

# LOK-21™

## FEATURES & BENEFITS

### INTRODUCTION

Diamond Lok-21 restrained joint PVC pressure pipe is manufactured in accordance with AWWA C900 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings in sizes from 4" thru 24" CIOD (100mm to 600mm). Most sizes are available in DR14 (PC 305), DR18 (PC 235), DR21 (PC 200), and DR25 (PC 165). Please check with your local Diamond Sales Representative for availability. Cast Iron Outside Diameter (CIOD) sizing insures the availability of fittings, valves and other appurtenances.

Diamond Lok-21 pipe is manufactured from compounds meeting the requirements of ASTM D1784 for a cell classification of 12454 and having a hydrostatic design basis (HDB) of 4000 psi. The pipe compound and gaskets also meet the requirements of NSF Standard 61 for potable drinking water.

Diamond Lok-21's restraint system provides uniform circumferential contact thereby eliminating any concerns over point loading. Because it is a simple push together system, it dramatically reduces installation time while reducing complexity which exists for fused or bolted systems.

Diamond Lok-21® restrained joint PVC pipe is well suited for directional drilling operations, for installation through bore casings and most applications which require joint restraint. Because it is PVC, you know you are getting superior long-term performance.

#### PIPE INTEGRITY

Each piece of Diamond Lok-21 is proof tested to twice its pressure rating. It has a short term safety factor greater than 3 against burst pressure and a long-term safety factory of 2 on its pressure rating. All Diamond Lok-21® products utilize the Rieber sealing system technology which provides tremendous joint integrity under severe construction conditions.

#### PUSH TOGETHER RESTRAINT

Diamond Lok-21® pushes together like standard gasketed PVC pipe. The restraint mechanism is located in the bell. It does not require couplings or splines; nuts, bolts and torque wrenches; butt fusion equipment; concrete thrust blocking or solvent cement.

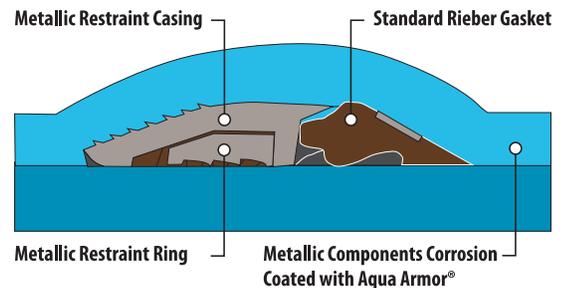
#### FAST, SIMPLE AND RELIABLE

Installation costs are dramatically reduced with Diamond Lok-21®. It is nearly as fast as standard PVC pipe installation. It is as simple as clean, lubricate, align and insert and as reliable as PVC pipe. No special tools, no special machines, no special parts.

#### PVC

Diamond Lok-21® is made of PVC, a non-conductor of electricity, therefore immune to electrochemical reactions which cause corrosion. PVC is resistant to a wide range of chemicals which cause corrosion in non-PVC products. The restraint casing and lock ring are coated to resist corrosion and located on the non flow side of the gasket. No nuts and bolts to worry about. Because PVC does not corrode, "Red Water" is not possible in a Diamond Lok-21® system.

