

C900/RJ™

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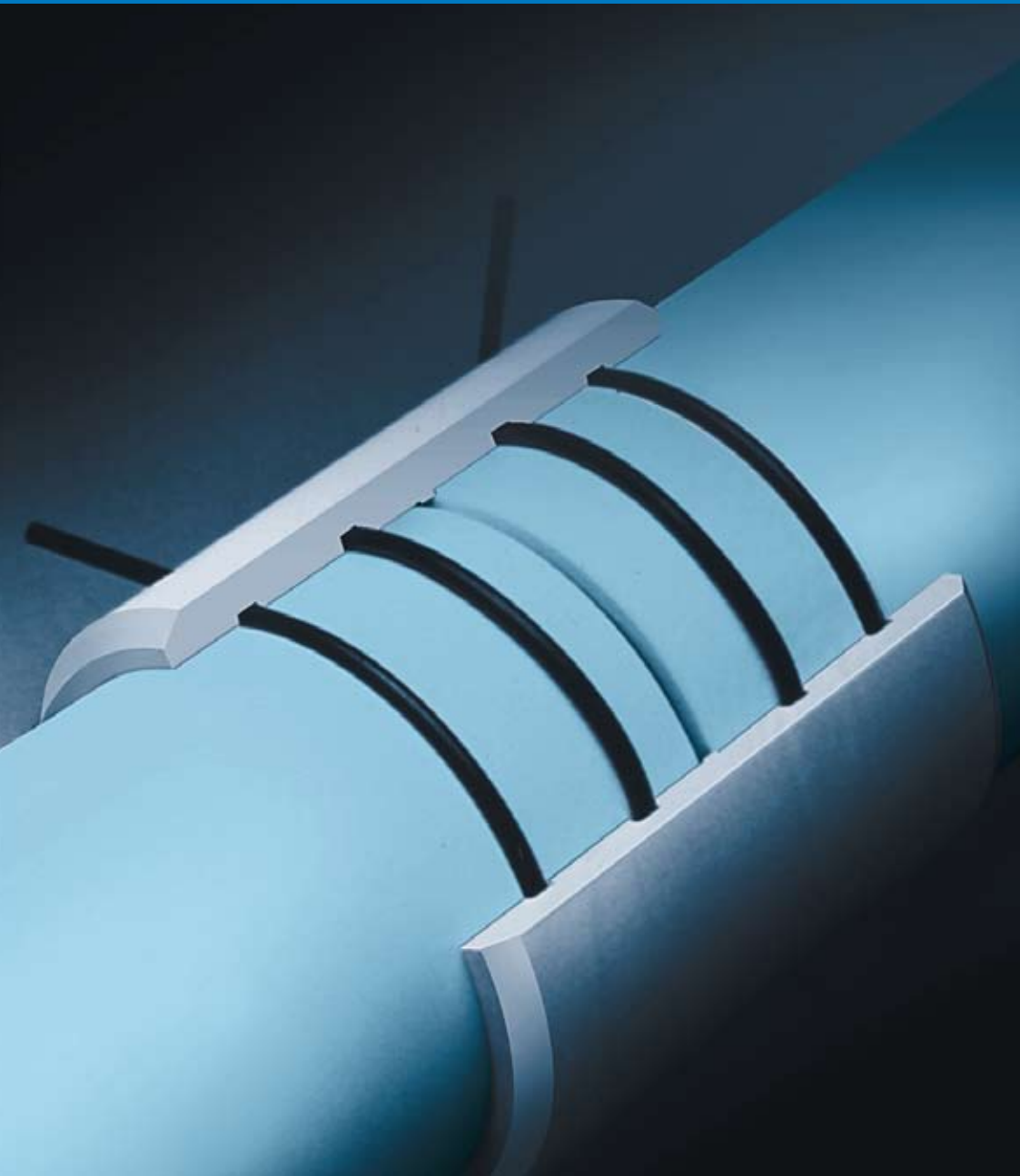
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CertainTeed C900/RJ™

PVC Pipe with Certa-Lok™ Restrained Joint System



- Directional Drilling
- Underground Water Mains and Restrained, Non-Metallic Change-of-Direction Fittings (No Thrust Blocks Required)
- Sewer Systems (Gravity and Force Mains)
- Carrier Pipe Inside Casing
- Steep or Extreme Grade Changes

Class 235 (DR18) 4"-12"

Class 305 (DR14) 4"-12"

Listed
for Potable Water
and Fire Protection
Applications



CertainTeed
SAINT-GOBAIN

Certa-Lok C900/RJ Restrained Joint PVC Pipe

- High Strength
- High Flow
- Reliable and Easy to Install

Description

CertainTeed Certa-Lok C900/RJ Restrained Joint PVC Pipe* is the first non-metallic joint restraining system designed for use in municipal water and fire protection systems and other restrained joint applications.

