



<sup>®</sup>  
**DURALOC PVC SEWER PIPE**  
BEATING ENVIRONMENTAL POLLUTION FROM THE GROUND UP



# DURALOC<sup>®</sup>

## TODAY'S CHOICE FOR TOMORROW'S ENVIRONMENT

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NEXT Polymers engineers care about our natural resources, so when they design and develop new products, safeguarding the environment is one of their first priorities. The development of NEXT's DURALOC solid wall PVC gravity sewer pipe reflects this commitment. Manufactured to NEXT Polymers's unique specifications and strict industry standards, DURALOC delivers safety, longevity and superb performance.

Across the country and around the world, sanitary engineers have come to recognize DURALOC's many benefits. Made to withstand extreme soil loads without leaking, this corrosion-

proof pipe is lighter to handle and easier to install than most other pipe available, while its performance and durability make it more cost-effective. No wonder it's today's optimal choice for meeting tomorrow's sewage demands.

At NEXT Polymers, we've been perfecting and producing quality products for sanitary systems for over 40 years. We're proud of our environmental advocacy and continue to be committed to providing a superior product backed, as always, by our record of service excellence and technical support.

# PRODUCT RANGE

## Lateral Sewer Pipe (SDR 28) - White, Green and Black

Size		D		d		d1		t(min)		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg/m	lb/ft
100	4	107.1	4.21	99.3	3.91	130.3	5.13	3.81	0.150	1.85	1.24
135	5	143.3	5.64	133.1	5.24	168.9	6.65	5.10	0.201	3.29	2.21
150	6	159.4	6.27	147.8	5.82	188.1	7.41	5.69	0.224	4.06	2.73

## Gravity Sewer Pipe (SDR 35) - Green and White

Size		D		d		d1		t(min)		Weight	
mm	in	mm	in	mm	in	mm	in	mm	in	kg/m	lb/ft
100	4	107.1	4.21	100.9	3.97	128.8	5.07	3.06	0.120	1.58	1.06
135	5	143.3	5.64	134.6	5.30	173.1	6.80	4.09	0.161	2.91	1.96
150	6	159.4	6.27	150.3	5.92	185.8	7.32	4.55	0.180	3.35	2.25
200	8	213.4	8.40	201.2	7.92	244.8	9.64	6.10	0.240	5.89	3.95
250	10	266.7	10.50	251.5	9.90	304.8	12.00	7.62	0.300	9.19	6.18
300	12	317.5	12.50	299.4	11.79	360.3	14.18	9.07	0.357	13.10	8.80
375	15	388.6	15.30	366.4	14.43	439.2	17.29	11.10	0.437	19.56	13.12
450	18	475.0	18.70	447.8	17.63	525.2	20.68	13.60	0.535	29.40	19.76

All dimensions and weights are approximate



Illustration not to scale

### Deflection testing

The table shows long-term deflection values after final consolidation of the backfill in the pipe zone. In accordance with ASTM D 3034, NEXT Polymers recommends that the maximum long-term deflection be set at 7.5%, which provides the engineer with a conservative 4 to 1 safety factor.

### Installation

DURALOC pipe shall be installed in strict accordance with the NEXT Polymers Municipal PVC Pipe Installation Guide. Experienced service and technical support is available at NEXT Polymers office. If you have any questions concerning pipe installation, a representative will be glad to assist you.

### Short form specification

DURALOC SDR 35 and SDR 28 sewer pipes shall be manufactured from PVC compound having cell classification 12454-B or 12364-C as defined by ASTM D 1784. Pipe shall be certified in compliance with: CSA B 182.1 for sizes 100-150 mm (4-6 in) and to CSA B 182.2 for sizes 100 mm (4 in) and over. The minimum pipe stiffness shall be 320 kPa (46 psi) for SDR 35 and 625 kPa (90 psi) for SDR 28 sewer pipe when measured in accordance with ASTM D 2412. Impact resistance shall be measured in accordance with CSA B 182.1, CSA B 182.2, NQ 3624-130 and NQ 3624-135 at 0°C (32°F).

Gaskets shall conform to CSA B 182.1, CSA B 182.2, NQ 3624-130, NQ 3624-135 and ASTM F 477 requirements and shall be locked into the bell during the manufacturing process. Joints shall be tested hydrostatically in accordance with ASTM D 3212 for compliance with CSA B 182.1 and CSA B 182.2. Additionally, joints shall be tested to withstand 345 kPa (50 psi) of hydrostatic pressure to meet plumbing and building code requirements in most jurisdictions. Only NEXT lubricant shall be used when assembling DURALOC pipe. Pipe shall be available in 4 m (13 ft) lay lengths unless special ordered.

