



Water Management Solutions





At Prinsco, we offer the three most important things that our customers need to be successful.

People: Hard working people providing world class service.

Pipe: Premium quality pipe delivered right to the project.

Results: Immediate results that create long-term returns.

You can count on it.

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prinsco.com



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SUBSURFACE WATER MANAGEMENT

The agriculture industry has the daunting responsibility of feeding our world's growing population. By 2040, there are expected to be almost 9 billion mouths to feed, requiring us to produce up to 50% more food than we currently can. Prinsco is doing our part by providing water management solutions which have the capacity to boost yields on our most prolific farm land while also converting poorly drained soils into productive acres. Prinsco's water management products help control the critical soil conditions that promote optimum root growth, which can ultimately produce healthier, more productive crops. Fields with a subsurface water management system can see yield increases up to 25%. At current prices, that can mean up to \$130 more per acre and a return on investment of 3-7 years. For more benefits and details, see below:





Increased infiltration rates allow water to move from the surface to the root zone faster, allowing quicker uptake by the roots and quicker removal of excess water by the system.

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Increased water quality is due to percolation through the soil profile which decreases sediment, phosphorus and potassium loss. Early access to fields is made possible by mitigating the impact of early spring precipitation.

Consistent yields across the field and from year to year are realized by creating optimum growing conditions and **increased yields** are realized from healthier, more durable plants.

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SUBSURFACE WATER MANAGEMENT





Decreased soil loss is a result of less surface run-off.

Terms to Know

Bioreactor – An edge-of-field water quality best management practice in which discharge from a water management system is passed through an underground bed of woodchips, or other carbon source, that converts nitrates in the water into nitrogen gas.

Buffer Strip – A narrow area along a waterway that is maintained in permanent vegetation and designed to protect the waterway from surface runoff and sedimentation.

Drainage Coefficient – The rate at which water can be removed from a field, typically expressed in inches per 24 hours. One of the parameters used to determine the spacing of parallel laterals.

Erosion – The removal of soil from the land surface by water flow or wind.

Evapotranspiration – Commonly known as ET, it is the combination of evaporation of water from the soil into the air, and transpiration of moisture from the plant leaves into the air.

Fall – The amount of elevation drop from one end of the pipe to the other, typically expressed in feet.

Field Capacity – The maximum amount of soil moisture or water that can be held in the soil after drainage has taken place.

Flow Rate – The volume of water that passes through a pipe over a given amount of time.

Lateral – Small diameter tile line that collects excess water and discharges into a main.

Lateral Spacing – The distance between two parallel lateral lines, typically expressed in feet.

Lift Station – A structure located on a tile main that allows water to be pumped from a lower elevation to a higher elevation, typically to an outlet.

Main – Larger diameter pipe that collects water from a system of smaller diameter laterals and carries that water to an outlet.

Outlet – The point at which water exits a subsurface water management system.

Plant Available Water – Soil water that is readily available to plants. It is the water content difference between field capacity and wilting point. Rate of Return – The rate at which the money invested in a subsurface water management system will be returned to the investor via increased efficiencies or yields.

Riparian Zone – The interface between land and a bordering waterway.

Saturated Buffer – An edge-of-field water quality best management practice in which water from an underground tile system is routed into perforated tile lines running parallel to a waterway under a buffer strip. The soil and plant matter beneath the buffer strip filters the water and helps remove nitrates before entering the waterway.

Saturation – A condition that occurs when 100% of soil pores are filled with water, displacing any naturally occurring pockets of air. Plants cannot survive extended periods of saturated conditions due to lack of oxygen.

Sedimentation – The settling out of soil particles suspended in water

Slope/Grade – A change in elevation over some distance, typically expressed as a percentage or feet of fall per linear feet.

Soil Pores – The void spaces between soil particles, making up 40% to 50% of the soil structure.

Soil Profile – The layers of soil contained in the crop rooting depth.

Surface Intake – A structure that is specifically designed to remove standing water from the ground's surface and installed in lower areas of a field.

Subsurface Irrigation – Also known as subirrigation. An irrigation practice using pumps and water control structures in an undergruond water management system to control the water table and supply moisture directly to the crop's root zone.

Water Management System – A network of laterals and mains that manages excess water in the soil.

Watershed – An area of land where all of the water that falls on it drains to the same waterway.

Water Table – The top level of the saturated zone within the soil.

Wilting Point – The soil water content at which point crops can no longer draw water from the soil and drought stress takes place.

CONTROLLED WATER MANAGEMENT

Controlled subsurface water management has become an increasingly valued and utilized tool to manage water tables, improve water quality and irrigate through the growing season.

