range**</u>
24" x 12"	4" & 6"	A	25.71" – 26.41"
24" x 16"	8"	B	28.14" – 28.84"
24" x 20"	10"		
24" x 24"	12"		
24" x 36"	16"*		
24" x 40"	20"*		
24" x 48"	24"*		
30" x 12"	4" & 6"	A	29.78" – 30.48"
30" x 16"	8"	B	31.52" – 32.22"
30" x 20"	10"		
30" x 24"	12"		
30" x 36"	16"*		
30" x 48"	20"*		
30" x 48"	24" x 30"*		

* Range to be specified on order.

** Ranges may be broadened, but not narrowed. For concrete steel cylinder pipe, the OD of the pipe and cylinder shall be supplied with the order.

4. For pipe larger than 30" nominal diameter, tapping sleeves shall be custom-fabricated to fit non-standard ranges, in conformance with the intent of these specifications.
5. The San Antonio Water System may, at no cost to the manufacturer, subject random units to testing by an independent laboratory for compliance with these standards. Any visible defect or failure to meet the quality standards herein will be ground for rejecting the entire order.
6. The attached qualified products list identifies specific manufactured items by catalog number that are approved.

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Approved Manufacturers

4" – 12"

Models

JCM Industries

#432

PowerSeal

#3490AS or 3490MJSS

Cascade

CST-1

Ford Meter Box

FTSS

Romac Industries

SST III

Dresser

Style 610/630

16" and larger

Smith-Blair

#622

JCM Industries

#412

Romac Industries

SST III

Ford Meter Box

FTS

PowerSeal

3490MJSS

Dresser

Style 610/630

Previous Specification Date:

March 2002