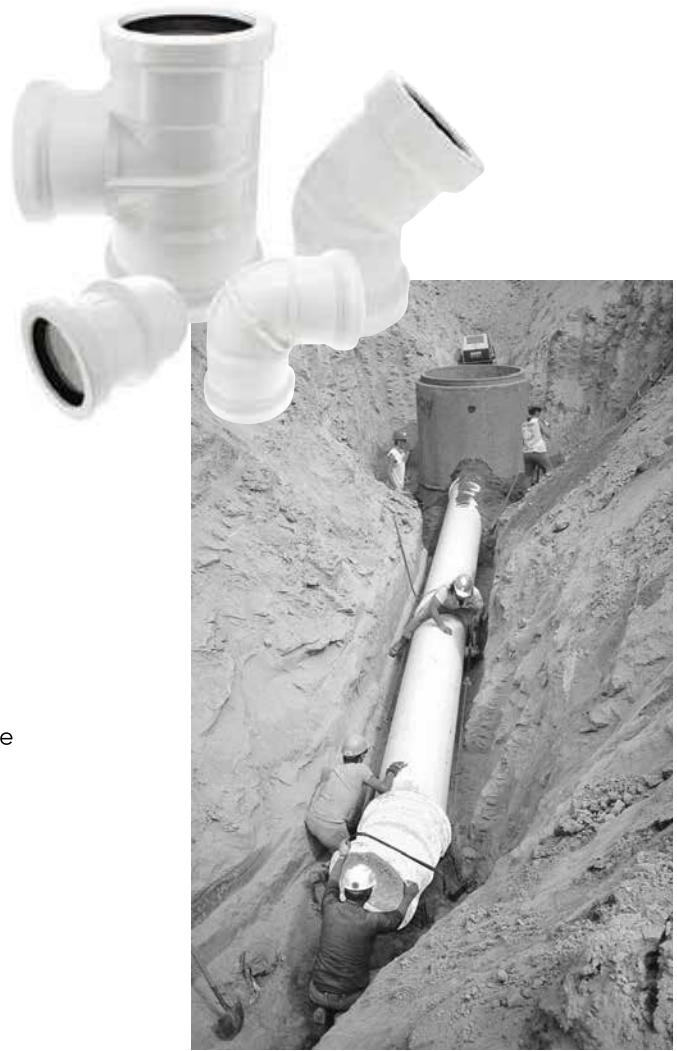


## CYCLETOUGH® PIPING SYSTEMS

CycleTough piping systems are specially designed for applications where pressures are expected to cycle up and down repeatedly, such as sewage forcemains, irrigation systems and other applications. One of the most important things to remember with CycleTough systems is that the fittings are made with PVC compound that has the same hydrostatic design basis (HDB) as the pipe. Always specify a complete system of pipes and fittings from the same manufacturer to ensure matching fittings.



### Applications:

Sewage forcemains, irrigation.  
Rural water supply, water distribution and transmission.

### Standards

#### CycleTough Pipe

**CSA B137.3** – Rigid Poly (Vinyl Chloride) (PVC) Pipe for Pressure Applications

**ASTM D2241** – Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR) PVC, ASTM D2241.

**NSF-61-G** listed for potable water

**BNQ 3660-950**



### CycleTough Fittings

**CSA B137.2**

**ASTM 3139**



### Pressure Ratings

CycleTough pipe is available in long term pressure ratings from 100 to 200 psi.

For more information on how these ratings are calculated, please refer to section 3.

SDR	Long Term Rating (LTR)		Short Term Rating (STR)	
	psi	kPa	psi	kPa
41	100	690	160	1,100
32.5	125	860	200	1,380
26	160	1,100	256	1,770
21	200	1,380	320	2,210



## CYCLETOUGH® PIPING SYSTEMS

### Short Form Specifications

#### Pipes

IPSOD PVC pipe shall be manufactured from PVC compound with ASTM D1784 cell class 12454. PVC pipe will have a minimum hydrostatic design basis (HDB) of 4000 psi and a short-term strength of 6400 psi. Pipe shall be certified to CSA B137.3 and conform to ASTM B2241.

#### Fittings

Injection-molded PVC fittings shall be made from PVC compound with a minimum HDB of 4000 psi and have a pressure rating of 200 psi.

