Underground Products Catalog

Specialized Precast Concrete Components

Tindall

Better Building Through Technology

Innovative Design Breeds Quality Structures

Tindall has the experience, commitment and know-how to design and manufacture quality precast utility products that solve today's underground challenges.

Partnering with Tindall improves project budgets and shortens schedules with in-stock or custom products delivered on time, ready for one-pass installation and designed for maintenance-free performance for decades to come.

Product Line Abbreviations

ABBREVIATION	DESCRIPTION
A	Adaptor
B	Monolithic Base
C	Cone
CGO	Hooded Frame And Grate
CI	Curb Inlet Box With Knockout Panel
CIA	Curb Inlet Adaptor
CIT	Curb Inlet Top
CMP	Corrugated Metal Pipe
DC	Double Chamber
DIA	Ditch Inlet Adaptor
DIT	Ditch Inlet Top
EBS	Exterior Butyl Rubber Sealant
F	Flat Grate
FST	Flat Slab Top
ft	Foot
G	ASTM Standard Round MH
GIT	Grate Inlet Top
GR	Grade Ring
HS10	Live Load For 8,000-lb Wheel Traffic
HS15	Live Load For 12,000-lb Wheel Traffic
HS20	Live Load For 16,000-lb Wheel Traffic
I	Cast Iron
KO	Multipurpose Box With Knockout Panels

ABBREVIATION	DESCRIPTION
L	Flanged Frame For Grate
LB	Extended Base (Lip Base)
MCT	Manhole Curb Top
MDT	Manhole Ditch Top
NC	North Carolina DOT Knock Out Box
PBS	Internal Butyl Rubber Sealant
PI	¾ Pipe Depth Invert
PIF	Full Pipe Depth Invert
R	Riser
RCP	Reinforced Concrete Pipe
RCT	Richland County Top
RSA	Round To Square Adaptor
S	Sanitary Sewer Ring And Cover
SC	Single Chamber
SW	Storm Sewer Ring And Cover
T	Monolithic Top Or Manhole Tee
TB	Trench Base
TC	Transition Cone
TG	Trench Grate
TS	Trench Slab Top
UV	Utility Vault
WI	Wing Inlet
300PSF	Live Load, Typical Non-Traffic Load

Tindall provides quality products manufactured in NPCA- and PCI-certified plants, delivered on time, ready for one-pass installation and designed for maintenance-free performance for decades to come.

KO Series

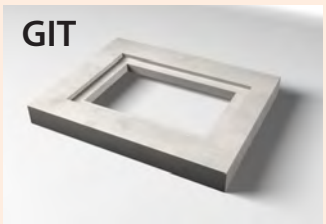
Storm structures to accommodate 12″ to 48″ diameter pipe

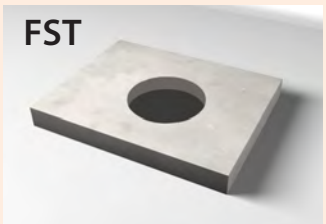
KO SERIES MULTIPURPOSE BOXES (WITH KNOCK-OUT PANELS)

Series	KO2424	KO2234	KO2636	KO3636	KO3446	KO4848	KO6262	NC2636	NC2444
Inside Dimensions, in.	24 x 24	22 x 34	26 x 36	36 x 36	34 x 46	48 x 48	62 x 62	26 x 36	24 x 44
Base Thickness, in.	5	6	6	6	6	6	6	6	6
Wall Thickness, in.	5	5	5	5	5	5	5	6	6
Live Load Rating	HS20	HS20	HS20	HS20	HS20	HS20	HS20	HS20	HS20

Lay Length, in.	Section	KO2424,lb	KO2234,lb	KO2636,lb	KO3636,lb	KO3446,lb	KO4848,lb	KO6262,lb	NC2636,lb	NC2444,lb
24	24B	1,437	—	—	—	—	—	—	—	—
36	36B	1,758	1,873	2,096	2,713	2,812	3,630	—	3,447	3,743
48	48B	2,079	2,299	2,589	3,392	3,542	4,519	—	—	—
60	60B	—	2,869	3,387	4,222	4,456	5,628	7,719	—	—
72	72B	—	3,244	3,825	4,795	5,189	6,652	9,765	—	—

KO SERIES TOPS





Section	Lay Length, in.	Opening, in.	Live Load Rating	KO3636, lb	KO3446, lb	KO4848, lb	KO6262, lb
Flat Top (FST)	4.5	24 (dia.)	HS20	715	845	1,224	2,035
Grate Inlet Top (GIT)	4	24 x 36	HS20	550	725	1,107	1,814
Round to Square Adaptor (RSA)	4.5	36 x 36	HS20	—	—	1,107	1,814

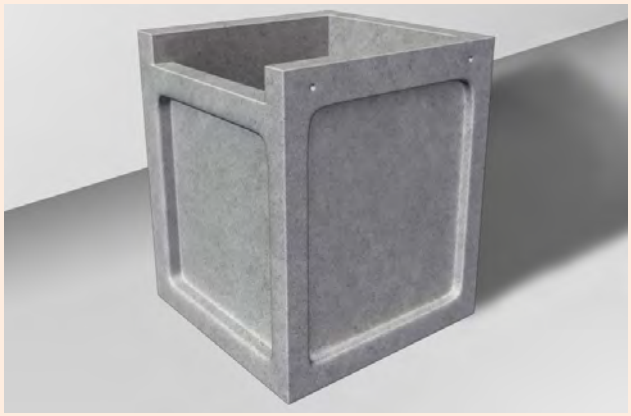
Section	Lay Length, in.	Opening, in.	Live Load Rating	KO3636, lb	KO3446, lb	KO4848, lb
Ditch Inlet Top (DIT)	4.5	2 (dia.)	300PSF	909	1,029	1,404
MH Ditch Top (MDT)	4.5	24 R&C	300PSF	856	986	1,365
Type 9 DIT	5	2(dia.)	300PSF	1409	N/A	N/A
Type 9 MDT	5	24 R&C	300PSF	1370	N/A	N/A

Curb Inlet Components

CI SERIES BOXES

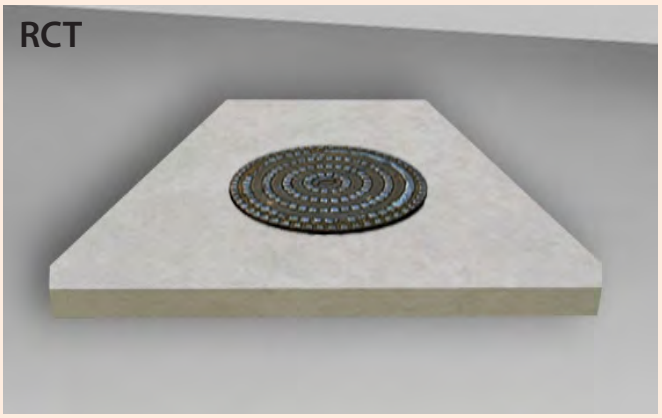
Series	CI4848
Inside Dimensions, in.	48 x 48
Base Thickness, in.	6
Wall Thickness, in.	5
Slot Dimensions, in.	7 x 54
Live Load Rating	HS20

Lay Length, in.	Section	Weight, lb
36	36B	3,524
48	48B	4,362
60	60B	5,446
72	72B	6,448



