



PRODUCT SUBMITTALS FOR:

**VK KNOWLTON
WINDING CREEK RANCH UNIT 7**

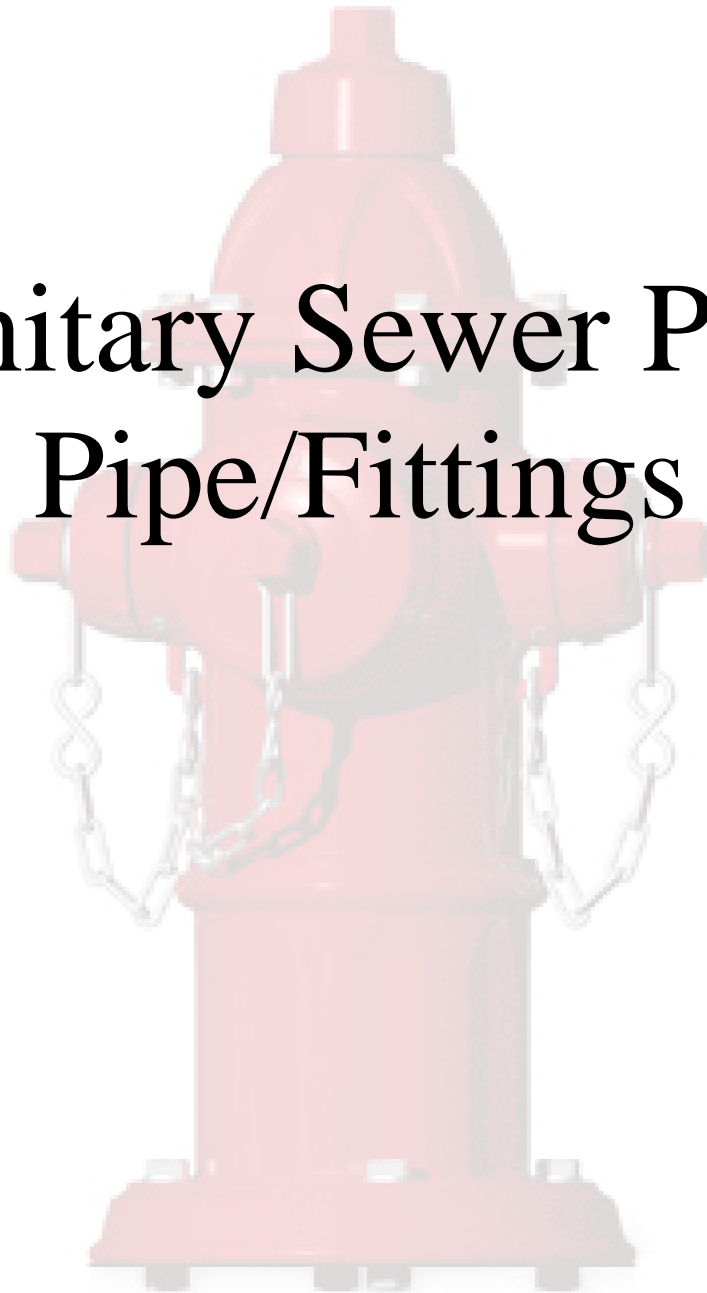


**TECHLINE PIPE
8160 WHISPER OAK SUITE 1
GARDEN RIDGE, TX 78266
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18864 FM2252
Garden Ridge, TX 78266
210.278.9670

Sanitary Sewer PVC Pipe/Fittings



D3034 & F679 SEWER SPECIFICATION DATA

Diamond gravity sewer pipe 4 inches through 60 inches shall be made of compounds conforming to material requirements of ASTM D3034 and ASTM F679 in accordance with ASTM D1784. Diamond PVC Sewer Pipe meets all the dimensional, chemical, and physical requirements as outlined in ASTM D3034 and ASTM F679. A listing to CSA B182.2 is available for most of these sizes. A complete listing by manufacturing plant is available upon request.

The pipe sizes 4 inches through 60 inches are made with an integral bell "water-tight" joint that meets the requirements of ASTM D3212 and that utilizes a Rieber gasket system for sealing that meets the requirements of ASTM F477.

Each male end shall be beveled to facilitate joining and referencing marked for proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

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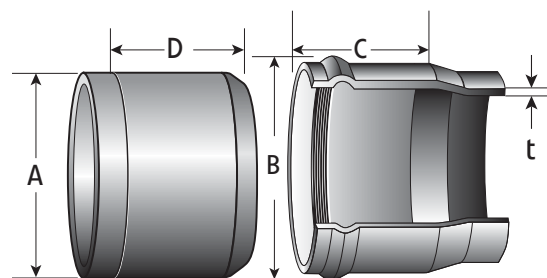
PHYSICAL PROPERTIES OF ASTM D3034 & F679

Property	ASTM TEST	Minimum 12454/12364
PIPE MATERIALS: PIPE SHALL BE MADE OF PVC PLASTIC HAVING A MINIMUM CELL CLASSIFICATION OF 12454 OR 12364 AS DEFINED IN SPECIFICATION D1784.		
Specific Gravity	D792	1.40/1.40
Tensile Strength, psi	D638	7,000/6,000
Tensile Modulus, psi	D638	400,000/500,000
IZOD Impact Strength,	D256	.65ft., lb./in.

SHORT FORM Specification for Diamond PVC Solid-Wall Sewer Pipe SDR 26 or SDR 35 or PS 46 or PS 115

All PVC Solid-Wall Sewer Pipe shall be made of compounds conforming to ASTM D1784 manufactured in accordance with the material requirements of ASTM D3034 or ASTM F679. All PVC Sewer Pipe must meet dimensional, chemical, and physical requirements as outlined in ASTM D3034 or ASTM F679. Joints shall meet the requirements of ASTM D3212 and shall be formed using Rieber Technology. PVC Sewer Pipe shall be installed according to the requirements of ASTM D2321, Uni-Bell's Uni-Pub 6 and the manufacturer's recommendations.