How Controlled Water Management Works

Controlled water management uses control structures to manage water table levels in the field. Stop logs are used to block water from freely flowing through the outlet. When the stop logs are in place, the water table rises and can supply water to the plants when it is most needed. By keeping water in the fields longer, control structures can also increase the opportunity for nitrogen uptake by plants.



In the spring, the stop logs are not in place allowing for free drainage through the outlet. The ground becomes suitable to plant earlier in the year because there is less water in the soil profile. Also, the temperature of the soil is adequate because there is less water in the profile. With an earlier planting date, the crop is able to use spring rains more efficiently.



Once the crop has been established, the stop logs are placed to the desired water table height. This step allows the water to rise, making moisture readily available to the plants by replenishing the plant available water.

CONTROLLED WATER MANAGEMENT





As precipitation falls throughout the growing season, the water that infiltrates into the soil is held back at a level as high as the top stop log. This gives plants more opportunity for nitrogen uptake, keeping nitrates from leaving the soil profile. When the water rises higher than this level, the water is then allowed to run over the stop log and through the outlet. If heavy and persistent rains occur during the growing season, the stop logs may be removed in order to drop the water table back down to the drained condition. Dropping the water table protects the crop from oxygen deficiency. The water level in the soil profile will never exceed the top stop log for an extended period of time but will drop below the top stop log if dry weather patterns persist.



→ As harvest nears, the stop logs – are removed and the water table is allowed to drop. This allows for a timely harvest, and fall rains will be allowed to drain freely through the water management system.



Flexible Dual-wall Pipe

In cold climates, where deep and prolonged freezing occurs, stoplogs should remain out of the system after harvest. This is meant to increase infiltration of spring snowmelt and prevent potential damage to the control structures and tile lines if deep freezing occurs. In warmer climates, where average frost penetrationn depths are less than 3 feet, stoplogs can be added to within 6 inches of the soil surface. This allows the water table to rise and conserve moisture and nutrients in the soil profile.



GOLDLINE[®]

WATER MANAGEMMENT / SINGLE WALL

GOLDLINE[®] is soil tight, high density polyethylene plastic pipe that is an essential component of agricultural water management systems. It is available in mini rolls, maxi rolls, and 10- and 20-foot stick lengths. GOLDLINE[®] is available as non-perforated or with standard or narrow perforation configurations, which can be supplied with high performance geotextile fabric.



Perforated Coils: Available Sizes

Diameter	Number	Length	Unit
3"	030100PF	100'	Micro
3"	030300PF	300'	Mini
3"	035300PF	5,300'	Maxi
4"	040100PF	100'	Micro
4"	040250PF	250'	Mini
4"	043000PF	3,000'	Maxi
5"	050165PF	165'	Mini
5"	051900PF	1,900'	Maxi
5"	052300PF	2,300'	Maxi
6"	060100PF	100'	Mini
6"	061450PF	1,450'	Maxi
8"	080390PF	390'	Mini
8"	080825PF	825'	Maxi
10"	100525PF	525'	Maxi
12"	120320PF	320'	Maxi

Narrow Slot Pipe: Available Sizes

Not intended to replace sock or fabric around pipe; provided as a service to our customers without any implied warranties. (NS = narrow slot)

Diameter	Number	Length	Unit
3"		5,300'	Maxi
4"		100'	Micro
4"		250'	Mini
4"		3,000'	Maxi
5"		165'	Mini
5"		2,300'	Maxi
8"		825'	Maxi
10"		525'	Maxi
12"		320'	Maxi

GOLDLINE[®]

Muck Pipe: Available Sizes

Has 4 rows of perforations at 90° intervals

Diameter	Number	Length	Unit
4"	040100MHS	100'	Micro
4"	040250MHS	250'	Mini
4"	043000MHS	3,000'	Maxi
5"	050165MHS	165'	Mini
5"	052300MHS	2,300'	Maxi
6"	060100MHS	100'	Mini
6"	061450MHS	1,450'	Maxi



Mobile Resources Prinsco.com/goldline-resources

GOLDLINE®

Muck Pipe with Sock

Diameter	Number	Length	Unit
4"	040100MHSSF	100'	Micro
4"	040250MHSSF	250'	Mini
4"	043000MHSSF	3,000'	Maxi
5"	050165MHSSF	165'	Mini
5"	052300MHSSF	2,300'	Maxi
6"	060100MHSSF	100'	Mini
6"	061450MHSSF	1,450'	Maxi

