

FILL HEIGHTS FOR CORRUGATED METAL ROUND ROADWAY PIPE

PIPE DIA IN INCHES	AREA IN SQ FT	PIPE CHARACTERISTICS			MINIMUM COVER (INCHES)	MAXIMUM FILL HEIGHT IN FEET FOR METAL PIPE GAUGES BELOW			
		CORRUGATED STEEL		ALUMINUM		14	12	10	8
		2 2/3' x 1/2'	3' x 1' OR 5' x 1'	2 2/3' x 1/2'					
15	1.2	●	●	●	12'	213	298	300+	300+
18	1.8	●	●	●	12'	177	248	300+	300+
24	3.1	●	●	●	12'	133	186	239	292
30	5	●	●	●	12'	60	84	---	---
36	7	●	●	●	12'	106	149	191	234
42	10	●	●	●	12'	48	67	---	---
48	13	●	●	●	12'	88	124	159	195
54	16	●	●	●	12'	90	127	163	200
60	20	●	●	●	12'	40	56	72	---
66	24	●	●	●	12'	75	106	137	167
72	28	●	●	●	12'	77	108	140	172
78	33	●	●	●	12'	---	48	62	---
84	38	●	●	●	12'	66	93	120	146
90	44	●	●	●	12'	68	95	122	150
96	50	●	●	●	12'	---	42	54	66
102	57	●	●	●	12'	56	80	104	128
108	64	●	●	●	12'	60	84	109	133
114	71	●	●	●	12'	---	36	48	59
120	79	●	●	●	12'	---	68	89	109
					12'	54	75	98	119
					12'	---	42	53	---
					12'	---	58	75	93
					12'	49	68	88	108
					12'	---	---	64	80
					12'	44	62	81	99
					12'	---	---	---	38
					12'	41	58	74	92
					12'	---	---	---	56
					12'	38	54	69	85
					12'	36	50	65	80
					12'	33	47	61	74
					12'	31	44	57	70
					12'	---	42	54	66
					12'	---	38	50	61
					12'	---	35	46	56

MAX FILL HEIGHTS FOR CONCRETE ROUND ROADWAY PIPE

PIPE DIA IN INCHES	TYPE OF BEDDING					
	CLASS C BEDDING			CLASS CI BEDDING		
	CLASS OF PIPE		CLASS OF PIPE	CLASS OF PIPE		CLASS OF PIPE
15	19'	28'	43'	34'	51'	∞
18	*	*	*	*	*	*
24	*	*	42'	*	*	*
30	*	*	*	*	*	*
36	18'	*	*	*	*	*
42	*	*	*	*	*	*
48	*	29'	*	*	*	*
54	16'	24'	34'	34'	51'	∞
60	*	*	*	*	*	*
66	*	*	*	*	*	*
72	*	*	*	*	*	*
78	*	*	*	*	*	*
84	*	*	*	*	*	*

