

# Weholite<sup>®</sup>

## Structural Profile Wall HDPE Pipe



### TYPICAL APPLICATIONS

Weholite structural profile wall HDPE pipe is design for a variety of applications including multiple stormwater & wastewater applications, potable water, irrigation, hydroelectric, relining, culverts, odour control and ventilation, marine installation (intakes and outfalls), geothermal vaults, above and below ground tanks, pump stations and manholes.



### MANUFACTURING STANDARD

ASTM F894 - Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe. Weholite is certified by 3<sup>rd</sup> party auditors<sup>1</sup> to confirm that it meets the requirements of ASTM F894.

### SIZES AND AVAILABLE LENGTHS

Weholite is available in diameters from 18 in (460 mm) to 132 in (3355 mm). For sizes ≤ 96" NPS, the standard laying lengths are 16.5 ft/5.03 m, 25 ft/7.62 m and 50 ft/15.24 m. For sizes > 96" NPS, the standard laying lengths are 20 ft/6.09 m and 40 ft/12.19 m.

### PRESSURE RATINGS

Weholite is designed for standard working pressures up to 14.5 psi (1 bar). With profile wall design modifications, continuous pressures up to 29 psi (2 bar) can be accommodated.

<sup>1</sup>Le Bureau de normalisation du Québec (BNQ) for Huntsville plant, NSF International for Huntsville and Saskatoon plant.

## TYPICAL MATERIAL PROPERTIES<sup>1</sup>

Weholite is manufactured from a high-density polyethylene pressure-grade material which meets or exceeds the minimum cell classification requirements of 334433C for PE plastic compound as specified in ASTM F894 when classified in accordance with ASTM D3350.

Cell class per ASTM D3350	Density (g/cm <sup>3</sup> )	Melt Index (g/10 minutes)	Flexural Modulus (psi)	Tensile Strength at Yield (psi)	Slow Crack Resistance, PENT (hours)	HDB 9(psi)
334433C (minimum per ASTM F894)	>0.940 - 0.947	<0.4-0.15	80,000 to <110,000	3000 to <3500	unspecified	1250
345464C (PE3608)	>0.940 - 0.947	<0.15	110,000 to <160,000	3000 to <3500	>100	1600
445574C (PE4710)	>0.947 - 0.955	<0.15	110,000 to <160,000	3500 to <4000	>500	1600

## JOINING METHODS

Extrusion welding joint (watertight), threaded joints (sand and silt tight), Weholite couplers (meets ASTM D3212)



## SURGE PRESSURE FOR CONTINUOUS PRESSURE APPLICATIONS

The mathematical formula for determining the surge pressure associated with water flow in Weholite® is the same as that for a solid-wall polyethylene pressure pipe. i.e., occasional surge pressure may induce pressure surges of 2 times the working pressure rating of the pipe, and recurring surge pressure may induce pressure surges of 1.5 times the working pressure rating of the pipe. Please refer to the Plastics Pipe Institute (PPI) Handbook, Chapter 6, for more information.

## TEMPERATURE RANGE

The maximum allowable temperature of the pipe contents for long-term applications is 140°F/ 60. Short-term applications up to 180°F/ 82°C are permissible. For buried applications, exposure to variable temperatures is generally not a design concern because of the restraining action of the surrounding soil and the inherent stress relieving characteristics of the pipe material.

## WEATHERABILITY

Weholite is produced from the PE compound containing a minimum of 2% carbon black. It has been demonstrated that this amount of well-dispersed very fine particle carbon black is sufficient protection for continuous outdoor service.

<sup>1</sup>Typical properties will vary within specification limits.

## CORROSION AND CHEMICAL RESISTANCE

Weholite HDPE pipe will not rust, rot, pit, corrode, tuberculate or support biological growth. It is resistant to corrosion resulting from the presence of Hydrogen Sulfide and pH values ranging from 2 to 13. HDPE resists corrosion from a wide variety of chemicals due to its strong resistance. Please refer to the PPI TR-19 *Chemical Resistance of Thermoplastic Piping Materials*, which has been developed as an informative guide on the resistance of thermoplastic materials to chemical attack.

## BENDING RADIUS

The long-term bend radius of Weholite is 200 times the pipe OD. Only pipes joined by extrusion-welded joints are suitable for bending.

## INSTALLATION

Please refer to the ASTM D2321-*Standard Practice for Underground Installation of Thermoplastic Pipe for Sewer and Other Gravity – Flow Applications*, as it serves as the basis for installing Weholite pipe successfully.