CURB INLET TOPS AND ADAPTORS

Component	Lay Length, in.	Opening, in.	Live Load Rating	Weight, lb
Curb Inlet Top (CIT)	4.5	2	300PSF	1,404
MH Curb Top (MCT)	4.5	24 R&C	300PSF	1,365
MH Curb Top/ SC DOT Type 16 Top	8	24 R&C	HS20	2,248
MH Curb Top/ SC DOT Type 17 Top	8	24 R&C	HS20	5,614
MH Curb Top/ SC DOT Type 18 Top	8	24 R&C	HS20	7,788
Richland County Top (RCT)	5	24 R&C	300PSF	1,790

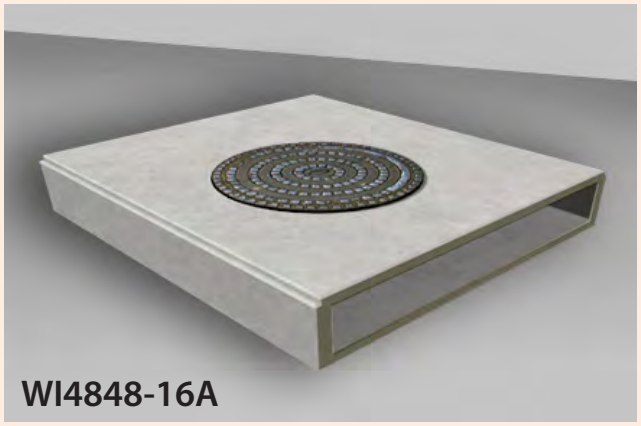


Curb Inlet Components (Continued)

WING INLET ADAPTORS

Section	WI4848-16A	WI4848-17A	WI4848-18A
Width at Top of Curb, in.	60	60	60
TotalLength,in.	64	112	160
Slot Length, in.	53	101	149
Slot Height, in.	14	14	14
Throat Slope	—	12:1	24:1
Weight, lb	5,600	9,000	14,700
LiveLoadRating	HS20	HS20	HS20

For use on: KO4848 Boxes; G48 and G60 Risers.



CURB AND DITCH INLET ADAPTORS

Section	4848-CIA (Curb)	4848-DIA (Ditch)
Inside Dimensions, in.	48 x 48 x 7	48 x 48 x 7
Lay Length, in.	11.5	11.5
Top Thickness, in.	4.5	4.5
Wall Thickness, in.	5	5
Slot Dimensions, in.	7 x 54	7 x 40
Top Provisions	24–in. iron cover	2–in. opening
Weight, lb	1,771	1,601
Live Load Rating	300PSF	300PSF

For use on: KO4848 Series Boxes, G60 Series and larger tops.

Section	G48-CIA (Curb)	G48-DIA (Ditch)
Inside Dimensions, in.	48 x 48 x 7	48 x 48 x 7
Lay Length, in.	13	13
Bottom Thickness, in.	6	6
Wall Thickness, in.	5	5
Slot Dimensions, in.	7 x 54	7 x 40
Weight, lb	1,152	906
Live Load Rating	300PSF	300PSF

For use on: G48 Risers. Accepts Curb Inlet and Ditch Inlet Tops.

G Series Storm Structure Hole Bases

Stock structures accommodating 12" to 48" diameter pipe

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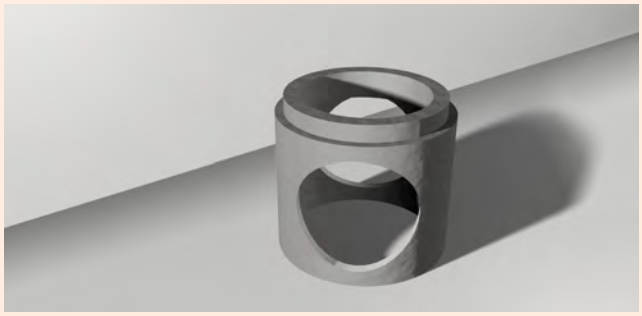
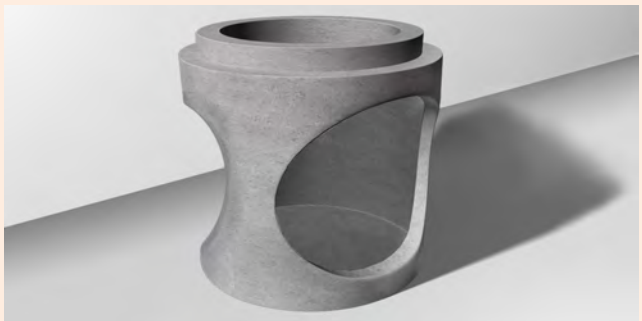


Series	G48	G48	G48	G60	G60	G72	G72
Section	24B2400	32B2900	40B3600	48B4200	56B4900	64B5600	72B6400
Lay Length, in.	24	32	40	48	56	64	72
Hole Size, in.	24	29	36	42	49	56	64
CMP Sizes, in.	18	24	30	36	42	48, 54	60
RCP Sizes, in.	12, 15	18	24	30	36	42	48

For pipe defections between 0 and 20 degrees. Pipe openings at 90 and 270 degrees, up 0-in.

B35



Series	G48	G48	G48	G60	G60	G72	G72
Section	24B2435	32B2935	40B3635	48B4235	56B4935	64B5635	72B6435
Lay Length, in.	24	32	40	48	56	64	72
Hole Size, in.	24	29	36	42	49	56	64
CMP Sizes, in.	18	24	30	36	42	48, 54	60
RCP Sizes, in.	12, 15	18	24	30	36	42	48

For pipe defections between 21 and 55 degrees. Pipe openings at 90 and 235 degrees, up 0-in.

G Series Storm Structure Hole Bases (Continued)

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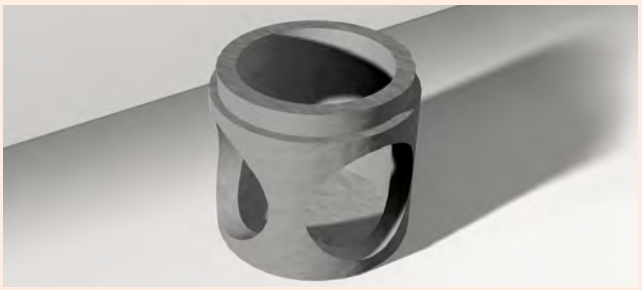
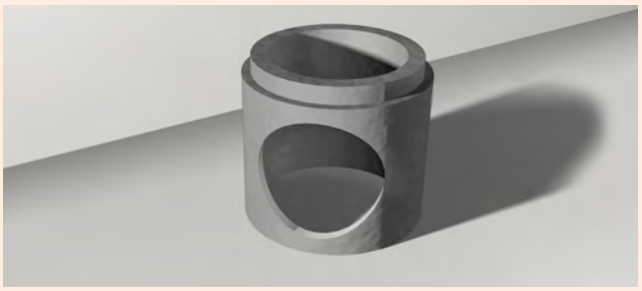


Series	G48	G48	G48	G60	G72	G72
Section	24B2470	32B2970	40B3670	48B4270	56B4970	64B5670
Lay Length, in.	24	32	40	48	56	64
Hole Size, in.	24	29	36	42	49	56
CMP Sizes, in.	18	24	30	36	42	48, 54
RCP Sizes, in.	12, 15	18	24	30	36	42

For pipe defections between 56 and 90 degrees. Pipe openings at 90 and 200 degrees, up 0–in.