RIEBER JOINT ILLUSTRATION



SANI-21™

D3034 & F679 SEWER SPECIFICATION DATA

Nominal Pipe Size in. (mm)	A Outside Diameter Inches	B Bell Socket Diameter Inches	C Socket Depth Inches	D Insert Mark Inches	t Min. Wall Thickness SDR26/PS115 Inches	t Min. Wall Thickness SDR35/PS46 Inches
D-3034 PIPE DIMENSIONS						
4" (100)	4.215	5-1/4	4-5/8"	4"	0.162	0.120
6" (150)	6.275	7-1/2	4-3/4"	4-1/8"	0.241	0.180
8" (200)	8.400	9-7/8	6-1/8"	4-7/8"	0.323	0.240
10" (250)	10.500	12-3/8	6-3/4"	5-1/4"	0.404	0.300
12" (300)	12.500	14-5/8	7-1/4"	5-1/2"	0.481	0.360
15" (375)	15.300	18	7-1/4"	4-5/8"	0.588	0.437
F-679 PIPE DIMENSIONS						
18" (450)	18.701	21-3/4"	9-1/2"	7-3/4"	0.671	0.499
21" (525)	22.047	25-1/2"	10"	8-1/2"	0.791	0.588
24" (600)	24.803	28-3/4"	11"	10"	0.889	0.661
27" (675)	27.953	32-1/2"	13-1/4"	11-1/8"	1.002	0.745
30" ciod (750)	32.000	37-1/4"	14"	13-5/8"	1.148	0.853
36" ciod (900)	38.300	43-1/4"	15"	13-7/8"	1.373	1.021
42" ciod (1050)	44.500	53"	18"	16-3/4"	1.596	1.187
48" ciod (1200)	50.800	60"	18"	16-7/8"	1.822	1.355
54" ciod (1350)	57.560	67"	22"	14"	2.064	1.535
60" ciod (1500)	61.610	72"	23"	18"	2.210	1.643

SANI-21™

LOADING ASTM D3034 & F679 LOADING CHART (SDR35 / PS46)

Nominal Pipe Size in. (mm)	Outside Diameter Inches	Bundle Quantity	*Feet Per Truckload	
			14'	20'
SDR35/PS46				
4" (100)	4.215	69	23,184	24,288
6" (150)	6.275	24/32	10,080	11,264
8" (200)	8.400	18/24	5544/6048	5808/6336
10" (250)	10.500	12/15	3402	3564
12" (300)	12.500	16	2688	2816
15" (375)	15.300	6	1512	1584
18" (450)	18.701	2/3/4/6	1050	1100
21" (525)	22.047	4	672	704
24" (600)	24.803	4	504/672	704
27" (675)	27.953	3	378	
30" (750)	32.000	3	378/252	
36" (900)	38.300	2	168	
42" (1050)	44.500	2	168	
48" (1200)	50.800	1	84	
54" (1350)	57.560	1	42	
60" (1500)	61.610	1	42	

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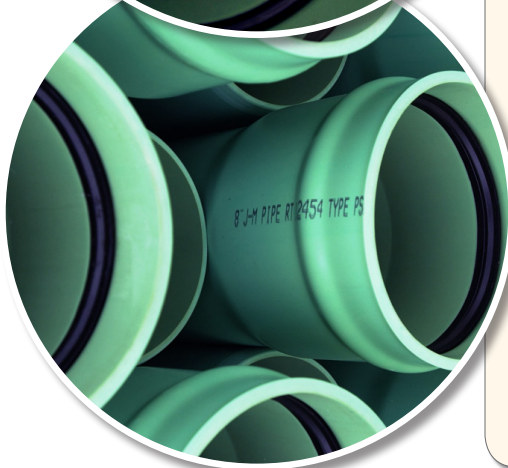
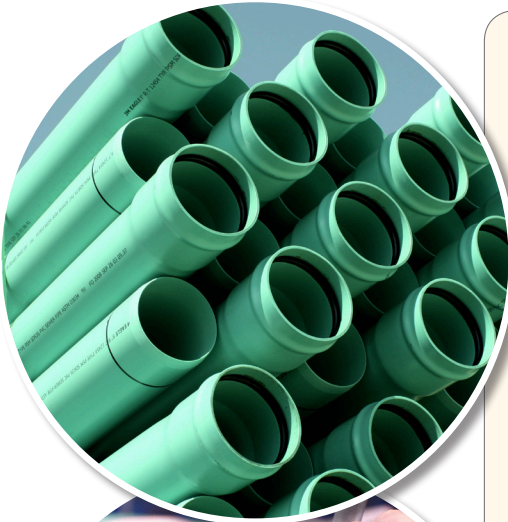
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GRAVITY SEWER

MEETS ASTM D3034 AND F679.



APPLICATIONS

JM Eagle's Ring-Tite PVC Gravity Sewer pipe is suitable for conveying domestic sanitary sewage, as well as certain industrial wastes.

DESCRIPTION

JM Eagle's Gravity Sewer pipe ASTM D3034 is available in SDR 35 and SDR 26 in 4- to 15-inch diameters and ASTM F679 is available in PS 46 and PS 115 in 18- to 48-inch diameters. It comes in 14- and 20-foot lengths.

The pipe can be directed to most existing sewer equipment. It can also be connected to IPS cast- or ductile-iron fittings with the appropriate adapters and/or transition gaskets.

JM Eagle Gravity Sewer pipe comes with Ring-Tite joints with locked-in gaskets. Joints meet or exceed ASTM D3212 for joint tightness, including a 22-inch Hg vacuum and a 25-foot head pressure test.