The inability of some soils to support thrust blocks, coupled with the increased demands placed on utility corridors, resulted in the development of Certa-Lok C900/RJ Restrained Joint PVC Pipe (with cast-iron ODs), which meets all performance requirements of AWWA C900. Certa-Lok C900/RJ Restrained Joint PVC Pipe is designed to eliminate costly concrete thrust blocks in a properly engineered water system.

* Certa-Lok C900/RJ is CertainTeed's designation for a restrained joint system manufactured from AWWA C900 Pipe.

The Ideal Solution for Directional Drilling Potable Water or On-Grade Sewer Projects

- Fast and easy to assemble – no expensive joint heat-welding equipment (which creates a flow-restricting bead on the I.D.) is needed. Joint achieves full strength immediately in all weather conditions.
- Great in congested areas where there is no room for bulky reels or to string out hundreds of feet of pre-fused pipe.
- Compatible with all C900 PVC pipe systems.
- Line maintenance is a breeze with conventional repair components designed for use with PVC pipe.
- PVC pipe is inherently 2.5 times stronger than HDPE, which allows PVC to be extruded with a thinner wall than HDPE for a comparable pressure rating. This provides a larger I.D. on PVC pipe, which maximizes flow performance. HDPE pipe must generally be upsized for comparable flow performance.
- Compared to HDPE, PVC's higher strength and rigidity facilitate use for on-grade sewer installations.
- HDPE pipe can stretch during installation, further reducing I.D. – when shrinking back, pipe can pull out of fittings.



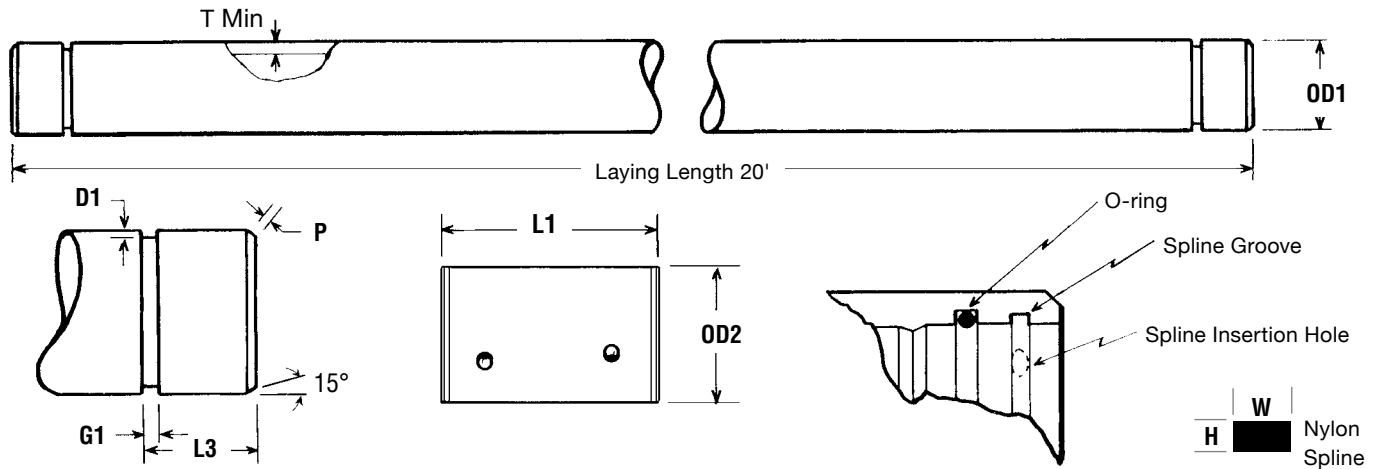
Certa-Lok C900/RJ Restrained Joint PVC Pipe and Couplings provide a restrained joint by utilizing precision machined grooves on the pipe and in the coupling. When aligned, a nylon spline is inserted, resulting in a fully circumferential restrained joint that locks the pipe and coupling together. Teflon-coated elastomeric seals (O-rings) in the coupling are designed to provide a reliable hydraulic pressure seal.

Dimensions

Class 235 (DR18) 4"-12"
 Class 305 (DR14) 4"-12"

Includes Coupling, O-rings,
 Splines, and Lubricant.