DE



Series	G48	G48	G48	G60	G60
Section	24B24DE	32B29DE	40B36DE	48B42DE	56B49DE
Lay Length, in.	24	32	40	48	56
Hole Size, in.	24	29	36	42	49
CMP Sizes, in.	18	24	30	36	42
RCP Sizes, in.	12, 15	18	24	30	36

Pipe opening at 90 degrees, up 0–in.

UV Series Vaults

Applications include wet wells, valve vaults, meter vaults, industrial septic tanks, electrical manholes, storm drain structures, and outlet structures

UV SERIES VAULTS

Series	UV4848	UV7272	UV7296	UV0410	UV0612
Inside Dimensions, ft	4 x 4	6 x 6	6 x 8	4 x 10.25	6 x 12
Wall Thickness, in.	5	5	5	5	6 average
Slab Thickness, in.	6	6	6	6	8
Live Load Rating	HS20	HS20	HS20	HS20	HS20

UV SERIES MONOLITHIC BASES

Inside Height, in.	Section	UV4848, lb	UV7272, lb	UV7296, lb	UV0410, lb	UV0612, lb
24	2B	4,202	7,370	9,153	9,044	—
36	3B	5,377	9,130	11,204	11,429	22,053
48	4B	6,552	10,890	13,273	13,886	23,916
60	5B	7,739	12,650	—	—	26,659
72	6B	8,926	14,410	—	—	29,146
84	7B	—	16,170	—	—	—

Base slab extensions = Slab thickness on short walls (LB).

UV Series Vaults (Continued)

UV SERIES RISERS

Inside Height, in.	Section	UV4848, lb	UV7272, lb	UV7296, lb	UV0410, lb	UV0612, lb
12	1R	1,187	1,760	2,107	—	—
24	2R	2,362	3,520	4,184	—	—
36	3R	3,538	5,280	6,265	—	—
48	4R	4,712	7,040	8,370	—	—
60	5R	5,935	8,800	—	—	—
72	6R	7,121	10,560	—	—	—
84	7R	—	12,320	—	—	—

UV SERIES MONOLITHIC TOPS

Inside Height, in.	Section	UV4848, lb	UV7272, lb	UV7296, lb	UV0410, lb	UV0612, lb
0	FST	1,838	5,130	6,667	6,237	10,306
12	1T	3,042	5,610	7,049	7,173	—
24	2T	4,221	7,370	9,117	9,544	—
36	3T	5,400	9,130	11,183	11,914	20,995
48	4T	6,579	10,890	13,268	14,303	23,984
60	5T	7,667	12,650	—	—	26,714
72	6T	8,854	14,410	—	—	29,146
84	7T	—	16,170	—	—	—

SC SeriesVaults

Applications include wet wells, valve vaults, meter vaults, industrial septic tanks, electrical manholes, storm drain structures , and outlet structures

SC SERIES VAULTS

Series	SC0810	SC1012	SC1020
Inside Dimensions, ft	7.83 x 10	10 x 11.5	10 x 20
Wall Thickness, in.	8	8	8
Slab Thickness, in.	10	10	10
Live Load Rating	HS20	HS20	HS20

SC SERIES MONOLITHIC BASES

Inside Height, in.	Section	SC0810, lb	SC1012, lb	SC1020, lb
24	2B	22,675	30,165	47,499
36	3B	26,932	35,105	54,206
48	4B	31,248	40,303	61,536
60	5B	35,552	45,376	68,575

Base slab extensions = Slab thickness on short walls (LB).

SC SERIES RISERS

Inside Height, in.	Section	SC0810, lb	SC1012, lb	SC1020, lb
12	1R	4,290	5,126	—
24	2R	8,493	10,216	14,264
36	3R	12,744	15,320	21,414
48	4R	16,994	20,423	28,564
60	5R	21,244	25,539	35,714

SC SERIES MONOLITHIC TOPS

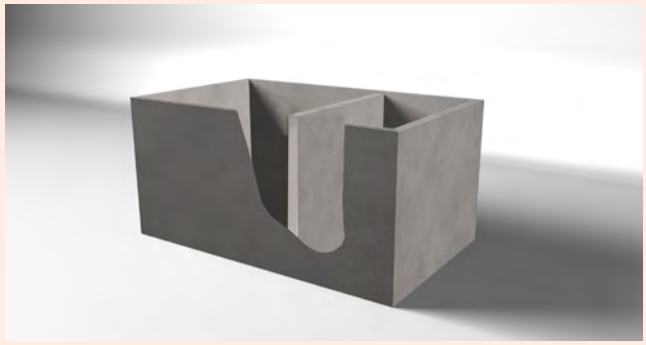
Inside Height, in.	Section	SC0810, lb	SC1012, lb	SC1020, lb
0	FST	14,094	19,733	32,802
12	1T	18,482	25,007	40,242
24	2T	22,636	30,028	47,110
36	3T	26,844	34,993	53,933
48	4T	31,085	40,042	60,866
60	5T	35,312	45,143	67,867

DC SERIES VAULTS

Inside Height, in.	Section
Chamber 1 Inside Dimensions, ft	7.83 x 10
Chamber 2 Inside Dimensions, ft	11.5 x 10
Wall & Baffle Thickness, in.	8
Slab Thickness, in.	10
Live Load Rating	HS20

DC Series Vaults

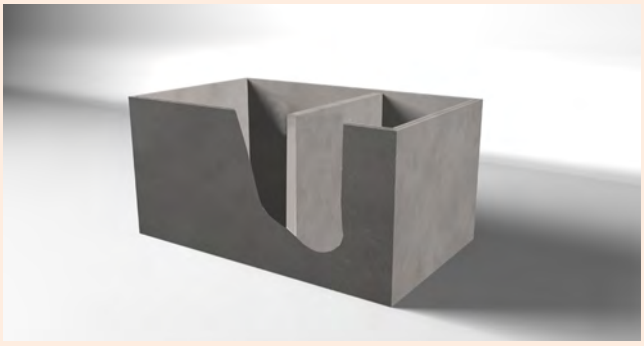
DC SERIES MONOLITHIC BASES



Inside Height, in.	Section	DC1020, lb
24	2B	49,339
36	3B	57,377
48	4B	65,709
60	5B	73,982

Also available: 10-in. Base Slab Extensions (LB) on short walls.

DC SERIES RISERS



Inside Height, in.	Section	DC1020, lb
24	2R	16,500
36	3R	24,783
48	4R	33,001
60	5R	41,100

DC SERIES MONOLITHIC TOPS

Inside Height, in.	Section	DC1020, lb
0	FST	32,802
12	1T	41,494
24	2T	49,394
36	3T	57,459
48	4T	65,760
60	5T	73,724