BENEFITS

JM Eagle's Ring-Tite Gravity Sewer pipe features an improved design for reserve strength and stiffness to increase load-bearing capacity, maximizing sewer system capacity at a reasonable cost.

- It is unaffected by the fluids found in ordinary domestic sewage; sewer gases and the sulfuring acid generated by the completion of the hydrogen sulfide cycle; and corrosive soils both alkaline and acidic.
- Maintains performance against tuberculation, corrosion and external galvanic soil conditions without lining wrapping, coating or cathodic protection.
- It resists abrasion, gouging and scouring far better than most common piping materials.
- Its interiors stay smooth over long years of service while maximizing system capacity, allowing for savings in pumping costs, as well as savings on the size of the pipe required.
- The light weight of the pipe reduces manpower required for installation.
- It can be field-cut with a power saw or ordinary handsaw and be beveled without the use of expensive or complicated machinery.
- Gasketed tee and wye saddles for tapping into previously installed PVC sewer lines eliminate the need for field solvent welding.

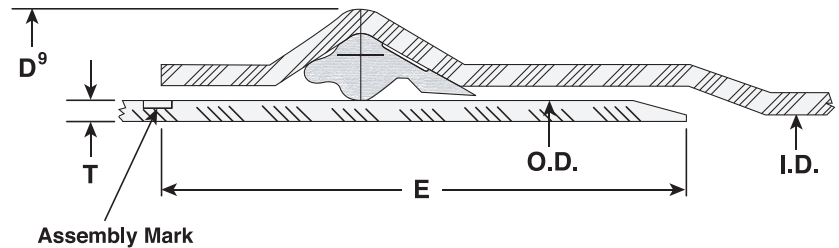
GRAVITY SEWER

SUBMITTAL AND DATA SHEET

JM EAGLE'S RING-TITE JOINT OFFERS ADDITIONAL BENEFITS.

- Seated in a deep groove, the flexible elastomeric Rieber gasket provides a tight seal that protects the line from shock, vibration and earth movement, and compensates for expansion and contraction of the pipe lengths.
- Quick and easy to assemble with a simple push, there's no field mixing or application of cement.
- The joint remains tight under normal operating conditions.

PIPE SIZE (IN)	AVERAGE O.D.(IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D° (IN)	APPROX. WEIGHT (LBS/FT)
SDR 35 (PS46) ASTM D3034						
4	4.215	3.975	0.120	3.50	4.695	1.05
6	6.275	5.915	0.180	4.25	6.995	2.36
8	8.400	7.920	0.240	4.75	9.360	4.24
10	10.500	9.900	0.300	6.00	11.700	6.64
12	12.500	11.780	0.360	6.25	13.940	9.50
15	15.300	14.426	0.437	7.25	17.048	14.19
SDR 26 (PS115) ASTM D3034						
4	4.215	3.891	0.162	3.50	4.863	1.40
6	6.275	5.793	0.241	4.25	7.239	3.11
8	8.400	7.754	0.323	4.75	9.692	5.63
10	10.500	9.692	0.404	6.00	12.116	8.84
12	12.500	11.538	0.481	6.25	14.424	12.56
15	15.300	14.124	0.588	7.25	17.652	18.90
PS46, ASTM F679						
18	18.701	17.629	0.499	8.00	20.845	21.43
21	22.047	20.783	0.588	9.50	24.575	29.88
24	24.803	23.381	0.661	9.60	27.647	38.96
27	27.953	26.351	0.745	10.10	31.157	49.47
30 CIOD	32.000	30.194	0.853	16.75	35.612	64.18
36 CIOD	38.300	36.042	1.021	19.02	42.816	93.00
42 CIOD	44.500	41.948	1.187	22.43	49.604	—
48 CIOD	50.800	47.888	1.355	24.78	56.624	—
PS115, ASTM F679						
18	18.701	17.261	0.671	8.00	21.581	28.49
21	22.047	20.349	0.791	9.50	25.443	—
24	24.803	22.891	0.889	9.60	28.627	—
27	27.953	25.799	1.002	10.10	32.261	—
30 CIOD	32.000	29.070	1.148	16.75	36.348	—
36 CIOD	38.300	35.464	1.373	19.02	45.438	—
42 CIOD	44.500	41.072	1.596	22.43	51.356	—
48 CIOD	50.800	46.886	1.822	24.78	58.628	—



I.D. : Inside Diameter

O.D. : Outside Diameter

T : Wall Thickness

D° : Bell Outside Diameter

E : Distance between Assembly Mark to the end of spigot.

Product Standard: ASTM 3034 (4"–15")
ASTM F679 (18"–48")

Pipe Compound: ASTM D1784 Cells Class 12454 or 12364

Gasket: ASTM F477

Integral Bell Joint: ASTM D3212

Pipe Stiffness: ASTM D2412 F/ΔY = 46 PSI or 115 PSI

Pipe Length: 14 or 20 feet laying length

Installation: ASTM D 2321
JM Eagle™ Installation Guide

ASTM D2241 IPS SPECIFICATION DATA

Diamond IPS pressure-rated PVC pipe is made of compounds conforming to material requirements of ASTM D2241 in accordance with ASTM D1784. Pipe sizes (1 1/2" through 12") are made with an integral bell to utilize the Rieber gasket system for sealing, and meeting specifications defined in ASTM F477 which conforms to the requirements of ASTM D3139.

Diamond IPS pressure-rated PVC pipe meets all the dimensional, chemical, and physical requirements as outlined in ASTM D2241. Potable water pipe carries the mark of NSF, International in accordance with Standard 61. Some factory locations produce IPS pressure pipe bearing the mark of NSF-14.