At the time of printing, UL ratings were (1) in-line with the previous version of AWWA C900 (DR18=150psi, DR14=200psi) and (2) being updated for harmonization with C900-07, which is the basis for the pressure ratings shown throughout this brochure.



Pipe Dimensions

Sizes	OD1	T Min.		P	L3	G1	L1	OD2	D1		Approx. Weight with Coupling (lbs/ft)	
		DR18	DR14						Min.	Max.	DR18	DR14
4"	4.80	.267	.343	.313	3.000	.375	8.250	5.964	.125	.135	2.6	3.2
6"	6.90	.383	.493	.313	3.000	.375	8.250	8.366	.125	.135	5.4	6.7
8"	9.05	.503	.646	.656	3.163	.500	10.500	10.947	.130	.140	9.3	11.5
10"	11.10	.617	.793	.656	3.500	.500	11.125	13.361	.200	.215	14.2	17.8
12"	13.20	.733	.943	.656	3.500	.500	12.000	15.836	.200	.215	20.4	24.7

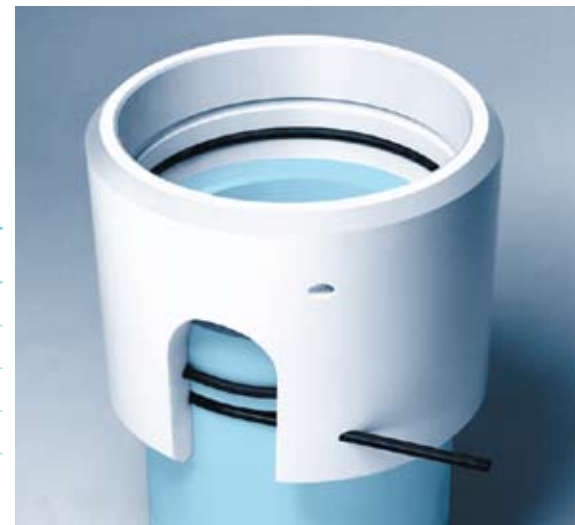
All dimensions are in inches and are subject to normal manufacturing tolerances. CertainTeed C900/RJ Couplings are boxed and shipped with O-rings factory installed in coupling.

O-ring Dimensions

Sizes	O-ring Dia.
4"	.313
6"	.313
8"	.400
10"	.438
12"	.438

Spline Dimensions

Sizes	W	x	H	x	Length
4"	1/4		1/4		18
6"	1/4		1/4		24
8"	5/16		5/16		32
10"	3/8		3/8		39
12"	3/8		3/8		46



Certa-Lok C900/RJ Pipe (Blue*) (supplied with coupling)

Sizes	Part #	Part #
	Class 235	Class 305
4"	001482	009075
6"	001512	000331
8"	001604	001642
10"	000317	290237
12"	000324	291265

*Also available in purple for reclaimed water applications.

Certa-Lok C900/RJ Coupling (Class 305)

Sizes	Part #
4"	740916
6"	740923
8"	741203
10"	740947
12"	740954

Certa-Lok C900/RJ O-ring

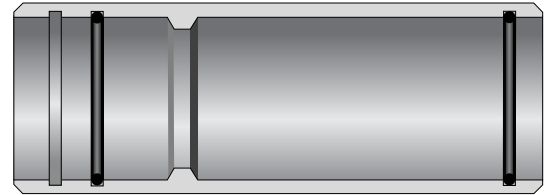
Sizes	Part #
4"	860713
6"	860720
8"	860737
10"	860744
12"	860751

Certa-Lok C900/RJ Spline

Sizes	Part #
4"	864889
6"	865282
8"	865316
10"	864742
12"	867309

C900/RJ x C900 18" Length (Class 305) C/LF x GF x 18" Length

Sizes	Part No.
4"	741852
6"	741869
8"	741876
10"	741302
12"	741319



Spline Insertion Tool

For Pipe Size	Part No.
4"-6"	707964
8"	707971
10"-12"	707995



C900/RJ Pulling Heads.
Call for sources of supply.