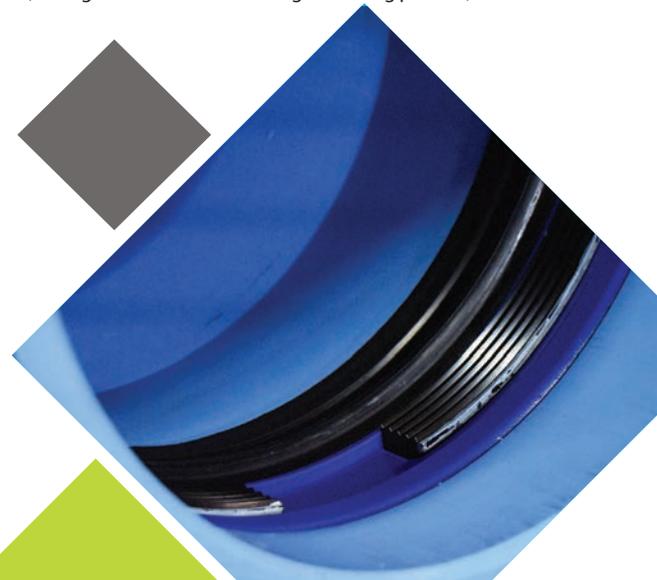
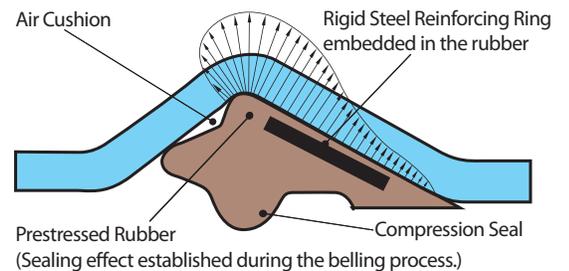
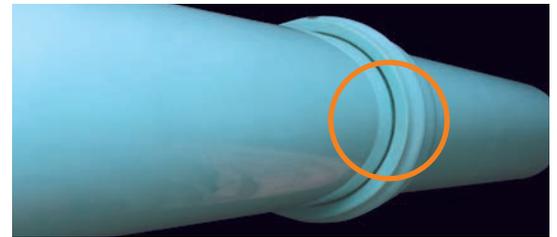
### GASKET ILLUSTRATION



### GASKET DIAGRAM

#### HOW IT WORKS?

How it works? "Rieber Sealing System Technology" is utilized in forming the gasket bell sockets of Diamond C900 PVC Pipe around the steel reinforced elastomeric seal meeting the requirements of ASTM F477.



## RIEBER GASKETED SEALING SYSTEM

Diamond Lok-21® has deep insertion push together gasketed joints utilizing Rieber sealing system technology. This has virtually eliminated the leaks from rolled or fish-mouthed gaskets.

## SMOOTH INTERIOR/GREATER RELATIVE FLOW CAPACITY

Diamond Lok-21® has a very smooth interior which provides a Hazen-Williams C Factor of 150. This ensures superior hydraulics over the long term reducing pumping costs and requiring much less cleaning. The smooth interior reduces unwanted by-product buildup and therefore does a much better job of maintaining initial water quality. Because PVC has much higher tensile HDB strength than HDPE, it has a larger I.D. for similarly pressure rated products and hence greater flow capacity.

## SHORT FORM SPECIFICATION FOR WATER TRANSMISSION & SEWER FORCE MAIN PIPE

Self Restrained potable water transmission and sewer force main pipe shall be Diamond Lok-21 PVC pipe. It shall be manufactured with compounds meeting a 12454 designation according to ASTM D1784 and shall have Rieber style joints meeting the requirements of ASTM D3139 with gaskets meeting the requirements of ASTM F477. Pipe for use in potable water systems shall also bear the NSF 61 mark or equivalent.

## LOK-21®

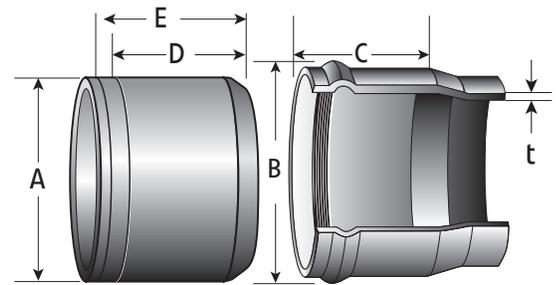
### AWWA SPECIFICATION DATA

Diamond Lok-21 self-restrained joint C900 PVC pipe 4" thru 24" (100mm thru 600mm) is made of 12454 compound per ASTM D1784, in accordance with the dimensional, chemical, and physical requirements of the current AWWA C900 Poly Vinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings standard.

Diamond Lok-21® restraint joint C900 products bear the mark of NSF, International.

Diamond Lok-21® restraint joint C900 products utilize the Bulldog Restraint System® with a Rieber gasket per ASTM F477 to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D3139). Each male end is beveled to facilitate joint assembly and the spigot is reference marked to ensure proper insertion depth. Diamond furnished lubricant is to be used in the joining process.