Fabricated fittings shall be made from sections of pipe certified to CSA B137.3 and fittings shall also be certified to CSA B137.3.

All pipes and fittings shall be listed to NSF Standard 61 and shall be color coded white.

### Dimensions

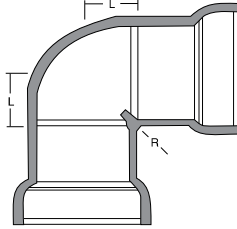
CycleTough pipe and fittings are manufactured with an Iron Pipe Size outside diameter (IPSOD). This outside diameter configuration is consistent with that used for Schedule piping (Sch. 40 and 80) as well as steel pipe sizes.

Size		Series 100 (SDR41)						Series 125 (SDR32.5)					
		Avg. ID		Min. Wall Thickness		Avg. OD		Avg. ID		Min. Wall Thickness		Avg. OD	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
4	100	4.28	108	0.11	2.78	4.50	114	4.21	107	0.14	3.50	4.50	114
6	150	6.28	160	0.16	4.12	6.63	168	6.19	157	0.20	5.18	6.63	168
8	200	8.18	208	0.21	5.32	8.62	219	8.06	205	0.27	6.72	8.62	219
10	250	10.19	259	0.26	6.66	10.75	273	10.05	255	0.33	8.40	10.75	273
12	300	12.09	307	0.31	7.90	12.75	324	11.92	303	0.39	9.96	12.75	324
14	350	13.28	337	0.34	8.66	14.00	356	13.09	333	0.43	10.9	14.00	356
16	400	15.17	385	0.39	9.90	16.00	406	14.96	380	0.49	12.5	16.00	406
18	450	17.07	434	0.44	11.1	18.00	457	16.82	427	0.56	14.1	18.00	457
20	500	18.99	482	0.49	12.4	20.00	508	18.70	475	0.61	15.6	20.00	508
24	600	22.76	578	0.59	14.9	24.00	610	22.43	570	0.74	18.8	24.00	610

Size		Series 160 (SDR26)						Series 200 (SDR21)					
		Avg. ID		Min. Wall Thickness		Avg. OD		Avg. ID		Min. Wall Thickness		Avg. OD	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1-1/2	40	1.73	44.0	0.08	2.02	1.90	48.3	1.71	43.0	0.09	2.28	1.90	48.3
2	50	2.18	55.5	0.09	2.30	2.38	60.4	2.14	54.0	0.11	2.86	2.38	60.4
2-1/2	65	2.64	67.1	0.11	2.78	2.87	73.0	2.58	66.0	0.14	3.48	2.87	73.0
3	75	3.22	81.7	0.14	3.42	3.50	88.9	3.15	80.0	0.17	4.24	3.50	88.9
4	100	4.13	105	0.17	4.38	4.50	114	4.05	103	0.21	5.44	4.50	114
6	150	6.09	155	0.26	6.48	6.63	168	5.96	151	0.32	8.02	6.63	168
8	200	7.92	201	0.33	8.42	8.62	219	7.76	197	0.41	10.4	8.62	219
10	250	9.87	251	0.41	10.5	10.78	273	9.67	246	0.51	13.0	10.75	273
12	300	11.72	298	0.49	12.4	12.75	324	11.47	291	0.61	15.4	12.75	324
14	350	12.86	327	0.54	13.7	14.00	356	12.59	312	0.67	16.9	14.00	356
16	400	14.70	373	0.61	15.6	16.00	406	14.38	365	0.76	19.4	16.00	406
18	450	16.53	420	0.69	17.6	18.00	457	16.18	411	0.86	21.8	18.00	457
20	500	18.36	466	0.77	19.6	20.00	508	17.98	457	0.95	24.2	20.00	508
24	600	22.04	560	0.93	23.5	24.00	610	21.58	548	1.14	29.0	24.00	610