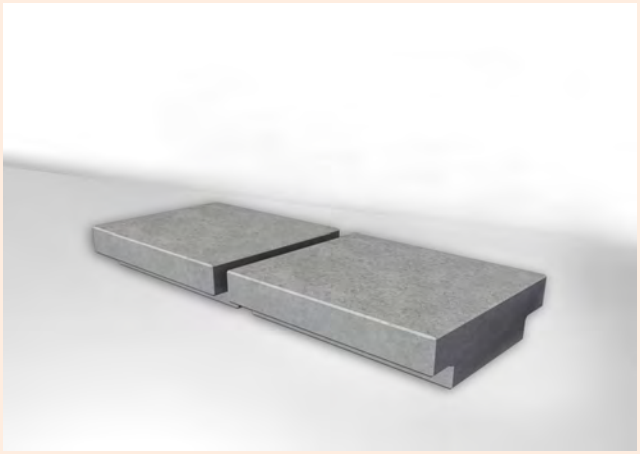
INDUSTRIAL TRENCHES, STEAM TRENCHES, STORM WATER TRENCHES

Inside Width, in.	Standard Lay Length, in.	Inside Depth, in.	Section	Weight, lb
12	144	12	TB1212-144	2,418
		24	TB1224-144	3,744
18	240	24	TB1824-240	7,260
		36	TB1836-240	9,570
		42	TB1842-240	10,560
24	240	24	TB2424-240	7,920
	120	36	TB2436-120	6,443
		48	TB2448-120	7,813
36	144	36	TB3636-144	14,315
		48	TB3648-144	16,177
		60	TB3660-144	17,820
		72	TB3672-144	19,265
48	144	48	TB4848-144	17,503
		60	TB4860-144	19,147
		72	TB4872-144	20,592
60	132	48	TB6048-132	17,261
		60	TB6060-132	18,767
		72	TB6072-132	20,092
72	120	48	TB7248-120	16,797
		60	TB7260-120	18,167
		72	TB7272-120	19,371
84	144	48	TB8448-144	21,483
		60	TB8460-144	23,126
		72	TB8472-144	24,572
96	144	48	TB9648-144	22,810
		60	TB9660-144	24,453
		72	TB9672-144	25,898
120	132	48	TB12048-132	22,932
		60	TB12060-132	24,438
		72	TB12072-132	25,763

Live load rating for trenches is 300PSF or HS20.

Trench Components (Continued)

TRENCH TOP



Trench Width, in.	Top Lay Length, in.	Section	Weight, lb
12	72	TS12–72	660
18	120	TS18–120	1,375
24	120	TS24–120	1,742
36	144	TS36–144	4,290
48	144	TS48–144	5,280
60	132	TS60–132	6,705
72	120	TS72–120	8,067
84	144	TS84–144	12,375
96	144	TS96–144	15,400
120	132	TS120–132	20,570

Live load rating for trench tops is 300PSF or HS20.

TRENCH GRATING

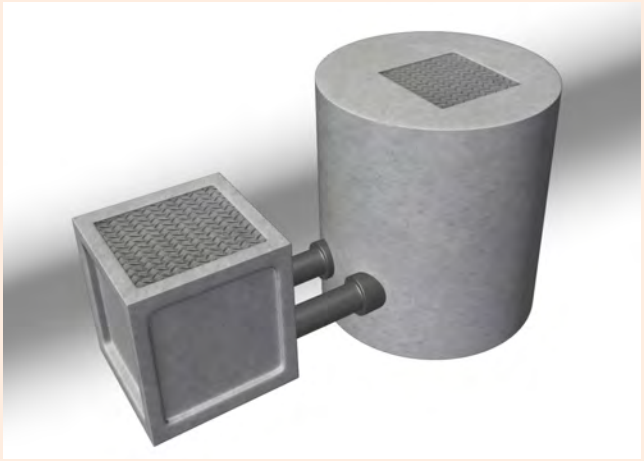
Trench Width, in.	Grate Lay Length, in.	Item
12	36	TG12–36
18	36	TG18–36
24	36	TG24–36
36	36	TG36–36

Live load rating for trench grating is HS20.

Packaged Products

UPFIT SEWAGE PUMPING STATIONS

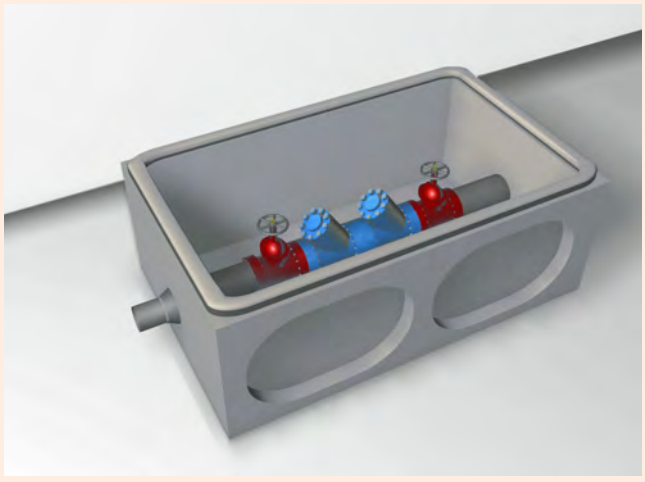
Series	6-ft Duplex
Wetwell Interior, ft	6 (dia.)
Wetwell Capacity, gal/ft	211
Wetwell Hatch Size, in.	32 x 48
Wetwell Slab Thickness, in.	8
Wetwell Extended Base Slab, ft	8 (dia.)
Valvepit Interior, ft	4 x 4 x 5
Available Piping Sizes, in.	2, 3, 4, 6
Valvepit Hatch Size, in.	48 x 48
Max. Wetwell Burial Depth, ft	35
Min. Wetwell Burial Depth, ft	8



PACKAGED BACKFLOW PREVENTOR AND METER VAULTS

Series	UV7296
Inside Dimensions, ft	6 x 8 x 6
Outside Dimensions, ft	6.83 x 8.83 x 7
Hatch Size, in.	48 x 48
Live Load Rating	300PSF
Available Mainline/ BFP Sizes, in.	4, 6, 8, 10
Available Secondary Metered Line Sizes, in.	2, 3
Fire Dept. Piping Available, in.	4, 6, 8

Contact Tindall for standard equipment specifications on pumping stations and backflow preventor/meter vaults.



***Note: Prepackaged mechanical/plumbing assemblies are available in any size vault Tindall manufactures.**

T Series

ASTM C478 sanitary sewer manhole bases with integrally cast precast inverts

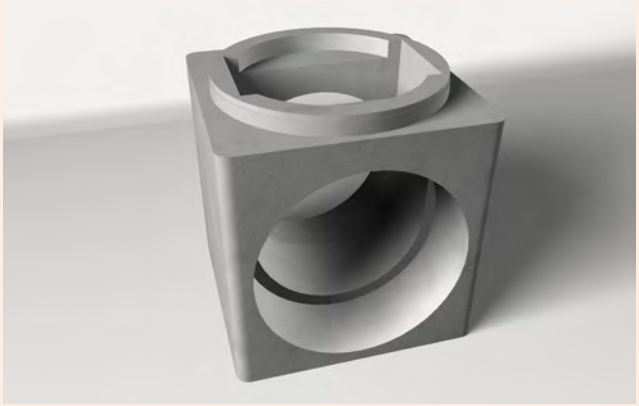
Accommodates 24" to 72" sanitary sewer pipe

T-SERIES BASES FOR LARGE DIAMETER SEWERS

Series	T24	T30	T36	T42	T48	T54	T60	T66	T72
Sewer Pipe Size, in.	24	30	36	42	48	54	60	66	72
HOBAS or DIP (O.D., in.)	26	33	39	46	51	57	63	70	81
Lay Length, in.	32	48	48	52	64	64	80	84	91

*Larger ODs can be accomodated with special pours

0-DEGREE DEFLECTION BASES



Series	T30	T36	T42	T48	T54	T60	T66	T72
Section	48B00	48B00	52B00	64B00	64B00	80B00	84B00	88B00
Weight, lb	9,000	8,700	8,300	18,000	17,200	27,450	47,000	39137
Width, in.	56	56	56	72	72	90	97	98
Riser Series	G48	G48	G48	G60	G60	G72	G72	G84

For pipe deflections between 0 and 20 degrees.