Grooving Tools For field fabrication of Certa-Lok pipe

Description	Part No.
1-3/4 HP Router (110v)	860072
3/8" Bit (4"-6")	860171
1/2" Bit (8"-12")	860188
15° Beveling Bit	860904
4" Grooving Jig	860256
6" Grooving Jig	860263
8" Grooving Jig	860270
10" Grooving Jig	860287
12" Grooving Jig	860294



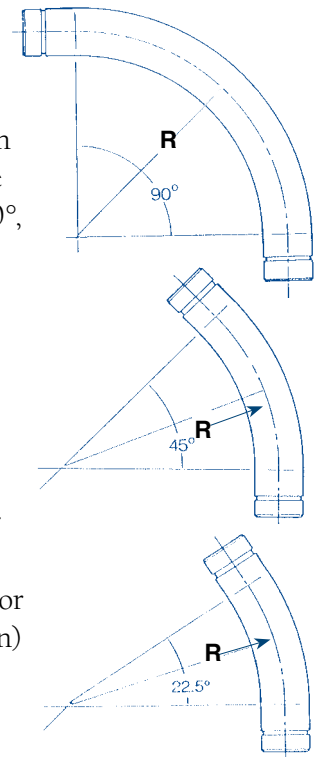
Certa-Lok C900/RJ

Restrained Joint PVC Pipe Sweeps

(No Thrust Blocks Required)

Description

- Designed for use with Certa-Lok C900/RJ Restrained Joint PVC Municipal Pipe when changes in direction are required. Sweeps feature cast-iron outside diameters and are fabricated from tested Certa-Lok pipe. Sweep sizes available are 4" through 12" in 90°, 45°, and 22-1/2° angles.
- Non-metallic and require no cathodic protection. Sweeps should be installed in the same fashion as Certa-Lok C900/RJ pipe, using proper bedding and backfill. Joint assembly for Sweeps is the same as Certa-Lok C900/RJ pipe.
- Provide a restrained joint by utilizing precision machined grooves on the sweep and in the coupling which, when aligned, allow a spline to be inserted, resulting in a fully circumferential restrained joint that locks the sweep and coupling together. The restrained joint is designed to eliminate the need for thrust blocking.
- Manufactured from cast-iron outside diameter DR18 PVC pipe that is tested to meet or exceed the performance requirements of AWWA (American Water Works Association) Standard C900, and complies with NSF Standard No. 61 for potable water service.



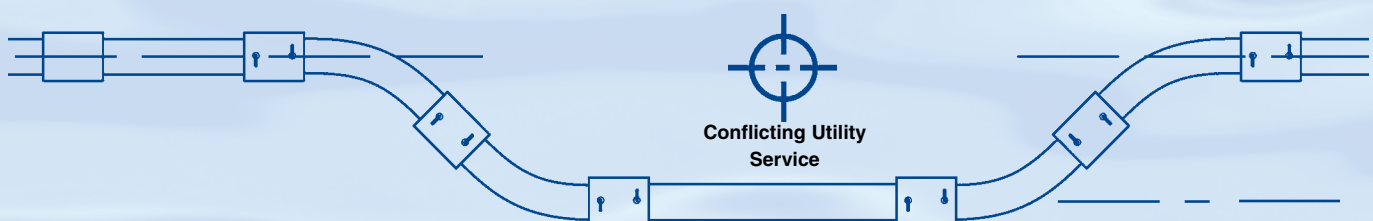
Certa-Lok C900/RJ

Nominal Size (Inches)	R Radius	Class 235 Sweep (no Coupling)			Class 305 Sweep (no Coupling)		
		(90°) Part No.	(45°) Part No.	(22.5°) Part No.	(90°) Part No.	(45°) Part No.	(22.5°) Part No.
4"	15.25	743009	743054	743108	743153	743207	743252
6"	21.00	743016	743061	743115	743160	743214	743269
8"	21.50	743023	743078	743122	743177	743221	743276
10"	32.00	743030	743085	743139	743184	743238	743283
12"	34.00	743047	743092	743146	743191	743245	743290

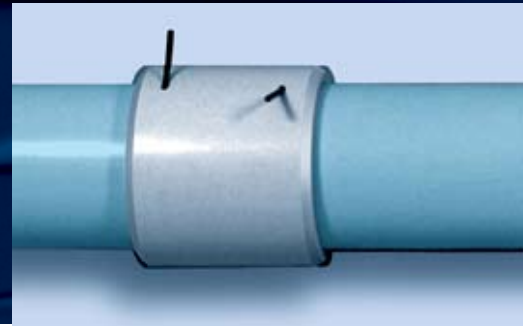
Note: All dimensions are in inches and are subject to normal manufacturing tolerances.

DR14 Sweeps available on a special order basis.