Non-Perforated Coils: Available Sizes

Diameter	Number	Length	Unit
3"	030100NP	100'	Micro
3"	030300NP	300'	Mini
3"	035300NP	5,300'	Maxi
4"	040100NP	100'	Micro
4"	040250NP	250'	Mini
4"	043000NP	3,000'	Maxi
5"	050165NP	165'	Mini
5"	052300NP	2,300'	Maxi
6"	060100NP	100'	Mini
6"	061450NP	1,450'	Maxi
8"	080390NP	390'	Mini
8"	080825NP	825'	Maxi
10"	100525NP	525'	Maxi
12"	120320NP	320'	Maxi

Remaining Feet per Coil

				Pipe I	Jiamete	er		
		3"	4"	5"	6"	8"	10"	12"
	1	150'	135'	100'	90'	93'	80'	90'
_	2	330'	290'	250'	220'	230'	200'	195
S	3	550'	490'	440'	387'	385'	350'	320
uo (4	825'	730'	670'	592'	595'	525'	
raps	5	1120'	1000'	940'	834'	825'		
τw	6	1480'	1315'	1250'	1107'			
er c	7	1870'	1685'	1600'	1450'			
qmr	8	2305'	2065'	1900'				
ž	9	2780'	2500'	2300'				
	10	3290'	3000'					
	11	3860'						
	12	4400'						
	13	5300'						



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GOLDLINE®



GOLDLINE[®] with geotextile wrap is great for projects involving fine sand, soil or flowable particles of soil. It comes with a knitted polyester continuous seamless sleeve. Fabric should not be used when installing in heavy soils (such as clay or loam) since it may inhibit water from entering the pipe.

Applications*

- Culverts
- Soil Stabilization
- Grain Aeration
- Water Management Laterals
- Water Management Mains

* Contact your Prinsco representative regarding application suitability questions.

Approximate Pipe Requirements

Spacing	FT / AC
20'	2180'
30'	1450'
40'	1089'
50'	870'
60'	725'
70'	620'
80'	545'
90'	485'
100'	435'
110'	395'
120'	360'
130'	335'
140'	310'
150'	290'
160'	270'
180'	240'
200'	220'
250'	175'

Pipe with Installed Sock Wrap: Available Sizes

Pipe with Knitted Polyester Sock Wrap

Diameter	Number	Length	Unit
3"	030100SF	100'	Micro
3"	030300SF	300'	Mini
3"	035300SF*	5,300'	Maxi
4"	040100SF	100'	Micro
4"	040250SF	250'	Mini
4 "	043000SF	3,000'	Maxi
5"	050165SF	165'	Mini
5"	052300SF	2,300'	Maxi
6"	060100SF	100'	Mini
6"	061450SF	1,450'	Maxi
8"	080020SF*	20'	Stick
8"	080390SF	390'	Mini
8"	080825SF	825'	Maxi
10"	100020SF*	20'	Stick
10"	100525SF	525'	Maxi
12"	120020SF*	20'	Stick
12"	120320SF	320'	Maxi
15"	150020SF*	20'	Stick

* Special Order Items. Note: Geotextile fabric specifications are available upon request.

Sticks: Available Sizes

Perforated Lengths

Diameter	Number	Length	Unit
3"	030010PFC	10'	100'
4"	040010LBC	10'	100'
4"	040010PFC	10'	100'
4"	040020PF	20'	20'
6"	060020PF	20'	20'
8"	080020PF	20'	20'
10"	100020PF	20'	20'
12"	120020PF	20'	20'
15"	150020PF	20'	20'

Non-Perforated Lengths

Diameter	Number	Length	Unit
3"	030010NPC	10'	100'
4"	040010NPC	10'	100'
4"	040020NP	20'	20'
6"	060020NP	20'	20'
8"	080020NP	20'	20'
10"	100020NP	20'	20'
12"	120020NP	20'	20'
15"	150020NP	20'	20'

Wt.

Per Ft

(Lbs.)

0.2

0.3

0.5

0.7

1.3

1.8

3.0

4.3

Nominal

Flow Area

(Sq. In.)

7.1

12.6

19.6

28.3

50.3

78.5

113.1

176.7

0.40

0.75

0.80

1.10

1.65

Stick Micro Mini Maxi Corrugation Corrugation Nominal Approximate Length Roll Roll Roll Pitch Crown Ht. ID OD (Ft./Stick) (Ft./Roll) (Ft./Roll) (Ft./Roll) (inches) (inches) 3" 3.6 100 300 0.67 0.30 5,300 4" 4.7 10 100 250 3,000 0.67 0.30 5" 5.7 165 2,300 0.67 0.35 ____ ____

Dimensions, Weights and Strength

10/20

10/20

10/20

10/20

100

1,450

825

525

320

0.80

1.00

1.30

2.00

2.70



Flow Chart Full Flow Capacity

SINGLE-WALL PE PIPE: Manning's "n"

 $\begin{array}{l} = 0.015 - 3" - 6" \\ = 0.016 - 8" \\ = 0.017 - 10" \\ = 0.018 - 12" - 15" \\ = 0.020 - 18" - 24" \end{array}$

GPM | Slope (ft./100 ft.)