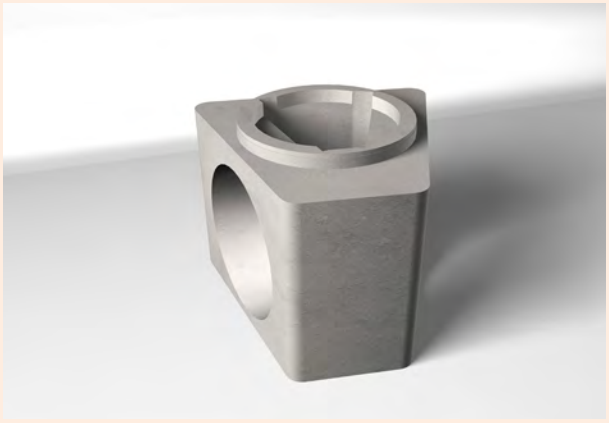
T Series (Continued)

ASTM C478 sanitary sewer manhole bases with integrally cast precast inverts

Accommodates 24" to 72" sanitary sewer pipe

35-DEGREE DEFLECTION BASES

(30", 36", 42", 48", and 54" diameter pipe)

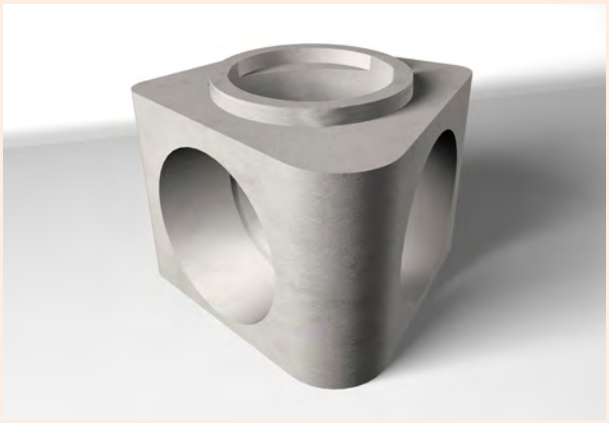


Series	T30	T36	T42	T48	T54
Section	48B35	48B35	52B35	64B35	64B35
Weight, lb	10,205	10,023	12,060	23,049	20,092
Width, in.	86	86	86	99	99
Riser Series	G48	G48	G48	G60	G60

For pipe deflections from 21 to 55 degrees.

70-DEGREE DEFLECTION BASES

(30", 36", 42", 48", and 54" diameter pipe)



Series	T30	T36	T42	T48	T54
Section	48B70	48B70	52B70	64B70	64B70
Weight, lb	12,200	11,800	16,500	23,000	22,000
Width, in.	56	56	56	72	72
Riser Series	G48	G48	G48	G60	G60

For pipe deflections from 56 to 90 degrees.

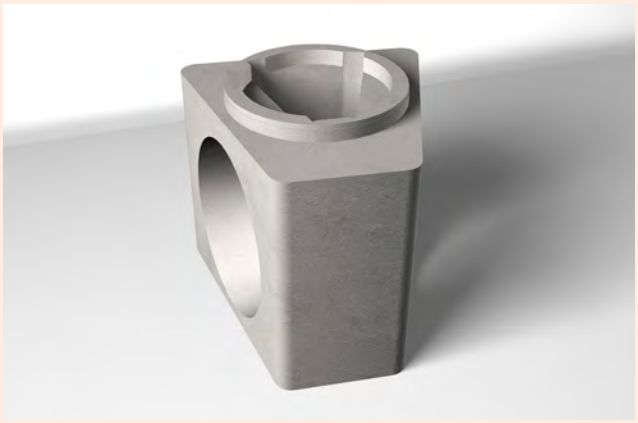
T Series (Continued)

ASTM C478 sanitary sewer manhole bases with integrally cast precast inverts

Accommodates 24″ to72″ sanitary sewer pipe

25-DEGREE DEFLECTION BASES

(60”, 66”, 72” diameter pipe)

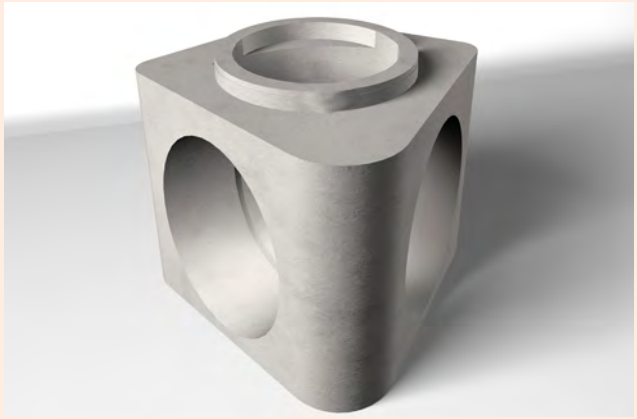


Series	T60	T66	T72
Section	80B25	84B25	88B25
Weight, lb	29,010	33,750	43,960
Width, in.	104	107	109
Riser Series	G72	G72	G84

For pipe deflections from 15 to 37 degrees.

50-DEGREE DEFLECTION BASES

(60”, 66”, 72” diameter pipe)



Series	T60	T66	T72
Section	80B50	84B50	84B50
Weight, lb	36,486	48,083	42,200
Width, in.	110	119	119
Riser Series	G72	G84	G84

For pipe deflections from 38 to 65 degrees.

Sanitary Sewer 1st Cast Inverts

ASTM C478 stock manhole bases with precast inverts for 8" to 24" diameter pipe

8-IN. PIPE

Bl's/ Angle Deflection	0	15	30	45	60	75	90
Hole Location	90 & 270	90 & 255	90 & 240	90 & 225	90 & 210	90 & 195	90 &180

10-IN. PIPE

Bl's/ Angle Deflection	0	20	40	60	80
Hole Location	90 & 270	90 & 250	90 & 230	90 & 210	90 & 190

12-IN. PIPE

Bl's/ Angle Deflection	0	20	40	60	80
Hole Location	90 & 270	90 & 250	90 & 230	90 & 210	90 & 190

15-IN. PIPE

Bl's/ Angle Deflection	0	25	50	75
Hole Location	90 & 270	90 & 245	90 & 220	90 & 95

18-IN. PIPE

Bl's/ Angle Deflection	0	25	50	75
Hole Location	90 & 270	90 & 245	90 & 220	90 & 195

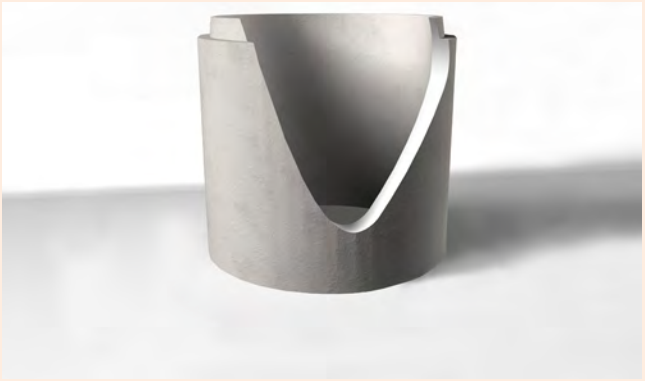
21-IN. PIPE

Bl's/ Angle Deflection	0	25	50	75
Hole Location	90 & 270	90 & 245	90 & 220	90 & 195