FILL HEIGHTS FOR CORRUGATED METAL AND STRUCTURAL PLATE ROADWAY ARCH PIPE

EQUIVALENT PIPE DIAMETER IN INCHES	CORRUGATED METAL PIPE ARCH			STRUCTURE PLATE PIPE ARCH		MINIMUM GAUGE OR PLATE THICKNESS	SPAN	RISE	MINIMUM COVER (INCHES)	MAXIMUM FILL HEIGHT (FEET)		
	STEEL		ALUM.	STEEL	ALUMINUM					CORNER BEARING PRESSURE		
	2 2/3' x 1/2'	3' x 1' OR 5' x 1'	2 2/3' x 1/2'	6' x 2'	9' x 2 1/2'					4000 LBS	6000 LBS	8000 LBS
15	●	●	●			14	17'	13'	18	13	15	---
18	●	●	●			14	21'	15'	18	15	---	---
24	●	●	●			14	28'	20'	18	14	15	---
30	●	●	●			14	35'	24'	18	9	14	---
36	●	●	●			14	42'	29'	18	9	14	---
42	●	●	●			14	49'	33'	18	7	13	---
48	●	●	●			14	50'	31'	18	7	12	---
54	●	●	●			12	49'	33'	18	7	12	---
60	●	●	●			10	57'	38'	18	7	12	---
66	●	●	●			12	64'	43'	18	7	12	---
72	●	●	●			14	65'	40'	18	7	12	---
78	●	●	●			10	64'	43'	18	7	12	---
84	●	●	●			8	71'	47'	18	7	12	---
90	●	●	●			8	72'	44'	18	7	12	---
96	●	●	●			14	73'	55'	18	15	---	---
102	●	●	●			0.109"	6'-4"	4'-9"	18	15	---	---
108	●	●	●			0.10"	5'-11"	5'-4"	18	15	---	---
114	●	●	●			8	83'	57'	18	13	---	---
120	●	●	●			14	81'	59'	18	15	---	---
126	●	●	●			0.109"	7'-0"	5'-1"	18	15	---	---
132	●	●	●			0.10"	6'-8"	5'-7"	18	15	---	---
138	●	●	●			14	87'	63'	18	14	15	---
144	●	●	●			0.109"	7'-8"	5'-5"	18	15	---	---
150	●	●	●			0.10"	7'-4"	5'-11"	18	15	---	---
156	●	●	●			12	95'	67'	18	12	15	---
162	●	●	●			0.109"	8'-2"	5'-9"	24	11	15	---
						0.10"	8'-0"	6'-2"	18	14	15	---
						12	103'	71'	24	11	15	---
						0.109"	9'-4"	6'-3"	18	10	15	---
						0.10"	8'-7"	6'-6"	18	13	15	---
						12	112'	75'	18	10	15	---
						0.109"	9'-9"	6'-7"	18	10	15	---
						0.10"	9'-6"	6'-10"	18	13	15	---
						12	117'	79'	18	10	15	---
						0.109"	10'-8"	6'-11"	18	9	13	---
						0.10"	10'-5"	7'-3"	18	12	15	---
						10	128'	83'	18	10	14	---
						0.109"	11'-5"	7'-3"	18	7	12	15
						0.125"	11'-2"	7'-6"	18	15	---	---
						0.109"	11'-10"	7'-7"	18	7	12	15
						0.125"	11'-8"	7'-10"	18	14	---	---
						0.109"	12'-6"	7'-11"	18	6	11	15
						0.125"	12'-5"	8'-2"	18	13	---	---
						0.109"	13'-5"	8'-5"	18	5	7	14
						0.15	13'-1"	8'-5"	18	12	15	---
						0.109"	14'-1"	8'-9"	18	5	11	14
						0.15	13'-10"	8'-9"	18	12	15	---
						0.138"	14'-0"	9'-8"	18	10	13	---
						0.175"	14'-9"	9'-2"	18	10	15	---
						0.138"	14'-5"	10'-0"	18	10	13	---
						0.175"	15'-6"	9'-6"	18	10	15	---
						0.20"	15'-4"	10'-4"	18	10	13	---
						0.138"	16'-2"	9'-9"	36	10	15	---
						0.25"	15'-10"	10'-8"	24	9	12	---
						0.138"	16'-11"	10'-1"	36	9	14	---
							17'-0"	11'-2"	*	8	8	12

FILL HEIGHTS FOR CORRUGATED METAL SIDEDRAIN PIPE (STEEL & ALUMINUM)

PIPE DIA	MIN. COVER	GAUGE	CORRUGATION	MAX FILL HT
15"	24"	16	2 2/3' x 1/2'	50 FT
18"	*	*	*	*
24"	*	*	*	*
30"	*	*	*	30 FT
36"	*	*	*	*
42"	*	*	*	*

FOR PIPE LOCATED WHERE FINISHED GRADE IS LESS THAN 24" FROM TOP OF PIPE, USE 14 GAUGE PIPE. FOR FILL HEIGHTS GREATER THAN THOSE SHOWN, SEE ROADWAY PIPE TABLES.