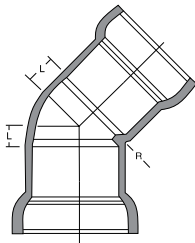
## CYCLETOUGH® PIPING SYSTEMS

### 90° Elbow G x G



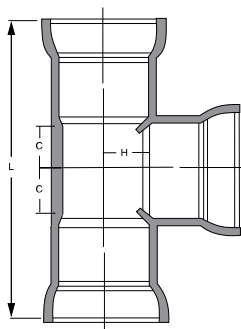
Size		L		R	
in	mm	in	mm	in	mm
2	50	1.18	29.5	0.75	18.8
2-1/2	65	1.80	45.0	1.00	25.0
3	75	2.00	50.0	1.00	25.0
4	100	2.20	55.0	1.00	25.0
6	150	2.80	70.0	1.25	31.3
8	200	4.87	121.8	1.50	37.5

### 45° Elbow G x G



Size		L		R	
in	mm	in	mm	in	mm
2	50	0.60	15.0	0.75	18.8
2-1/2	65	1.80	45.0	1.00	25.0
3	75	1.12	28.0	1.00	25.0
4	100	1.10	27.5	1.00	25.0
6	150	1.60	40.0	1.25	31.3
8	200	2.40	60.0	1.50	37.5

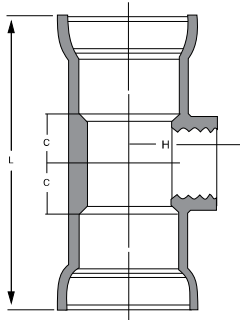
### Tee G x G x G



Size		C		H		L	
in	mm	in	mm	in	mm	in	mm
2	50	1.30	32.5	1.10	27.5	8.20	208.3
2-1/2	65	1.67	41.8	1.63	40.8	10.10	256.5
3	75	1.99	49.8	1.99	49.8	11.40	289.6
4	100	2.57	64.3	2.65	66.3	13.10	332.7
6	150	3.76	94.0	3.77	94.3	15.50	394.7
8	200	4.91	122.8	4.91	122.8	22.25	565.2

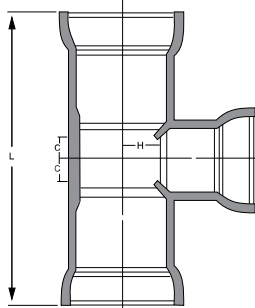
# CYCLETOUGH® PIPING SYSTEMS

## Tap Service Tee - NPT Outlet



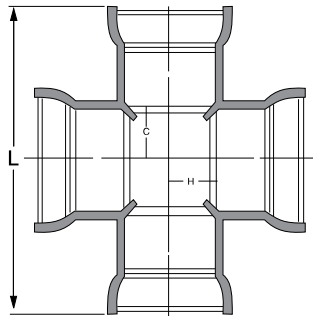
Size		C		H		L	
in	mm	in	mm	in	mm	in	mm
2 x 1/2	50 x 15	1.40	35.0	2.15	53.8	7.10	177.5
2 x 3/4	50 x 20	1.40	35.0	2.15	53.8	7.10	177.5
2 x 1	50 x 25	1.40	35.0	2.15	53.8	7.10	177.5
2 x 1-1/4	50 x 32	1.40	35.0	2.15	53.8	7.10	177.5
2 x 1-1/2	50 x 40	1.40	35.0	2.15	53.8	7.70	195.6
2-1/2 x 1/2	65 x 15	1.45	36.3	2.50	62.5	7.90	197.5
2-1/2 x 3/4	65 x 20	1.45	36.3	2.50	62.5	7.90	197.5
2-1/2 x 1	65 x 25	1.45	36.3	2.50	62.5	7.90	197.5
2-1/2 x 1-1/4	65 x 32	1.45	36.3	2.50	62.5	7.90	197.5
2-1/2 x 1-1/2	65 x 40	1.45	36.3	2.50	62.5	7.90	197.5
2-1/2 x 2	65 x 50	1.45	36.3	2.50	62.5	8.50	215.9
3 x 1/2	75 x 15	1.50	37.5	2.70	67.5	9.75	243.8
3 x 3/4	75 x 20	1.50	37.5	2.70	67.5	9.75	243.8
3 x 1	75 x 25	1.50	37.5	2.70	67.5	10.35	262.9
3 x 1-1/4	75 x 32	1.50	37.5	2.70	67.5	10.35	262.9
3 x 1-1/2	75 x 40	1.50	37.5	2.70	67.5	10.35	262.9
3 x 2	75 x 50	1.50	37.5	2.70	67.5	10.35	262.9
4 x 1/2	100 x 15	1.56	39.0	3.10	77.5	10.17	254.3
4 x 3/4	100 x 20	1.56	39.0	3.10	77.5	10.17	254.3
4 x 1	100 x 25	1.56	39.0	3.10	77.5	10.77	273.6
4 x 1-1/4	100 x 32	1.56	39.0	3.10	77.5	10.77	273.6
4 x 1-1/2	100 x 40	1.56	39.0	3.10	77.5	10.77	273.6
4 x 2	100 x 50	1.56	39.0	3.10	77.5	10.77	273.6
6 x 1/2	150 x 15	1.80	45.0	3.96	99.0	13.00	325.0
6 x 3/4	150 x 20	1.80	45.0	3.96	99.0	13.00	325.0
6 x 1	150 x 25	1.80	45.0	3.96	99.0	13.60	345.4
6 x 1-1/4	150 x 32	1.80	45.0	3.96	99.0	13.00	325.0
6 x 1-1/2	150 x 40	1.80	45.0	3.96	99.0	13.60	345.4
6 x 2	150 x 50	1.80	45.0	3.96	99.0	13.60	345.4