6"

8"

10"

12"

15"

6.8

9.5

11.9

14.3

17.5

Single-Wall Corrugated Polyethylene Pipe

Hydraulic Slope: Feet Per Hundred Feet

Diameter	0.02	0.05	0.10	0.20	0.50	1.0	2.0	5.0	10.0	20.0
3"	5	7.7	11	15	24	34	49	77	109	154
4"	11	17	23	33	52	74	105	166	234	331
5"	19	30	42	60	95	134	190	300	425	600
6"	31	49	69	98	154	218	309	488	690	976
8"	62	99	139	197	312	441	623	985	1,394	1,971
10"	106	168	238	336	532	752	1,064	1,682	2,378	3,363
12"	163	258	365	516	817	1,155	1,633	2,582	3,652	5,165
15"	296	468	662	937	1,481	2,094	2,961	4,682	6,622	9,365
18"	433	685	969	1,371	2,167	3,065	4,334	6,853	9,691	13,705
24"	933	1,476	2,087	2,952	4,667	6,600	9,334	14,758	20,871	29,516



GOLDFLEXTM

Prinsco's GOLDFLEX™ is a flexible dual-wall pipe that is revolutionizing the installation of agricultural drainage mains. Goldflex installs up to 60% faster than traditional dual-wall sticks and feeds directly into a plow boot, vastly increasing efficiency and improving safety by eliminating extra equipment, extra crew, and the need for an open trench.

Features & Benefits

- Installs 60% faster than dual-wall sticks
- Trenchless installation increases safety
- · Less labor & equipment in the field
- Ideal for high water table areas



WATER MANAGEMENT / DUAL-WALL



Available Sizes

Diameter (in.)	Perforation	Number	Nominal Length
12"	None	12GF215NP-FLEX	215'
12"	Perforated w. Sock	12GF215SF-FLEX	215'
12"	Narrow Slot	12GF215NS-FLEX	215'
15"	None	15GF190NP-FLEX	190'
15"	Perforated w. Sock	15GF190SF-FLEX	190'
15"	Narrow Slot	15GF190NS-FLEX	190'

Boot Design

Boot Width

The inside of the boot should be 3" wider than the outside diameter (OD) of the pipe. The additional width will help reduce friction on the pipe as it moves through the boot.

Bend Radius

The booth shall have a minimum of 50" bend radius. There are several manufacturers that produce boots for 12" and 15" single wall pipe. Many of these boots have a greater bend radius, which may be considered for use for installation of Goldflex.

Rounded Bottom

The boot shall have a rounded bottom to provide proper support up to the spring-line of the pipe. Voids in the haunch area of the pipe can result in additional stress on the pipe which could reduce the service life. The shape of the bottom of the boot should be similar to the OD of the pipe to provide sufficient support.



GOLDFLEX[™]



Burial Depth

The maximum burial depth is significantly influenced by the type of backfill and the compaction level of the soil around the pipe. Goldflex, along with all HDPE pipe, relies on the strength of the soil around it to help carry the overburden load. In a tile plow application, an adequately shaped trench bottom is necessary to provide support to the pipe. With this in mind, the maximum recommended burial depth for Goldflex installed in native soil by a tile plow is 8 feet. Reference Prinsco's Agricultural Installation Guide for additional information.



ECOFLO®100

For over 30 years, Prinsco has been providing farmers with drainage solutions to ensure a greener future. That has always meant more green in the field for more green in your pocket! Now, Prinsco has given your greener future a whole new meaning with an environmentally-friendly product called ECOFLO®100. It's a dual-wall pipe made with a minimum of 40% recycled content and engineered to provide maximum water flow and capacity for your critical drainage mains. Most importantly, it's tested and verified to offer a 100 year service life — an unprecedented performance level for any drainage pipe on the market today!







ECOFLO® 100 Main Sizes

Diameter	Number	Nominal Length
12"	12EF20NP	10'/20'
15"	15EF20NP	10'/20'
18"	18EF20NP	11'/20'
24"	24EF20NP	11'/20'
30"	30EF20NP	11'/20'

Perforated also available.

Other sizes available. See our website for more details.