## RIEBER JOINT ILLUSTRATION



Nominal Pipe Size Inches(mm)	A Outside Dia. Inches	B Bell Dia. Inches	C Approximate Bell Depth Inches	D Assembly Mark 1 Inches *	E Assembly Mark 2 Inches *	t DR-14 Min. Wall Inches	t DR-18 Min. Wall Inches	t DR-21 Min. Wall Inches	t DR-25 Min. Wall Inches	Max. Pull-In Force, Straight Pull (No Bending) lbs.
DR-14 PRESSURE CLASS 305 PSI, DR-18 PRESSURE CLASS 235 PSI, DR-21 PRESSURE CLASS 200 PSI OR DR-25 PRESSURE CLASS 165 PSI										
4" (100)	4.800	6-1/2"	8"	5-3/4"	6-3/4"	0.343	0.267			15,000
6" (150)	6.900	9-1/4"	8-1/2"	6-1/4"	7-1/4"	0.493	0.383			20,000
8" (200)	9.050	11-3/4"	9"	7-1/8"	8-1/8"	0.646	0.503			30,000
10" (250)	11.100	14-1/4"	9-1/2"	8"	9"	0.793	0.617			40,000
12" (300)	13.200	16-3/4"	10"	8-5/8"	9-5/8"	0.943	0.733			45,000
14" (350)	15.300	19-1/4"	13"	9-1/2"	10-1/2"	1.093	0.850	0.729	0.612	52,000
16" (400)	17.400	21-3/4"	13"	10-3/4"	11-3/4"	1.243	0.967	0.829	0.696	60,000
18" (450)	19.500	24-1/4"	15-1/2"	10-3/4"	11-3/4"	1.393	1.083	0.929	0.780	70,000
20" (500)	21.600	26-3/4"	16"	12"	13"	1.543	1.200	1.029	0.864	80,000
24" (600)	25.800	31-3/4"	17"	13-5/8"	14-5/8"	1.843	1.433	1.229	1.032	100,000

Prices are subject to a firm policy of "Price in effect at time of shipment on regular purchases"

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\*Tolerance of +/- 1/4" allowed



# LOK-21™

## IPS SPECIFICATION DATA

### LOK-21® SPECIFICATION DATA

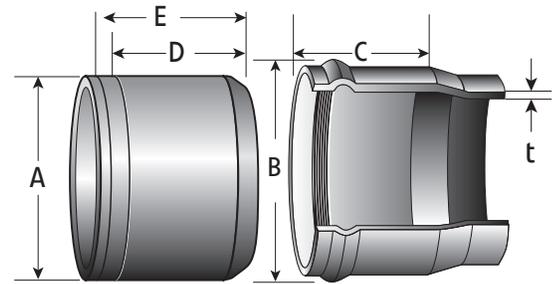
Diamond LOK-21® restraint joint IPS (ASTM D2241) SDR 21 and 26, PVC pipe (3", 4", 6" and 8") is made of 12454 compound per ASTM D1784, in accordance with the dimensional, chemical, and physical requirements of ASTM D2241 for IPS sizes.

Diamond LOK-21® restraint joint IPS pipe bears the mark of NSF-14.

Diamond LOK-21® restraint joint IPS utilizes the Bulldog Restraint System with a Rieber gasket per ASTM F477 to seal the integral bell socket to the spigot of the next joint (which conforms to the requirements of ASTM D3139). Each male end is beveled to facilitate joint assembly, and the spigot is reference marked to ensure proper insertion depth.

Diamond furnished lubricant is to be used in the joining process.

### RIEBER JOINT ILLUSTRATION



Nominal Pipe Size Inches(mm)	A Outside Dia. Inches	B Bell Dia. Inches	C Approximate Bell Depth Inches	D Assembly Mark 1 Inches *	E Assembly Mark 2 Inches *	t Minimum Wall(t) Inches
SDR-21 PRESSURE RATED 200 PSI						
3" (.75)	3.500	4-7/16"	6-1/8"	5"	6"	0.167
4" (100)	4.500	5-1/2"	7"	5-5/8"	6-5/8"	0.214
6" (150)	6.625	8-1/4"	8"	6-3/4"	7-3/4"	0.316
8" (200)	8.625	10-1/4"	8"	6-7/8"	7-7/8"	0.410
SDR26 PRESSURE RATED 160 PSI						
6" (150)	6.625	8-1/4"	8"	6-3/4"	7-3/4"	0.255
8" (200)	8.625	10-1/4"	8"	6-7/8"	7-7/8"	0.332

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