# CYCLETOUGH® PIPING SYSTEMS



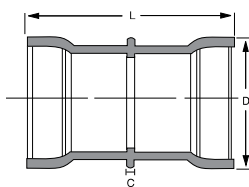
## Reducing Tee - G x G x G

Size		C		H		L	
in	mm	in	mm	in	mm	in	mm
2 x 1-1/2	50 x 40	1.30	32.5	1.10	27.5	8.20	208.3
2-1/2 x 2	65 x 50	1.67	41.8	1.63	40.8	10.10	256.5
3 x 1-1/2	75 x 40	1.85	46.3	1.60	40.0	11.40	289.6
3 x 2	75 x 50	1.85	46.3	1.60	40.0	11.40	289.6
3 x 2-1/2	75 x 65	1.90	47.5	1.60	40.0	11.40	289.6
4 x 2	100 x 50	1.90	47.5	2.00	50.0	11.90	302.3
4 x 2-1/2	100 x 65	1.90	47.5	2.00	50.0	11.90	302.3
4 x 3	100 x 75	1.90	47.5	2.00	50.0	11.90	302.3
6 x 2	150 x 50	2.40	60.0	2.80	70.0	15.50	393.7
6 x 2-1/2	150 x 65	2.40	60.0	2.80	70.0	15.50	393.7
6 x 3	150 x 75	2.40	60.0	2.80	70.0	15.50	393.7
6 x 4	150 x 100	2.40	60.0	2.80	70.0	15.50	393.7
8 x 2	200 x 50	3.85	96.3	4.87	121.8	20.10	510.5
8 x 3	200 x 75	3.85	96.3	4.87	121.8	20.10	510.5
8 x 4	200 x 100	3.85	96.3	4.88	122.0	20.10	510.5
8 x 6	200 x 150	3.85	96.3	4.88	122.0	20.10	510.5



## Cross G x G x G x G

Size		C		H		L	
in	mm	in	mm	in	mm	in	mm
4	100	4.00	100.0	4.00	100.0	13.10	332.7
6	150	4.50	112.5	4.50	112.5	16.60	421.6

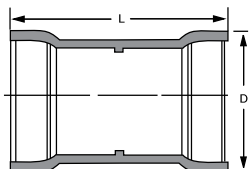


## Stop Coupling G x G

Size		L		D	
in	mm	in	mm	in	mm
2	50	8.25	209.6	3.35	83.8
2-1/2	65	9.00	228.6	4.15	103.8
3	75	9.50	241.3	5.00	125.0
4	100	11.00	279.4	6.13	153.3
6	150	12.00	304.8	8.73	218.3
8	200	12.30	307.5	10.62	265.5

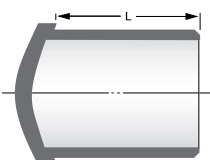
# CYCLETOUGH® PIPING SYSTEMS

## Repair Coupling G x G



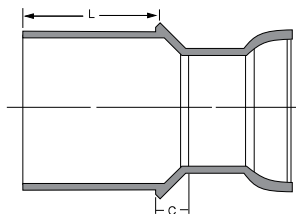
Size		L		D	
in	mm	in	mm	in	mm
2	50	8.25	209.6	3.35	83.8
2-1/2	65	9.00	228.6	4.15	103.8
3	75	9.50	241.3	5.00	125.0
4	100	11.00	279.4	6.13	153.3
6	150	12.00	304.8	8.73	218.3
8	200	12.30	307.5	10.62	265.5