Ideal for Offsets



Certa-Lok C900/RJ Restrained Joint PVC Pipe



Engineering Specification



1.0 Scope

This specification covers restrained joint Polyvinyl Chloride (PVC) Pipe, 4" – 12", with cast-iron pipe (CI) outside diameters. Pipe is intended for use in pressure-rated potable water delivery systems, as well as in sewer and fire protection piping systems.

2.0 Reference Documents

American Society for Testing and Materials (ASTM)

ASTM D 1784	Standard Specification for Rigid PVC Compounds and Chlorinated PVC Compounds
ASTM D 2837	Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials
ASTM D 3139	Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
ASTM F 477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

American Water Works Association (AWWA)

AWWA C900	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. through 12 In. (100 mm through 300 mm), for Water Distribution
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NSF International

NSF 61	Drinking Water System Components – Health Effects
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3.0 Requirements

3.1 General

Products delivered under this specification shall be manufactured only from water distribution pipe and couplings conforming to AWWA C900. The restrained joint pipe system shall also meet all short and long term pressure test requirements of AWWA C900. Pipe, couplings, and locking splines shall be completely non-metallic to eliminate corrosion problems.

3.2 Materials

Pipe and couplings shall be made from unplasticized PVC compounds having a minimum cell classification of 12454, as defined in ASTM D 1784. The compound shall qualify for a Hydrostatic Design Basis (HDB) of 4000 psi for water at 73.4°F, in accordance with the requirements of ASTM D 2837.



3.3 Approvals

Restrained joint PVC pipe products shall have been tested and approved by Underwriters Laboratories for continuous use at rated pressures as follows:

Pipe Size	4"	6"	8"	10"	12"
DR18	UL Listed for Underground Restrained Joint Water Mains				
DR14	UL Listed for Underground Restrained Joint Water Mains			UL Listed for Conventional Underground Water Mains Installed with Thrust Blocks	

Note: All approvals shown are for a locking-joint system suitable for directional drilling.

Copies of agency approval reports or product listings shall be provided to the Engineer. Products intended for contact with potable water shall be evaluated, tested, and certified for conformance with NSF 61 by an acceptable certifying organization.

3.4 Dimensions

Nominal outside diameters and wall thicknesses of restrained joint pipe shall conform to the requirements of AWWA C900. Restrained joint pipe shall be furnished in 4", 6", 8", 10" and 12" sizes, in Class 235 (DR18) and Class 305 (DR14). Pipe shall be furnished in standard lengths of 20 feet. Dimensions of the pipe are shown on page 3.

3.5 Joints

Pipe shall be joined using non-metallic couplings to form an integral system for maximum reliability and interchangeability. High-strength, flexible thermoplastic splines shall be inserted into mating, precision machined grooves in the pipe and coupling to provide full 360° restraint with evenly distributed loading.

Couplings shall be designed for use at or above the pressure class of the pipe with which they are utilized, and shall incorporate twin elastomeric sealing gaskets meeting the requirements of ASTM F 477. Joints shall be designed to meet the zero leakage test requirements of ASTM D 3139.

3.6 Workmanship

Pipe and couplings shall be homogeneous throughout and free from voids, cracks, inclusions and other defects, and shall be as uniform as commercially practicable in color, density and other physical characteristics.

3.7 Quality Control

Every pipe and machined coupling shall pass the AWWA C900 hydrostatic proof test requirements of 2 times the pressure class for 5 seconds. Until such time as UL standards are harmonized with AWWA, UL requirements shall be used, which are 4 times the UL pressure class for 5 seconds (4*150=600psi, 4*200=800psi).

3.8 Marking

Pipe and couplings shall be legibly and permanently marked in ink with the following minimum information:

Pipe

- Nominal size (for example, 4")
- PVC
- Dimension ratio (for example, DR18)
- AWWA/UL pressure class (for example, PC 235)
- AWWA C900-07 (or latest edition)
- Manufacturer's name or trademark and production record code
- Seal (mark) of the testing agency verifying the suitability of the pipe material for potable water service
- Seal (mark) of the certifying agencies that have tested and approved the pipe for use in fire protection systems

Couplings

- Nominal size (for example, 4")
- PVC
- AWWA/UL pressure class (for example, PC 305)
- AWWA C900-07 (or latest edition)
- Manufacturer's name or trademark
- Seal (mark) of the testing agency verifying the suitability of the pipe material for potable water service
- Seal (mark) of the certifying agencies which have tested and approved the pipe for use in fire protection systems

4.0 Approved Manufacturers

C900/RJ™ PVC restrained joint pipe from CertainTeed Corporation, or approved equal