24-IN. PIPE

Bl's/ Angle Deflection	0	25	50	75
Hole Location	90 & 270	90 & 245	90 & 220	90 & 195

G SERIES MONOLITHIC BASES



Series	G48	G60	G72	G84	G96	G120
Inside Diameter, in.	48	60	72	84	96	120
Base Thickness, in.	6	8	8	8	8	9
Wall Thickness, in.	5	5	6	7	8	10
Live Load Rating	HS20	HS20	HS20	HS20	HS20	HS20

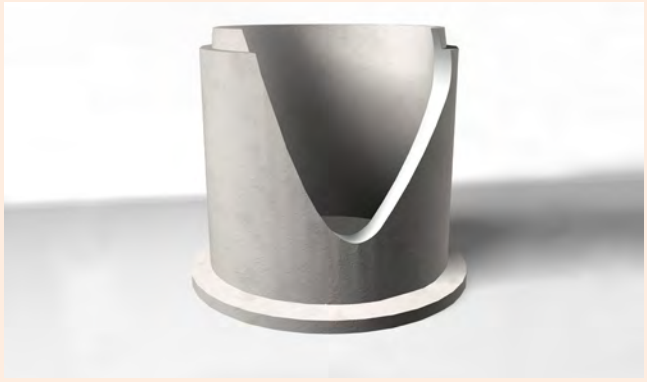
Lay Length, in.	Section	G48, Weight	G60, Weight	G72, Weight	G84, Weight	G96, Weight	G120, Weight
16	16B	2,836	—	—	—	—	—
24	24B	3,464	—	—	—	—	—
32	32B	4,112	6,041	—	11,640	15,668	23,402
40	40B	4,743	6,791	—	—	—	—
48	48B	5,419	7,542	10,866	—	—	—
56	56B	—	8,292	11,944	—	—	—
64	64B	6,689	9,042	13,023	17,646	23,410	37,692
72	72B	—	—	14,101	—	—	—
80	80B	—	—	20,691	—	—	—
96	96B	—	—	—	23,702	31,182	49,640

G48 RISERS

Series	G48	G60	G72	G84	G96	G120
Inside Diameter, in.	48	60	72	84	96	120
Wall Thickness, in.	5	6	7	7	8	10
Live Load Rating	HS20	HS20	HS20	HS20	HS20	HS20

Lay Length, in.	Section	G48, Weight	G60, Weight	G72, Weight	G84, Weight	G96, Weight	G120, Weight
16	16R	1,221	1,829	2,551	—	—	—
32	32R	2,441	3,654	5,097	5,885	7,678	11,949
48	48R	3,663	5,480	7,644	8,831	11,519	17,922
64	64R	4,883	7,305	10,189	11,770	15,355	23,896
80	80R	6,103	9,134	12,741	14,710	19,191	29,872
96	96R	—	10,960	—	18,020	23,032	35,846

G SERIES EXTENDED LIP BASES

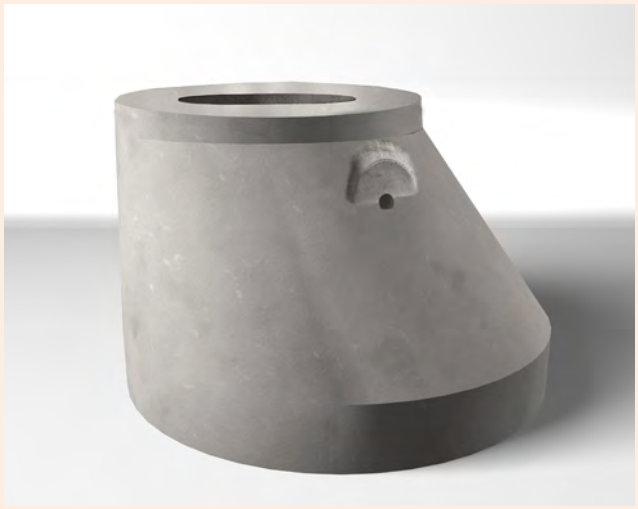


Series	G48	G60	G72	G84	G96	G120
Inside Diameter, in.	48	60	72	84	96	120
Base Thickness, in.	6	8	8	8	8	9
Wall Thickness, in.	5	5	6	7	8	10
Base Outside Diameter, in.	70	86	100	112	132	144 x 154
Live Load Rating	HS20	HS20	HS20	HS20	HS20	HS20

Lay Length, in.	Section	G48, Weight	G60, Weight	G72, Weight	G84, Weight	G96, Weight	G120, Weight
16	16LB	3,498	—	—	—	14,601	25,433
24	24LB	—	—	—	—	—	—
32	32LB	4,774	—	—	—	—	—
40	40LB	—	8,223	—	—	—	—
48	48LB	6,081	8,974	12,558	19,851	22,373	37,381
56	56LB	—	9,724	13,636	—	—	—
64	64LB	—	10,474	14,715	—	—	—
72	72LB	—	—	15,793	—	—	—
80	80LB	—	—	—	—	—	—
96	96LB	—	—	—	25,858	34,016	55,305

G Series Cones

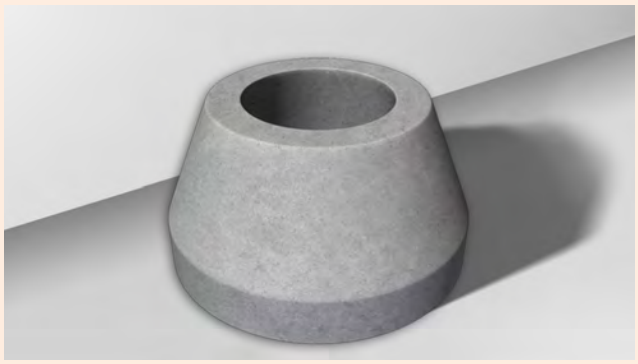
G48 SERIES ECCENTRIC CONES



Series	G48	G60
Inside Diameter, in.	48 to 24	60 to 24
Wall Thickness, in.	5	6
Ledge Thickness, in.	8	8
Live Load Rating	HS20	HS20

Lay Length, in.	Section	G48, lb	G60, lb
32	32C	2,050	—
40	40C	2,672	3,750
48	48C	3,292	—
56	56C	3,919	—
64	64C	4,540	—

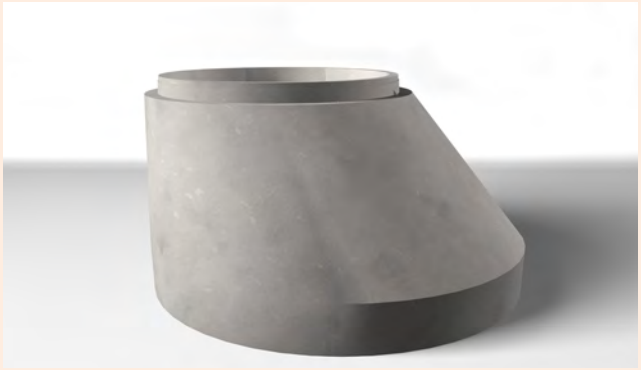
G48-20C SERIES CONCENTRIC CONE



Series	G48-20C
Inside Diameter, in.	48 to 24
Wall Thickness, in.	5
Ledge Thickness, in.	8
Lay Length, in.	20
Weight, lb	1,460
Live Load Rating	HS20