## Permanent Plug Spigot



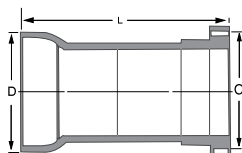
Size		L	
in	mm	in	mm
1-1/2	40	2.50	62.5
2	50	2.50	62.5
2-1/2	65	3.50	87.5
3	75	3.50	87.5
4	100	3.75	93.8
6	150	4.50	112.5

## Increaser Bushing - G x Sp



Size		L		C	
in	mm	in	mm	in	mm
1-1/2 x 2	40 x 50	2.40	60.0	0.20	5.0
2 x 2-1/2	50 x 65	2.40	60.0	0.20	5.0
2 x 3	50 x 75	3.40	85.0	0.55	13.8
2-1/2 x 3	65 x 75	3.40	85.0	0.38	9.5
2 x 4	50 x 100	3.00	75.0	0.40	10.0
2-1/2 x 4	65 x 100	3.00	75.0	0.40	10.0
3 x 4	75 x 100	3.00	75.0	0.40	10.0
2 x 6	50 x 150	4.30	107.5	0.50	12.5
2-1/2 x 6	65 x 150	4.30	107.5	0.50	12.5
3 x 6	75 x 150	4.30	107.5	0.50	12.5
4 x 6	100 x 150	4.30	107.5	0.50	12.5
4 x 8	100 x 200	5.10	127.5	0.60	15.0
6 x 8	150 x 200	5.10	127.5	0.60	15.0

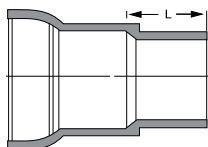
# CYCLETOUGH® PIPING SYSTEMS



## Adapter - Flange x Gasket Bell

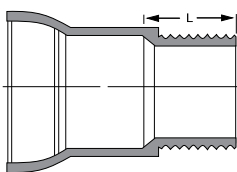
Size		C		D		L	
in	mm	in	mm	in	mm	in	mm
1-1/2	40	3.85	96.3	5.00	125.0	4.25	106.3
2	50	4.75	118.8	6.00	150.0	4.75	118.8
2-1/2	65	5.50	137.5	7.00	175.0	5.75	143.8
3	75	6.00	150.0	7.50	187.5	6.50	162.5
4	100	7.48	187.0	9.02	225.5	10.52	263.0
6	150	9.55	238.8	10.97	274.3	13.48	337.0
8	200	11.75	293.8	13.50	337.5	12.00	300.0

## Spigot Adapter G x Sp



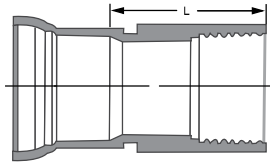
Size		L	
in	mm	in	mm
1-1/2	40	1.50	37.5
2	50	1.80	45.0
2-1/2	65	2.00	50.0
3	75	2.10	52.5
4	100	2.30	57.5
6	150	3.10	77.5

## Male Adapter G x Male Pipe Thread



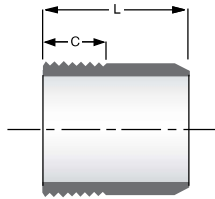
Size		L	
in	mm	in	mm
1-1/2	40	1.05	26.3
2	50	1.20	30.0
2-1/2	65	1.55	38.8
3	75	2.10	52.5
4	100	2.25	56.3
6	150	2.50	62.5

# CYCLETOUGH® PIPING SYSTEMS



## Adapter Bell x Female IPT

Size		L	
in	mm	in	mm
1-1/2	40	2.60	65.0
2	50	3.00	75.0
2-1/2	65	3.80	95.0
3	75	4.10	102.5
4	100	4.40	110.0
6	150	5.40	135.0



## Adapter - PE (Plain End) x Male Pipe Thread

Size		L		C	
in	mm	in	mm	in	mm
3	75	4.30	107.5	2.00	50.0
4	100	4.40	110.0	2.25	56.3
6	150	5.90	147.5	2.50	62.5