FILL HEIGHTS FOR HELICAL RIBBED ROADWAY PIPE 7/8" x 3/4" CORRUGATIONS

PIPE DIAMETER IN INCHES	THICKNESS AND SPECIFIED GAUGE			
	(.079") 14		(.109") 12	
	MIN COVER	MAX FILL	MIN COVER	MAX FILL
18"	1.0'	96'	---	---
21"	1.0'	82'	1.0'	138'
24"	1.0'	72'	1.0'	121'
30"	1.0'	57'	1.0'	97'
36"	1.0'	48'	1.0'	80'
42"	1.0'	41'	1.0'	69'
48"	1.0'	36'	1.0'	60'
54"	1.5'	32'	1.0'	53'
60"	1.5'	28'	1.0'	48'
66"	---	---	1.5'	44'
72"	---	---	1.5'	40'

MAX FILL HEIGHTS FOR CONCRETE ARCH RDWY PIPE

EQUIV. PIPE DIAMETER IN INCHES	SPAN	RISE	MINIMUM COVER	CLASS III REINF FILL HEIGHT
15"	18"	11"	12"	15 FT
18"	22"	14"	*	*
24"	29"	18"	*	*
30"	36"	23"	*	*
36"	44"	27"	*	*
42"	51"	31"	*	*
48"	59"	36"	*	*
54"	65"	40"	*	*
60"	73"	45"	*	*
72"	88"	54"	*	*

NOTE: FOR CONCRETE ARCH PIPE ONLY A SINGLE REINFORCED WALL WILL BE ALLOWED FOR PIPE WITH AN EQUIVALENT DIAMETER OF 42" OR LESS.

FILL HEIGHTS FOR CONCRETE SIDEDRAIN PIPE *

TYPE	SIZE	FILL HEIGHT
PLAIN CONC	24" OR LESS	1.5' TO 10'
REINF CONC CLASS II	ALL SIZES	1.5' TO 10'

* APPLIES TO ROUND AS WELL AS ARCH PIPE. FILL HEIGHTS SHOWN APPLY TO STORM SEWER PIPE AS WELL AS SIDEDRAIN PIPE. BEDDING NOT REQUIRED FOR SIDEDRAIN PIPE.
BEDDING NOT REQUIRED FOR SIDEDRAIN PIPE.

FILL HEIGHTS FOR STRUCTURAL PLATE ROUND ROADWAY PIPE

PIPE DIA IN INCHES	AREA IN SQ FT	CORRUGATED STR PLATE PIPE		MINIMUM COVER (INCHES)	MAXIMUM FILL HEIGHT IN FEET FOR STEEL STRUCTURAL PLATE THICKNESSES SHOWN BELOW														
		STEEL	ALUMINUM		.109"	.138"	.168"	.188"	.218"	.249"	.280"	.311"	.342"						
		6' x 2'	9' x 2 1/2'																
60	20	●	●	12'	69	31	102	45	134	---	150	---	175	---	200	---	226	---	
72	28	●	●	12'	58	25	85	37	111	---	125	---	146	---	167	---	188	---	
84	38	●	●	12'	49	22	73	32	84	---	107	---	125	---	144	---	161	---	
96	50	●	●	12'	43	23	28	74	37	83	---	95	---	109	---	125	---	141	---
108	64	●	●	24'	38	17	57	25	74	33	83	---	97	---	111	---	125	---	
120	79	●	●	12'	35	15	51	22	67	30	74	---	87	---	100	---	113	---	
132	95	●	●	12'	32	14	46	20	61	27	67	---	79	---	91	---	102	---	
144	113	●	●	12'	29	14	42	18	56	25	62	---	73	---	83	---	94	---	
156	133	●	●	12'	26	13	39	17	51	23	57	---	67	---	77	---	86	---	
168	154	●	●	12'	24	12	36	16	48	21	53	---	62	---	71	---	80	---	
180	177	●	●	12'	23	11	34	15	44	19	50	---	58	---	67	---	75	---	
192	201	●	●	12'	---	---	32	14	42	17									