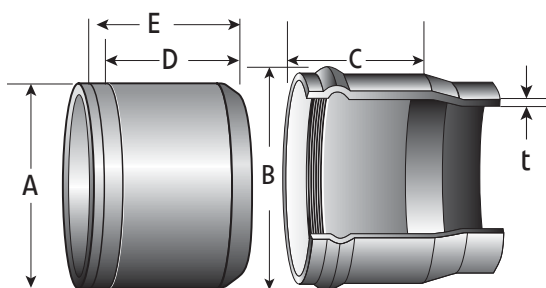
Each male end shall be beveled to facilitate joining and reference marked to insure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

D2241

PHYSICAL PROPERTIES OF PVC 12454:

Property	ASTM Test	Minimum
Specific Gravity	D792	1.40
Tensile Strength, psi	D638	7,000
Tensile Modulus, psi	D638	400,000
IZOD Impact Strength	D256	.65ft., lb./in.

RIEBER JOINT ILLUSTRATION



SHORT FORM Specification for Diamond PVC Water Pipe

Diamond PVC Water Pipe shall be made of compounds conforming to ASTM D1784 with a cell classification of 12454. Diamond PVC Water Pipe must meet all the dimensional, chemical, and physical requirements as outlined in ASTM D2241 and will be supplied in 20 and 22 foot laying lengths. Joints shall be formed using Rieber Technology. Potable water pipe shall be manufactured from NSF listed ingredients.

ASTM D2241

SPECIFICATION DATA. DIAMOND IPS PRESSURE-RATED PIPE IS SUPPLIED IN 20 AND 22 FOOT LAYING LENGTHS.

Nominal Pipe Size in. (mm)	B Bell Socket Diameter Inches	C Approximate Bell Depth Inches	D Insert Mark 1 Inches *	E Insert Mark 2 Inches *
2" (50)	3-1/8"	4"	2-3/4"	3-3/4"
2.5" (62.5)	4-3/8"	5"	2"	3"
3" (75)	4-7/16"	4-1/2"	3-5/8"	4-5/8"
4" (100)	5-1/2"	4-3/4"	4-1/4"	5-1/4"
6" (150)	8-1/4"	5-1/2"	4-3/4"	5-3/4"
8" (200)	10-1/4"	6"	4-7/8"	5-7/8"
10" (250)	12-7/8"	6-1/2"	5-1/2"	6-1/2"
12" (300)	15-1/8"	7"	5-7/8"	6-7/8"

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ASTM D2241
SPECIFICATION DATA

Nominal Pipe Size in. (mm)	A Outside Diameter Inches	t SDR 13.5 315 psi Inches	t SDR 17 250 psi Inches	t SDR 21 200 psi Inches	t SDR 26 160 psi Inches	t SDR 32.5 125 psi Inches	t SDR 41 100 psi Inches
MINIMUM WALL THICKNESS = (t)							
1.5" (37.5)	1.900	0.141	0.112	0.090			
2" (50)	2.375	0.176	0.140	0.113	0.091		
2.5" (62.5)	2.875	0.213	0.169	0.137	0.110		
3" (75)	3.500	0.259	0.206	0.167	0.135		
4" (100)	4.500	0.333	0.265	0.214	0.173	0.138	0.110
6" (150)	6.625	0.491	0.390	0.316	0.255	0.204	0.162
8" (200)	8.625		0.508	0.410	0.332	0.265	0.210
10" (250)	10.750		0.632	0.511	0.413	0.331	0.262
12" (300)	12.750		0.750	0.606	0.490	0.392	0.311

ASTM D2241
ASTM D2241 LOADING CHART

Nominal Pipe Size in. (mm)	Outside Diameter	Joints Per Bundle	Feet Per Bundle 20' laying lengths	*Feet Per Truckload 20' laying lengths	Feet Per Bundle 22' laying lengths	*Feet Per Truckload 22' laying lengths
SDR-41 PRESSURE RATING 100 PSI						
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-32.5 PRESSURE RATING 125 PSI						
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156
SDR-26 PRESSURE RATING 160 PSI						
2" (50)	2.375	215			4,730	75,680
2.5" (62.5)	2.875	131			2,882	46,112
3" (75)	3.500	88\95			1,936\2,090	32,208
4" (100)	4.500	63	1,260	20,160	1,386	22,176
6" (150)	6.625	35\40	560/640/700/800	8,400	770\880	9,240
8" (200)	8.625	20\24	300/360/400/480	4,840	440\528	5,324
10" (250)	10.750	12\15	240/300	3,240	264\330	3,564
12" (300)	12.750	9\12	120/160/180/240	1,960	198\264	2,156

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IPS PRESSURE/RING-TITE

MEETS ASTM D2241, ASTM D1784 CELL CLASS 12454; GASKETS MEET ASTM F477;
JOINTS MEET ASTM D3139.



APPLICATIONS

JM Eagle's IPS Pressure is pipe suitable for use in rural water, and agricultural and turf irrigation pipelines, as well as gravity sewer, force main and water reclamation projects.



DESCRIPTION

JM Eagle's IPS Pressure PVC pipe is available in 1 ½- to 12-inch diameters, in SDR 64 (63 psi), SDR 41 (100 psi), SDR 32.5 (125 psi), SDR 26 (160 psi), SDR 21 (200 psi) and SDR 17 (250 psi).

The standard laying length of IPS Pressure PVC water pipe is 20 feet. JM Eagle manufactures this pipe in blue for irrigation applications, purple for reclaimed water systems, and green for sewer force mains.

JM Eagle pipe comes with Ring-Tite joints. JM Eagle gaskets meet or exceed ASTM D3139 for joint tightness, including a 22-inch Hg vacuum for one hour, under deflection with no leakage.



BENEFITS

Due to its long laying lengths of 20 feet, IPS Pressure PVC water pipe reduces the cost of multiple joints and allows for more ground to be covered during installation. JM Eagle IPS Pressure pipe:

- Maintains performance against tuberculation, corrosion and external galvanic soil conditions without lining wrapping, coating or cathodic protection.
- Can be field-cut with a power saw or handsaw, eliminating the need to invest in costly cutting equipment.
- Maintains smooth interior over long years of service with virtually no loss in carrying capacity, allowing for savings in pumping costs, as well as savings on the size of the pipe required.