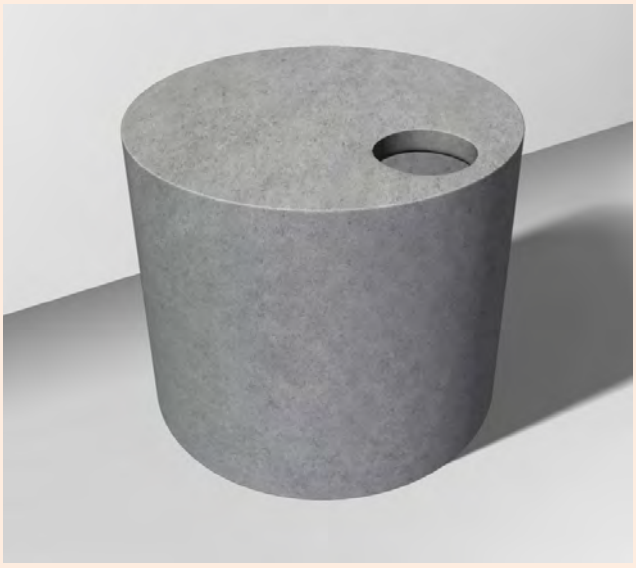
G Series Transition Cones and Tops

G48 SERIES TRANSITION CONES



Series	G-60-32TC	G72-32TC
Inside Diameter, in.	60 to 48	72 to 48
Wall Thickness, in.	6	7
Lay Length, in.	32	32
Weight, lb	3,040	4,234
Live Load Rating	HS20	HS20

G SERIES MONOLITHIC TOPS



Series	G84	G96	G120
Inside Diameter, in.	84	96	120
Wall Thickness, in.	7	8	10
Slab Thickness, in.	8	8	9
Live Load Rating	HS20	HS20	HS20

Lay Length, in.	Section	G84, Weight	G96, Weight	G120, Weight
16	16T	7,625	8,689	14,312
32	32T	10,188	12,560	20,287
48	48T	13,191	16,431	26,261
64	64T	16,194	20,331	32,236
80	80T	19,197	24,202	38,210
96	96T	22,201	28,074	44,184

G Series Tops

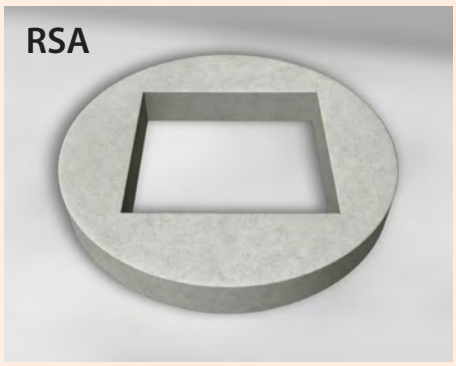
G SERIES GRATE INLET TOPS

Series	G48-GIT	G48-GIT 16	G60-GIT	G60-GIT20	G72-GIT
Lay Length, in.	8	16	12	20	12
Concentric Opening Size, in.	24x36	24x36	24x36	24x36	24x36
Weight, lb	1,242	1,878	2,773	3,637	3,876
Live Load Rating	HS20	HS20	HS20	HS20	HS20

G SERIES FLAT SLAB TOPS

Series	G48-FST	G48-FST18	G60-FST	G60-FST20	G72-FST
Lay Length, in.	10	18	12	20	12
Eccentric Opening Size, in.	24	24	24	24	24
Weight, lb	1,409	2,045	2,994	3,858	3,876
Live Load Rating	HS20	HS20	HS20	HS20	HS20

G SERIES ROUND TO SQUARE TOPS



Series	G48-RSA	G48-RSA18	G60-RSA	G60-RSA20	G72-RSA
Lay Length, in.	10	18	12	20	12
Concentric Opening Size, in.	36x36	36 x 36	36x36	36x36	36 x 36
Weight, lb	1,242	1,878	2,994	3,854	3,876
Live Load Rating	HS20	HS20	HS20	HS20	HS20

Choosing round bases is actually very simple as it boils down to sizing for watertight pipe connections or "standard boot" type pipe-to-manhole connectors conforming to ASTM C923.

There is no substitute for the "standard boot" connector. Unlike any compression connector, "standard boots", with their mechanical connection to the pipe, will tolerate pipe deflections associated with flexible pipe and the O.D. variations common in rigid pipes. Connectors other than "standard boots" push the limits of what can be expected of the manhole and of the pipe at their connection.

In addition to providing for watertight pipe connections, sizing round bases for "standard boots" also provides:

- Structurally sound bases at all pipe deflections.
- Invert bending radius to minimize turbulence.

Tindall provides dependability, flexibility and infiltration prevention with "boots" at pipe connections. The end result is a superior sewer manhole.

Table 1- Base Sizes For "Standard Boot" Pipe Connectors

For Pipe Size	<24 in.	24 in.	30 in.	36 in.	42 in.	48 in.	54 in.	60 in.	72 in.
Min. Manhole Diameter* PVC, HOBAS ™ Ductile Iron Pipe	48 in.	60 in.	72 in.	84 in.	96 in.	120 in.	120 in.	120 in.	144 in.
Min. Manhole Diameter* Concrete Pipe	48 in.	72 in.	84 in.	96 in.	120 in.	120 in.	144 in.	144 in.	N/A

*Per ASTM C923

Cast Iron Products

ROUND GRADE RING

Item	GR-4	GR-6
Inside Dimension, in.	24	24
Wall Thickness, in.	5	5
Lay Length, in.	4	6
Weight (Each), lb	170	252
Pack Quantity	10	7
Live Load Rating	HS20	HS20

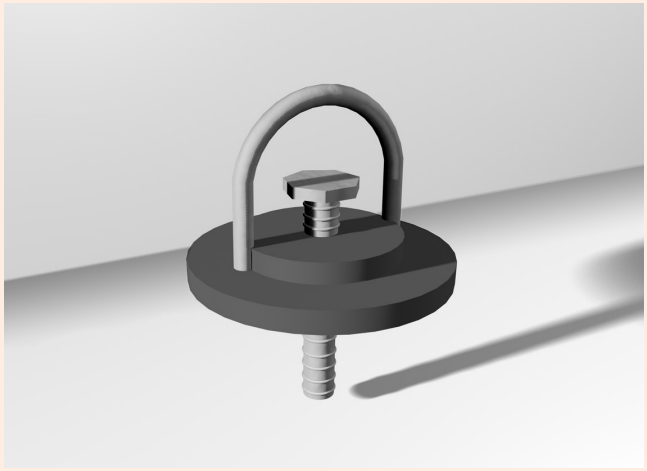
CAST IRON RING AND COVERS

Item	I 24-S	I 24-SW
Inside Dimension, in.	22	22
Lay Length, in.	7.5	7.5
Weight, lb	310	310
Live Load Rating	HS20	HS20
Cover Lettering	Sanitary Sewer	Storm Sewer
Live Load Rating	HS20	HS20

CAST IRON FRAMES AND GRATES

Item	I 23-F	I 23-L
Description	Flat Grate	Frame
Outside Dimensions,in.	24 x 36	32 x 44
Open Area, in.^{2}	480	N/A
Weight, lb	185	220
Live Load Rating	HS20	HS20

HANDLING DEVICES



Item	Provision in Concrete Product	Quantity Required By Series											
		G48	G60	G72	G84	G96	G120	KO	CI	UV	SC	DC	Trench
Small Lift Pin	2-in. Hole	2	—	—	—	—	—	4	4	4	—	—	4
Large Lift Pin	3-in. Hole	—	2	2	2	4	4	—	—	4	—	—	4
Swivel	1.5-in. Insert	—	—	—	—	—	—	—	—	—	4	4	4
—	Lift Loop	3	3	3	4	4	4	—	—	4	4	4	4

Manhole Steps/Joint Materials/Coatings & Liners

MANHOLE STEPS

Twelve-inch-wide reinforced co-polymer polypropolene steps installed on 16-in. centers in G-Series Bases, Risers and Cones (not available for rectangular components).