Maximum long-term deflections of DURALOC (SDR35) Sewer Pipe (320 kPa [46 psi] stiffness)

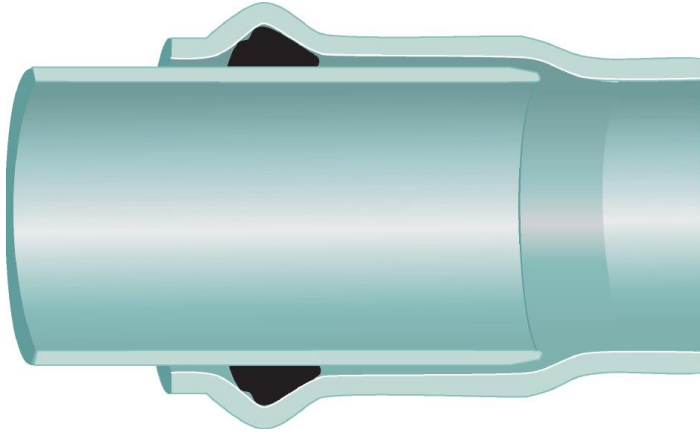
ASTM		Proctor	Height of Cover m (ft)													
Embedment material classification		Density AASHTOT-99	0.9 (3)	1.5 (5)	2.4 (8)	3.3 (10)	3.7 (12)	4.3 (14)	4.9 (16)	5.5 (18)	6.1 (20)	6.7 (22)	7.3 (24)	7.9 (26)	8.5 (28)	9.1 (30)
Class I	Manufactured granular angular		0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6
	Class II	Clean sand and gravel	90%	0.2	0.3	0.5	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.6	1.7	1.8
80%			0.9	1.4	2.3	3.2	3.6	4.1	5.0	5.5	6.0	6.4	7.3	7.7	8.2	9.1
Class III	Sand and gravel with fines	90%	0.2	0.4	0.6	0.8	0.9	1.1	1.2	1.4	1.6	1.7	1.9	2.1	2.2	2.3
		85%	0.7	0.9	1.7	2.2	2.6	3.0	3.5	3.9	4.3	4.8	5.2	5.6	6.0	6.5
		75%	1.1	1.8	2.9	3.8	4.5	5.5	6.8	8.5	9.9	11.3	12.7	14.1	15.5	16.8
Class IV	Silt and clay	65%	1.3	2.4	3.6	4.7	5.5	6.8	8.5	9.6	11.4	13.0	14.5	16.0	17.3	18.0
		85%	0.7	0.9	1.7	2.2	2.6	3.0	3.5	3.9	4.3	4.8	5.2	5.6	6.0	6.5
		75%	1.3	2.3	3.3	4.3	5.0	6.5	7.8	9.5	10.6	12.2	13.5	15.0	16.3	17.0
		65%	1.3	2.4	3.6	4.7	5.5	8.0	10.5	12.5	15.0	17.6	20.0	22.0	24.0	26.0

These zones not recommended

1. No length of pipe installed under conditions specified will deflect more than is indicated; the pipe will deflect less than the amount indicated if specified density is obtained.
2. Embedment material classifications are as per ASTM designation D 2321-72 "Underground Installation of Flexible Thermoplastic Sewer Pipe".
3. Deflections listed in table are maximum long-term values. Recommended maximum deflection is 7 1/2%.
4. Listed deflections are those caused by soil loading only and do not include initial out-of-roundness, etc. Source: Utah State University

# DURALOC ADVANTAGES

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*Illustration not to scale*

## **Leak-proof joints help prevent contamination**

NEXT Polymers fits its DURALOC pipe bells with locked-in Reiber gaskets that have leak-proof, permanent joints. This assembly has become the industry standard; it eliminates the threat of gasket roll and, generation after generation, it helps prevent groundwater contamination. Its built-in features are designed to prevent infiltration and exfiltration to avoid environmental degradation or risks to public health.

## **Lower operating costs, faster installation**

Using DURALOC reduces costs in several ways. Resistant to scaling and abrasion, it retains its flow capacity. Finally, its rugged durability helps prevent breakage during field cutting and handling. Since it requires no heavy lifting equipment and can be installed by fewer workers—for example, one length of 200 mm (8 in) SDR 35 weighs only about 25 kg (52 lb)—it's easier and less expensive to install than other pipe.