IPS PRESSURE/RING-TITE

SUBMITTAL AND DATA SHEET

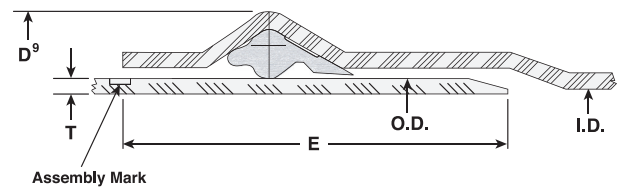
JM EAGLE'S RING-TITE JOINT OFFERS ADDITIONAL BENEFITS.

- Seated in a deep groove, the flexible elastomeric gasket provides a tight seal that protects the line from shock, vibration and earth movement, and compensates for expansion and contraction of the pipe lengths.
- Quick and easy to assemble with a simple push, there's no field mixing or application of cement.
- The joint remains tight under normal operating conditions.

PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D ⁹ (IN)	APPROX. WEIGHT (LBS/FT)
Rated 63 psi (SDR 64)						
6	6.625	6.40	0.104	5.50	7.20	1.60
8	8.625	8.33	0.135	6.25	9.30	2.40
10	10.750	10.39	0.168	6.75	11.50	3.80
12	12.750	12.32	0.199	8.00	13.80	5.30
Rated 100 psi (SDR 41)*						
3	3.500	3.320	0.085	4.20	3.84	—
4	4.500	4.267	0.110	4.50	4.94	1.03
5	5.563	5.27	0.136	4.65	6.10	1.60
6	6.625	6.282	0.162	5.20	7.27	2.23
8	8.625	8.180	0.210	5.90	9.47	3.75
10	10.750	10.195	0.262	6.70	11.80	5.86
12	12.750	12.091	0.311	8.10	13.99	8.28
Rated 125 psi (SDR 32.5)*						
1.5	1.900	1.773	0.060	3.45	2.14	—
2	2.375	2.220	0.073	3.70	2.67	—
2.5	2.875	2.688	0.088	3.95	3.23	—
3	3.500	3.271	0.108	4.20	3.93	0.77
4	4.500	4.207	0.138	4.50	5.05	1.28
5	5.563	5.200	0.171	4.65	6.25	2.00
6	6.625	6.193	0.204	5.20	7.44	2.79
8	8.625	8.063	0.265	5.90	9.69	4.70
10	10.750	10.048	0.331	6.70	12.07	7.35
12	12.750	11.919	0.392	8.10	14.32	10.36
Rated 160 psi (SDR 26)* (G) (P)						
1.5	1.900	1.745	0.073	3.45	2.19	0.28
2	2.375	2.182	0.091	3.70	2.74	0.44
2.5	2.875	2.642	0.110	3.50	3.32	0.64
3	3.500	3.214	0.135	4.10	4.04	0.95
4	4.500	4.133	0.173	4.50	5.19	1.58
5	5.563	5.109	0.214	4.65	6.42	2.40
6	6.625	6.084	0.255	5.20	7.65	3.44
8	8.625	7.921	0.332	5.90	9.95	5.85
10	10.750	9.874	0.413	6.70	12.40	9.12
12	12.750	11.711	0.490	8.10	14.71	12.89

PIPE SIZE (IN)	AVERAGE O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	MIN. E (IN)	APPROX. D ⁹ (IN)	APPROX. WEIGHT (LBS/FT)
Rated 200 psi (SDR 21)* (G) (P)						
1.5	1.900	1.709	0.090	3.45	2.26	0.44
2	2.375	2.135	0.113	3.70	2.83	0.54
2.5	2.875	2.585	0.137	3.95	3.42	0.79
3	3.500	3.146	0.167	4.20	4.17	1.17
4	4.500	4.046	0.214	4.50	5.36	1.93
6	6.625	5.955	0.316	5.20	7.89	4.23
8	8.625	7.754	0.410	5.90	10.27	7.18
10	10.750	9.667	0.511	6.70	12.79	11.20
12	12.750	11.465	0.606	8.10	15.17	15.82
Rated 250 psi (SDR 17)* (G) (P)						
1.5	1.900	1.641	0.112	3.45	2.39	0.58
2	2.375	2.078	0.140	3.70	2.94	0.66
2.5	2.875	2.517	0.169	3.95	3.55	—
3	3.500	3.063	0.206	4.20	4.32	1.42
4	4.500	3.938	0.265	4.50	5.56	2.36
6	6.625	5.803	0.390	5.20	8.19	5.11
8	8.625	7.553	0.508	5.90	10.66	8.69
10	10.750	9.410	0.632	6.70	13.28	13.55
12	12.750	11.160	0.750	8.10	15.75	19.20

* Prior to ordering or specifying, consult JM Eagle™ for product and/or listing availability.
 (G) Green pipe available in sizes 4"–12"
 (P) Purple pipe available in sizes 2"–12"



Product Standard: ASTM D2241
 Pipe Compound: ASTM D1784 Cells Class 12454
 Gasket: ASTM F477
 Integral Bell Joint: ASTM D3139
 Certifications: ANSI/NSF Standard 61
 Pipe Length: 20 feet laying length
 Installation: JM Eagle™ Installation Guide

I.D. : Inside Diameter
 O.D. : Outside Diameter
 T : Wall Thickness
 D⁹ : Bell Outside Diameter
 E : Distance between Assembly Mark to the end of spigot.