G-SERIES JOINT HEIGHT

Series	G48	G60	G72	G84	G96	G120
Joint Height, in.	4.25	4.75	5	5	5	6

SC and DC Series components are provided with keyway joints.

JOINT MATERIALS

Material	Quantity	Joints Per Container By Series					
		G48	G60	G72	G84	G96	G120
PBS-1 1-in. Diameter Butyl Rubber	116 ft/box	8	6	5	4	4	3
EBS-6 1/16-in. x 6-in. Butyl Rubber	200 ft/box	13	11	9	8	7	5

Material	Quantity	UV4848	UV7272	UV0410	UV7296	UV0612
PBS-1 1-in. Diameter Butyl Rubber	116 ft/box	6	4	4	4	3
EBS-6 1/16-in. x 6-in. Butyl Rubber	200 ft/box	10	7	6	6	5

Material	Quantity	Joints Per Container By Series			
		SC0810	SC1012	SC1020	DC1020
Joint-Pak 1-in. Diameter Butyl/ Bentonite	100 ft/box	1	1	0.75	0.5
EBS-6 1/16-in.x 6-in. Butyl Rubber	200 ft/box	4	3	2.75	2.75

COATINGS AND LINERS

Item	Interior	Exterior
Bases, Risers, Cones	Interior Vertical Surfaces	Exterior Vertical Surfaces
Tops	Interior Vertical and Horizontal Surfaces	Exterior Vertical Surfaces

MATERIALS, DESIGN AND MANUFACTURING STANDARDS

Tindall products meet or exceed the latest editions of the following industry standards:

- ASTM C478 "Standard Specification for Precast Reinforced Concrete Manhole Sections"
- ASTM C913 "Standard Specification for Precast Concrete Water and Wastewater Structures"
- ASTM C858 "Standard Specification for Underground Precast Concrete Utility Structures"
- ASTM C923 "Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals"
- ASTM C443 "Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe"
- ASTM C990 "Standard Specification for Joints for Concrete Pipe, Manholes and Precast Box Sections Using Preformed Flexible Joint Sealants"
- ACI 318 "Building Code Requirements for Reinforced Concrete"

Tindall recommends job site handling, storage and installation according to ASTM C891 "Standard Practice for Installation of Underground Precast Concrete Utility Structures."

Tindall manufacturing is performed in a facility certified by the Prestressed Concrete Institute (PCI) and the National Precast Concrete Association (NPCA).

NPCA CERTIFIED PLANT

CERTIFIED PCI PLANT

Engineered Solutions for Industrial and Specialized Applications

Tindall has the engineering and manufacturing expertise to provide pre-cast concrete solutions for:

- Conveyor tunnels
- Utility trenches/tunnels
- Stormwater retention systems
- Stormwater separators
- Stormwater cisterns
- Structural panels
- Steam trenches
- Utility plenums
- Electrical manholes/vaults

Tindall modular sytems offer a schedule advantage versus pour in place. Manufacturing products in a controlled environment results in superior product quality.

Engineered Structures For Nuclear And Fossil Power Plants

Tindall modular precast concrete construction methods are ideally suited to the needs of 10CFR 50 Appendix B nuclear projects, bringing enhanced safety and solid, unambiguous traceability to your project. These pre-engineered and factory-manufactured components fully comply with the requirements of the NRC NQA-1 quality program. Tindall engineered structural solutions include:

DUCT AND TRENCH SYSTEMS

- Utility trenches and tunnels
- Precast vaults for sumps and pipe enclosures
- Electrical conduit
- Electrical/communication manholes
- Electrical/communication handholes
- Electrical/communication vaults
- Electrical/communication junction boxes
- Communication conduits for fiber lines
- Electrical duct banks

SPECIAL SYSTEMS

- Precast firewalls and columns
- Foundation slabs
- Cooling tower components

TINDALLCAST® Span Systems

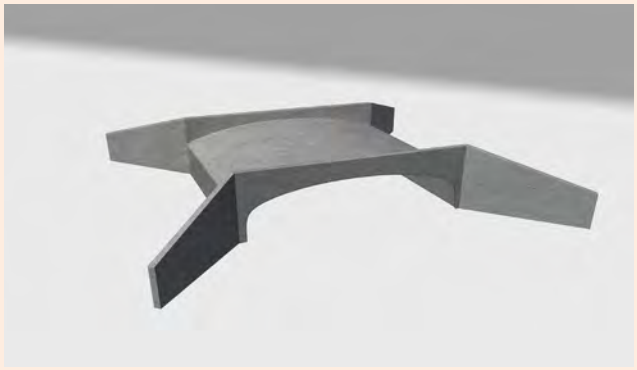
The TINDALLCAST® Span System is a rapid and easy way to construct environmentally responsible modular bridges or tunnels. These structures comprise an economical solution for creek or wetlands crossings, or for emergency replacement of damaged or condemned crossings. Tindall offers project planning, comprehensive submittals, detailed design from the footings up, project management, and integration with groundwater drainage and service utilities systems.

THREE-SIDED BOX CULVERTS

Engineered for spans to 42 ft, with a simple backfill process. A complete system including multiple sections to attain the width of the span, plain or decorative head walls, and wingwall/anchor units.

ARCH CULVERTS

Engineered for smooth-arc or polygonal-section spans from 28 ft to 60 ft. A complete system including multiple arches to attain the width of the span, plain or decorative head walls, and wingwall/anchor units.



TWO-PIECE ARCH CULVERTS

Engineered for arched spans from 54 ft to 84 ft. A complete system including multiple arches to attain the width of the span, plain or decorative headwalls, and wingwall/anchor units.

Tindall Utility Design Guides And Information

SEWER MANHOLE DESIGN GUIDE

Offers the five key steps toward designing efficient sewer and/or storm water systems.

UTILITY TRENCHES PRODUCT SHEET

Demonstrates the capabilities of Tindall utility trenches in industrial/commercial applications.

NUCLEAR PROJECTS APPLICATION SHEET

Outlines Tindall's nuclear rated products and engineering expertise.

SPAN SYSTEMS PRODUCT SHEET

Provide overview of applications and features of TINDALLCAST® Span Systems.

THE TINDALL PARTNERSHIP

Tindall Corporation has the highly specialized expertise needed for engineering, manufacturing and delivering precast utility systems. Our team of precast professionals will deliver durable, economical, defect-free products and services that satisfy each client's needs. We work closely with project managers to engineer the most efficient precast design, reducing manufacture and installation time. We develop innovative solutions that aid in the attainment of the most productive utilities. And we will work side-by-side with you to deliver maximum flexibility, great cost efficiency and better quality on a shorter completion schedule. Contact Tindall—we will do it right the first time.

Tindall

Better Building Through Technology

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