## **Corrosion resistance**

Unlike other materials, DURALOC PVC Sewer Pipe resists external attack by "hot," aggressive soils and internal corrosion from effluents and sewer gases. DURALOC's resistance to these deteriorating effects gives it longer life.

## **Strength and flexibility**

NEXT's strong, virtually root-proof joints and resilient pipe are flexible enough to allow settling during normal shifting of surrounding soil, ensuring fewer leaks, less maintenance and increased longevity.

## **Gradual curves**

DURALOC joints can be offset at the joint by up to 3°, permitting contractors to follow the gentle contour of residential streets. Please refer to the NEXT Polymers Municipal PVC Pipe Installation Guide for complete details.

## **Increased flow**

Engineering research conducted at low flow rates of 2.5 ft/sec or less has given a Manning value of  $n=.009$  for PVC sewer pipes. This compares with average values of  $n=.013$  and  $.022$  for concrete and corrugated metal pipes. DURALOC's smooth and non-porous interior surfaces can result in savings from flatter grades and the use of smaller diameter pipes. Superior flow rates combined with excellent abrasion resistance ensure DURALOC's dependability and service for many years.

# CONTROLS AND STANDARDS

## Stiffness

The pipe stiffness of SDR 35 must be a minimum of 320 kPa (46 psi) and 625 kPa (90 psi) for SDR 28. Stiffness is measured according to test methods outlined in ASTM D 2412 and NQ 3624-060 in order to comply with the following standards: CSA B 182.1, CSA B 182.2, ASTM D 3034, NQ 3624-130 and NQ 3624-135.

## Flattening

In compliance with CSA B 182.1, CSA B 182.2, ASTM D 3034, NQ 3624-130 and NQ 3624-135 standards, DURALOC can withstand compression to 40% of its original O.D. without signs of splitting or breaking.

## Extrusion quality

Average outside diameter, out-of roundness and wall thickness are measured hourly to ensure extrusion quality conforms to standards.

## Fusion

DURALOC shows no visible sign of flaking or cracking when immersed in anhydrous acetone (99.5% pure) for 20 minutes in accordance with ASTM D 2152.

## Minimum CSA Impact Values for DURALOC at 0°C (32°F)

Dimension		SDR 35		SDR 28		Tup details		
		CSA		CSA		Tup	Weight	
mm	in	J	ft-lbf	J	ft-lbf	Dim	kg	lb
100	4	135	100	135	100	B	9.0	20
125	5	n/a	n/a	150	111	B	9.0	20
150	6	165	122	165	122	B	9.0	20
200	8	175	129	n/a	n/a	A*	13.6	30
250	10	190	140	n/a	n/a	A*	13.6	30
300	12	205	151	n/a	n/a	A*	13.6	30
375	15	230	170	n/a	n/a	A*	13.6	30
450	18	275	203	n/a	n/a	A*	13.6	30

\* NOTE: BNQ requires Tup B with 30 lbs (13.6 kg) weight

## Standards and specifications

- CSA International - CSA B 182.1 and B 182.2
- ASTM International – ASTM D 3034, D 1784, D 2412, D 2444, D 3212 and F 477
- Bureau de normalisation du Québec – NQ 3624-130 and NQ 3624-135

## Elastomeric gaskets

Gaskets used for joining PVC sewer pipe shall conform to CSA B 182.1, CSA B 182.2, NQ 3624-130, NQ 3624-135 and ASTM F 477 standards. NEXT Polymers uses its own internal quality control system to verify that all gaskets are within specified tolerances.

## Impact

In accordance with CSA B 182.1, CSA B 182.2, NQ 3624-130 and NQ 3624-135, DURALOC will not split or crack during impact tests performed at 0°C (32°F).

## Joint tightness

The gasketed joint will not leak when subjected to hydrostatic pressure of at least 100 kPa (15 psi) or negative vacuum pressure of -75 kPa (-11 psi) or 56 cm (22 in) of mercury. Joint performance is in compliance with CSA B 182.1, CSA B 182.2, ASTM D 3034, NQ 3624-130 and NQ 3624-135 standards. In addition to the minimum requirements of the CSA, BNQ and ASTM standards, joints are tested to 345 kPa (50 psi) hydrostatic pressures. No leakage is detected under:

1. Straight alignment
2. 5% shear load
3. 5% deflection at the joint. Please refer to the allowable deflection *limits in the NEXT Polymers Municipal PVC Pipe Installation Guide.*



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