TRENCH TOUGH PLUS™

Heavy Wall SDR26

Gasketed Sewer Fittings

APPLICATIONS:

- Gravity Sewer Systems
- Stormwater and Drainage

SIZE RANGE:

Molded: 4" – 12" Fabricated: 12" – 24"

FEATURES:

- Compatibility with SDR35 and SDR26 sewer pipe.
- Gray gaskets for easy identification.
- Locked in gaskets on molded fittings.
- Comprehensive testing ensures joints withstand a minimum of 15 psi hydrostatic pressure and a -10.8 psi vacuum at 5% ring deflection.
- "Extra Heavy Wall" SDR24 thickness to ensure maximum durability during installation and for the long term.
- Unsurpassed strength while maintaining flexibility and toughness.
- Proven track record of performance for over 60 years.

STANDARDS:



ASTM F1336: Standard Specification for Polyvinyl Chloride (PVC) Gasketed Sewer Fittings
ASTM D3034: Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings

PRODUCT SPECIFICATION

GASKETED SDR 26 SEWER FITTINGS

H-Series

INJECTION MOLDED IN SIZES 4" – 12"

FABRICATED IN SIZES 15" – 36"

SDR26 extra heavy duty gasketed sewer fittings are designed for maximum performance in the toughest environments with a reinforced wall that is 34.5% thicker than SDR35, and a superior, high impact, gasket retention ring. Heavy duty reducing branches utilizing a minimum of SDR18 wall thickness are used in our injection molded 8", 10" and 12" tees, wyes, and tee-wyes to reinforce the strength of important branch intersections.

The gasket and shock absorbing properties of the gasket retention ring combine to reduce the effect of impact on 4" to 8" sizes for a more resilient system. A special collar design permanently locks the gasket onto the fitting ensuring a secure fit and a robust seal that prevents infiltration and ex-filtration. To make it easy to identify in the field, the collar and ring are a distinctive green color. A deep lead into the gasket enhances assembly and reduces the possibility of gasket damage or rolling, and our square pipe stop resists pipe push through from over insertion.

Our vertical riser system utilizes many H-Series components for a complete sewer protection solution.

DESIGN ADVANTAGES

- Heavy duty, shock-absorbing collar designed to permanently lock the gasket onto the fitting, and inhibit fittings breaking under impact
- Specially-designed square pipe stop prevents damage from over insertion, requires 30% more force before spearing
- Reinforced wall thickness at key branch intersections for added strength. Injection molded joint withstands 200 psi hydrostatic pressure and 22" mercury vacuum pressure
- Distinctive green high impact retention rings and gaskets for easy identification in the field

APPLICATIONS

- Non-pressure drainage of sewer and surface water wherever extra heavy SDR26 is specified.

TYPICAL USES

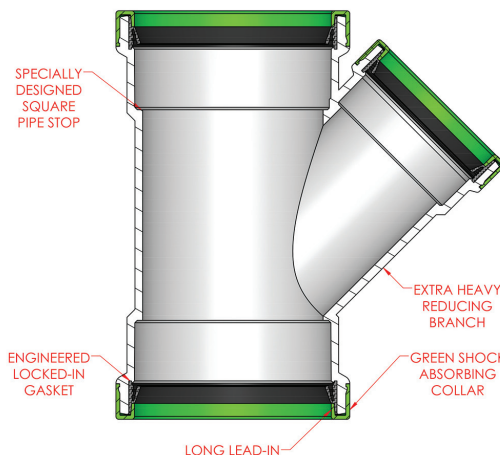
Lateral Connections to Municipal Sewers

- Sanitary
- Storm

Surface Drainage

- Area drainage
- Parking lot drainage

The H-Series fitting line is a fully-integrated SDR26 fitting design using reinforced branches and intersections to enhance the structural integrity of the installation and provide longlasting performance.



PRODUCT SPECIFICATION

GASKETED SDR 26 SEWER FITTINGS | H-Series

SHORT TERM SPECIFICATIONS

4" through 12" injection molded gasketed SDR26 sewer fittings shall be manufactured in accordance with ASTM D3034, ASTM F1336 and CSA B182.2. They shall be injection molded from virgin PVC compound having a cell classification of 12454 or 13343 in accordance with, and certified by the National Sanitation Foundation (NSF), to meet ASTM D1784. Gaskets shall be manufactured in accordance with ASTM F477 or ASTM F913. Gaskets shall be firmly seated in fitting in order to ensure proper installation and to prevent dislocation or misalignment during system assembly. Gasket joints must comply with ASTM D3212 Internal Pressure Test (ex-filtration) and Vacuum Test (infiltration) at 5 degrees of gasket joint deflection certified at 200 psi and a 22" mercury vacuum pressure.

Where available, reducing branches on injection molded 8", 10" and 12" tees, wyes, and tee-wyes shall be minimum SDR18 wall thickness in the reducing branch body and reducing branch hub below the gasket race.

Gasketed SDR26 sewer fittings shall be certified by the National Sanitation Foundation (NSF) and, in applicable configurations, to meet ASTM D3034, and by the Canadian Standards Association (CSA) to meet CSA B182.2.

CERTIFICATION

Our Gasketed SDR26 Molded Sewer fittings are third party tested and listed by NSF and CSA to meet specifications defined in ASTM D3034, F1336 and CSA B182.2, where applicable.



SUBMITTAL SHEET

SCHEDULE 40 PVC



LASCO Fittings, Inc., an Aalberts Industries company, specializes in the production and sale of injection molded fittings for Irrigation, Plumbing, Industrial, Pool/Spa and Retail markets. LASCO Fittings, Inc. operates a 26-acre manufacturing facility in Brownsville, TN. With eight Regional Distribution Facilities strategically located within the United States, LASCO provides worldwide distribution and overnight service.

Injection Molded PVC Pipe Fittings in sizes 3/8" through 12"

LASCO Fittings, Inc.'s comprehensive line of PVC fittings offers a variety of injection molded configurations in Schedule 40 sizes 3/8" through 12" conforming to ASTM D 2466.