## MAJOR DIMENSIONS

	NPS		OD ave		OD max		ID min		Shipping Weight		Burial Depth min <sup>1</sup>		Unconstrained Pipe Wall Buckling <sup>2</sup>	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lbs/ft)	(kg/m)	(ft)	(m)	kPa	psi
RSC160	18	460	20.3	516	20.8	528	17.6	448	17	25	2.0	0.61	72	10.5
	19.5	495	22.0	558	22.4	570	19.1	486	19	28	2.0	0.61	67	9.6
	21	530	23.6	600	24.1	612	20.6	524	20	30	2.0	0.61	62	9.0
	24	609.6	26.9	684	27.4	697	23.6	600	23	35	2.0	0.61	54	7.9
	27	690	30.2	768	30.8	781	26.6	676	27	40	2.0	0.61	49	7.1
	30	760	33.5	851	34.0	864	29.6	752	30	44	2.0	0.61	42	6.1
	33	840	36.7	932	37.2	946	32.6	829	34	51	2.0	0.61	38	5.6
	36	910	40.5	1028	41.0	1043	35.6	905	40	59	2.0	0.61	46	6.7
	40	1016	44.5	1130	45.1	1145	39.6	1006	44	66	2.0	0.61	34	5.0
	42	1070	46.5	1181	47.1	1196	41.6	1056	46	69	2.0	0.61	30	4.3
	48	1220	52.8	1341	53.5	1359	47.5	1207	56	83	2.0	0.61	24	3.5
	54	1370	59.4	1509	60.2	1529	53.5	1358	71	106	2.0	0.61	25	3.6
	60	1520	65.4	1662	66.3	1683	59.4	1509	79	117	2.0	0.61	18	2.7
	66	1680	71.9	1825	72.8	1849	65.4	1660	95	141	2.0	0.61	18	2.6
	72	1830	78.3	1989	79.3	2014	71.3	1811	111	165	2.0	0.61	17	2.5
	78	1980	84.7	2152	85.8	2179	77.2	1961	127	190	2.0	0.61	16	2.3
	84	2130	91.1	2315	92.3	2344	83.1	2112	146	217	2.0	0.61	16	2.3
90	2290	97.5	2478	98.8	2509	89.1	2263	164	245	2.0	0.61	15	2.2	
96	2440	103.5	2630	104.8	2663	95.0	2414	175	261	2.0	0.61	12	1.8	
102	2591	110.0	2793	111.3	2828	101.0	2565	197	293	2.0	0.61	12	1.8	
108	2740	116.3	2955	117.8	2992	106.9	2716	219	327	2.0	0.61	12	1.7	
120	3050	129.1	3280	130.7	3320	118.8	3018	265	395	2.0	0.61	11	1.6	
132	3355	141.5	3594	143.2	3638	130.7	3319	304	453	2.0	0.61	10	1.4	

<sup>1</sup>Minimum covers presented were calculated assuming Class II backfill material compacted to 95% SPD, no hydrostatic pressure and with AASHTO HS-25 or CL-625 vehicle loading. For maximum burial depths of Weholite refer to Infra Pipes online burial calculator available at [www.infrapipes.com](http://www.infrapipes.com)

<sup>2</sup>Factor of Safety used in calculations is 1.5. Pipe ovality is assumed not to exceed 2%. Poisson's ratio of 0.35 has been used. 10 hr / 100° F material modulus of elasticity value of 46,900 psi has been used. Use PPI's Engineering Handbook, Chapter 6 to determine 'collapse resistance' characteristics at temperatures and load durations different from those indicated above.

**MAJOR DIMENSIONS (CONTINUED)**

	NPS		OD ave		OD max		ID min		Shipping Weight		Burial Depth min <sup>1</sup>		Unconstrained Pipe Wall Buckling <sup>2</sup>	
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(lbs/ft)	(kg/m)	(ft)	(m)	kPa	psi
<b>RSC250</b>	33	840	37.5	952	38.0	966	32.6	829	37	55	2.0	0.61	59	8.6
	36	910	40.8	1036	41.4	1051	35.6	905	42	63	2.0	0.61	55	8.0
	40	1016	44.8	1138	45.4	1153	39.6	1006	48	71	2.0	0.61	41	6.0
	42	1070	46.9	1192	47.6	1209	41.6	1056	52	77	2.0	0.61	40	5.7
	48	1220	53.4	1357	54.1	1375	47.5	1207	64	195	2.0	0.61	35	5.1
	54	1370	59.9	1521	60.7	1541	53.5	1358	78	116	2.0	0.61	31	4.5
	60	1520	66.3	1684	67.2	1706	59.4	1509	93	139	2.0	0.61	29	4.1
	66	1680	72.7	1847	73.7	1871	65.3	1660	109	162	2.0	0.61	26	3.8
	72	1830	79.1	2010	80.2	2036	71.3	1811	126	187	2.0	0.61	24	3.5
	78	1980	85.5	2173	86.6	2201	77.2	1961	143	214	2.0	0.61	22	3.3
	84	2130	92.0	2336	93.1	2366	83.2	2112	163	243	2.0	0.61	21	3.1
	90	2290	98.3	2498	99.6	2530	89.1	2263	183	273	2.0	0.61	20	2.9
	96	2440	104.7	2660	106.1	2694	95.0	2414	204	304	2.0	0.61	19	2.7
	102	2591	111.1	2822	112.5	2858	101.0	2565	227	338	2.0	0.61	18	2.6
108	2740	117.5	2984	119.0	3022	106.9	2716	249	372	2.0	0.61	17	2.5	
120	3050	130.2	3308	131.9	3350	118.8	3018	299	445	2.0	0.61	16	2.3	
132	3355	143.0	3631	144.8	3677	130.7	3319	339	505	2.0	0.61	15	2.1	
<b>RSC400</b>	90	2290	100.2	2545	101.6	2581	90.9	2309	228	339	2.0	0.61	36	5.2
	96	2440	106.2	2697	107.6	2733	97.0	2463	242	360	2.0	0.61	30	4.3
	102	2590	113.0	2870	114.5	2908	103.0	2617	274	408	2.0	0.61	30	4.4
	108	2740	119.0	3023	120.5	3061	109.1	2771	289	430	2.0	0.61	26	3.7
	120	3050	131.9	3350	133.6	3393	121.2	3079	366	545	2.0	0.61	25	3.7

<sup>1</sup>Minimum covers presented were calculated assuming Class II backfill material compacted to 95% SPD, no hydrostatic pressure and with AASHTO HS-25 or CL-625 vehicle loading. For maximum burial depths of Weholite refer to Infra Pipes online burial calculator available at [www.infrapipes.com](http://www.infrapipes.com)

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