STANDARDS AND SPECIFICATIONS – Schedule 40

ASTM D-1784 – Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly Vinyl Chloride) (CPVC) Compounds.

ASTM D-2466 – Socket Type Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.

ASTM F-1970 – Standard Specification for Special Engineered Fittings, Appurtenances or Valves for use in Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems.

MATERIAL – LASCO Schedule 40 Fittings are produced from PVC Type 1, Cell Classification 12454-B.
– O-rings are produced from a Buna-N (Nitrile) material.

LISTINGS – NSF/ANSI Standard 61, Annex G: Drinking Water System Components Weighted average lead content of $\leq 0.25\%$ and is in compliance with California's Health & Safety Code Section 116875 (commonly known as AB1953) NSF/ANSI Standard 14: Plastics Piping system Components and Related Materials. Includes /ANSI Standard 61, Annex G

DO NOT USE LASCO FITTINGS FOR COMPRESSED AIR OR GASES.

DO NOT TEST PVC PIPING SYSTEMS WITH COMPRESSED AIR OR GASES.

DO NOT USE FITTINGS WITH LIQUIDS NOT RECOMMENDED BY LASCO.

MODIFICATIONS OF FITTINGS VOIDS THE WARRANTY.



Limited Warranty

LASCO Fittings, Inc. products are warranted to be free from manufacturing defects in materials and workmanship. They are warranted against rot, rust, and electrolytic corrosion for a period of three years from date of installation. If LASCO products prove defective due to manufacturing defects in material or workmanship during that period, the manufacturer will provide new replacement units of the same type and size. No remedy will be granted under this warranty if LASCO products are not used strictly in accordance with LASCO's directions with respect to use and storage or if the products have been modified in any way. THE MANUFACTURER'S LIABILITY UNDER EXPRESSED OR IMPLIED WARRANTY OR FOR ANY REASON IS LIMITED TO FURNISHING REPLACEMENT UNITS OR GRANTING A CREDIT FOR DEFECTIVE UNITS. NO LABOR EXPENSE OR CONSEQUENTIAL DAMAGES WILL BE PAID BY LASCO. THIS WARRANTY IS IN LIEU OF ALL OTHER GUARANTEES AND WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE, EXCEPT FOR ANY WARRANTIES IMPLIED BY LAW FOR NONCOMMERCIAL CONSUMERS. ANY SUCH WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.

414 Morgan Street • Brownsville, TN 38012
(731) 772-3180 | www.lascofittings.com

This specification is provided for reference only. LASCO Fittings, Inc reserves the right to change any portion of this specification without notice and without incurring obligation to make such changes to LASCO products previously or subsequently sold. Please visit our website www.lascofittings.com for the most current information.



CASING SPACER - MODEL CSS8

SPECIFICATION & CERTIFICATE OF COMPLIANCE

The CCI Model CSS8 Casing Spacer shall be constructed of circular Stainless Steel bands, which bolt together forming a shell around the carrier pipe. The casing spacer shall be lined with a ribbed PVC extrusion with a retaining section that overlaps the edges of the shell and prevents slippage. The spacer shall be designed using runners with or without risers to support the carrier pipe within the casing and to maintain a minimum clearance of 1.0 in. between the casing ID and the carrier pipe OD.

The runners shall be Glass Reinforced Polymer with the ends of the runners beveled to facilitate installation over rough weld beads or the welded ends of misaligned or deformed casing pipe. The runners shall be attached to support structures (shell or risers) at appropriate positions to properly support the carrier pipe within the casing and for ease of installation. They shall have a minimum length of 7.0 in. and a minimum width of 2.0 in.

The shell shall be manufactured of 8.0 in. wide, 14-Gauge Stainless Steel. The riser shall be constructed of 10-Gauge Stainless Steel, 6.75 in. minimum lengths with a height to be determined based on the annular space between the carrier pipe OD and the casing ID.

Recommended positioning is to place one casing spacer 1-2 feet on each side of the bell joint and one every 6-8 feet apart thereafter for a total of three casing spacers per carrier pipe joint. CCI engineering reserves the right to recommend spacing according to the application.

PHYSICAL PROPERTIES

SHELL & RISERS

Shell – 14-Gauge Stainless Steel
Risers – 10-Gauge Stainless Steel

FINISH

2B Finish

RUNNERS

2" Wide Glass Reinforced Polymer
Length: 7" (177.8 mm) Minimum
Tensile Strength: ASTM D638 27.0 ksi
Compressive Strength: ASTM D695 33.0 ksi
Flexural Strength: ASTM D790 40 ksi
Izod Impact @ 73°F (23°C): 11 kJ/m²
Melting Point: ASTM D3418 504°F (262°C)

LINER – PVC (EPDM Alternate)

Thickness: 0.09" (2.29mm) Minimum
Hardness: ASTM D2240 Durometer Shore 'A' 80-90
Dielectric Strength: ASTM D149-13 1,000 VPM
Water Absorption: 1% Maximum
Overlaps edges

ASSEMBLY HARDWARE

Bolts: 5/16"-18UNC x 2" Long Stainless Steel
Nuts: 5/16" Stainless Steel Hex
Washers: 5/16" Stainless Steel SAE 2330

WELDING

All risers shall be welded to the shell by MIG welding.
All welds are to be fully passivated.

CCI Piping Systems certifies the Model CSS8 Stainless Steel Casing Spacers are of the highest quality which meet or exceed industry standards.

CCI PIPING SYSTEMS, LLC

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END SEALS - MODELS ESW & ESC

SPECIFICATION & CERTIFICATE OF COMPLIANCE

The CCI Model ESW Wrap-Around and Model ESC Pull-On end seals are manufactured using 1/8" thick neoprene rubber; assuring excellent chemical resistance and resiliency. They are secured to the carrier pipe and casing pipe with 1/2" wide T304 stainless steel banding with 100% non-magnetic worm gear mechanisms.

The CCI Model ESC Pull-On end seal is a one-piece glued seal. It can be pulled-on at the time of construction.

The CCI Model ESW Wrap-Around end seal is designed to facilitate installation when the carrier line has already been joined together and the installation is complete.

PHYSICAL PROPERTIES

Properties	Testing Method	Results
Specific Gravity	gr/cc	1.48
Temperature Limits		-20°F to 190°F
Color		Black
Finish		Satin
Hardness	ASTM D2240	60
Tensile Strength	ASTM D412	600 psi/min
Elongation		300%

CCI Piping Systems certifies that the standard Model ESC and the Model ESW casing end seals are of the highest quality which meet or exceed industry standards.

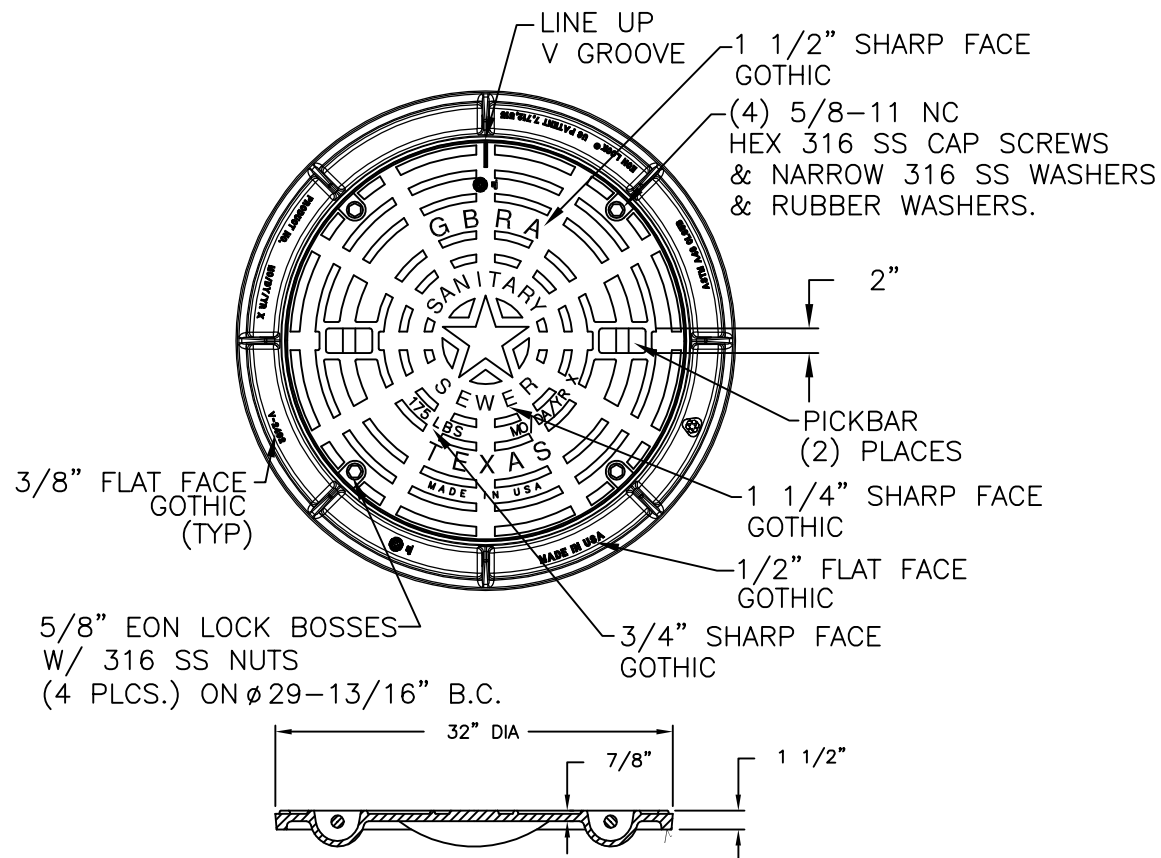
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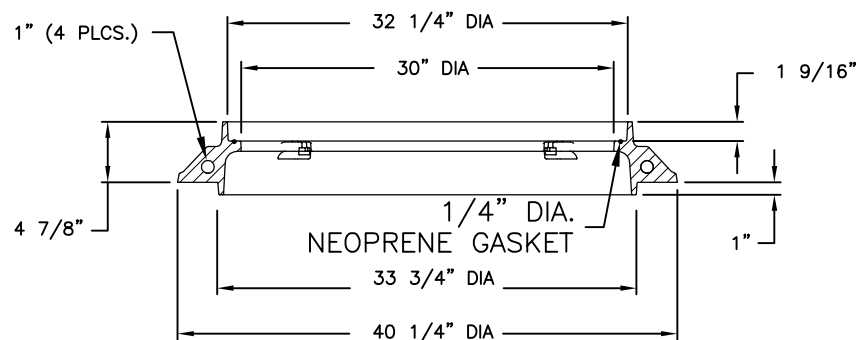
V2432

V2432-1

Assembly



CROSS SECTION



FRAME SECTION

Product Number

42432109W01

Design Features

- Materials
 - Frame
 - Gray Iron (CL35B)
 - Cover
 - Ductile Iron (80-55-06)

- Design Load
 - Heavy Duty
- Open Area
 - n/a
- Coating
 - Undipped
- √ Designates Machined Surface

Certification

- ASTM A48
- ASTM A536
- Country of Origin: USA

Major Components

42432009
42432109

Drawing Revision

10/5/2016 Designer: MAH
10/18/2016 Revised By: MAH

Disclaimer

Weights (lbs./kg) dimensions (inches/mm) and drawings provided for your guidance. We reserve the right to modify specifications without prior notice.

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