Dimensions, Weights and Strength

Nominal ID (inches)	Approximate OD (inches)	Length (feet)	AASHTO Min. Pipe Stiffness@ 5% Deflection (PSI)	Corrugation Pitch (inches)	Approx. Wt./Ft. (Ibs.)
12"	14.40	10/20	50	2.00	3.1
15"	17.60	10/20	42	2.67	4.5
18"	21.50	11/20	40	3.00	6.5
24"	28.40	11/20	34	4.00	11.0
30"	34.80	11/20	28	4.00	14.6

DUAL-WALL PE PIPE: Manning's "n" = 0.012

ECOFLO® 100 Dual-Wall Corrugated Polyethylene Pipe with Smooth Interior



Dual Wall Flow Chart Full Flow Capacity

GPM | Slope (ft./100 ft.)

Pipe Diameter	Conveyance Factor (k)	0.02	0.05	0.10	0.20	0.50	1.0	2.0	5.0	10.0	20.0
12"	38.6	245	387	548	775	1,225	1,732	2,450	3,874	5,478	7,747
15"	70	444	702	993	1,405	2,221	3,141	4,442	7,023	9,933	14,047
18"	113.8	722	1,142	1,615	2,284	3,612	5,108	7,223	11,421	16,152	22,842
24"	245.1	1,556	2,460	3,478	4,919	7,778	11,000	15,556	24,596	34,784	49,192
30"	444.4	2,820	4,460	6,307	8,919	14,102	19,944	28,205	44,596	63,068	89,192

Manning's "n" = 0.012



Mobile Resources Prinsco.com/ecoflo100-resources ECOFLO® 100



GREEN FACT: The carbon footprint of HDPE is considerably smaller than concrete because it requires less energy to manufacture, transport and install.

GOLDFLO® WT GOLDFLO® DUAL-WALL WITH INTEGRAL BELL PIPE

GOLDFLO WT Integrated Bell & Spigot Dual-Wall GOLDFLO[®] Plain End Dual-Wall



GOLDFLO[®] and GOLDFLO WT[®] are manufactured to the most stringent requirements of AASHTO M294 or ASTM F2306, along with the ASTM D3212 watertight laboratory test requirements, making it ideal for projects where low cost, high installation efficiency, high product quality, and maximum watertight performance are critical.

Available Sizes

GOLDFLO® WT

Diameter	Number	Nominal Length
4"	4WT20NP	20'
6"	6WT20NP	20'
8"	8WT20NP	20'
10"	10WT20NP	20'
12"	12WT10NP/12WT20NP	10'/20'
15"	15WT10NP/15WT20NP	10'/20'
18"	18WT11NP/18WT20NP	11'/20'
24"	24WT11NP/24WT20NP	11'/20'
30"	30WT11NP/30WT20NP	11'/20'
36"	36WT11NP/36WT20NP	11'/20'
42"	42WT11NP/42WT20NP	11'/20'
48"	48WT11NP/48WT20NP	11'/20'
60"	60WT11NP/60WT20NP	11'/20'
	(size is evaluable perference)	

(pipe is available perforated)

GOLDFLO®

Diameter	Number	Nominal Length
4"	04GF20NP	20'
6"	06GF20NP	20'
8"	08GF20NP	20'
10"	10GF20NP	20'
12"	12GF20NP	20'
15"	15GF20NP	20'
18"	18GF20NP	20'
24"	24GF20NP	20'
30"	30GF20NP	20'
36"	36GF20NP	20'
(pipe is available perforated)	

ECOAIR Aeration: Available Sizes

Prinsco aeration products are ideal for grain storage applications. It has 3/8" - 5/8" holes. Pipe provided as a service to our customers with no design or any implied warranties.

GOLDFLO	O AERATION SCREENING (FIBERGLASS)					ASS)	
Diameter	Number	Length	Unit	Diameter	Number	Length	Unit
12"	12GF20AR	20'	20'	12"	SCR12	Sold per roll	48" X 100' Roll
15"	15GF20AR	20'	20'	15"	SCR15	Sold per roll	60" X 100' Roll
18"	18GF20AR	20'	20'	18"	SCR18	Sold per roll	72" X 100' Roll
24"	24GF20AR	20'	20'	24"	SCR24	Sold per roll	108" X 10' Roll

GOLDFLO®WT GOLDFLO®

Dimensions, Weights and Strength

Nominal ID (inches)	Approximate OD (inches)	Corrugation Pitch (inches)	Nominal Length (feet)	AASHTO Min. Pipe Stiffness@ 5% Deflection (PSI)	Approx Wt./Ft. (Ibs)
4"	4.8	.67	20	50	0.5
6"	7.1	.80	20	50	1.0
8"	9.5	1.00	20	50	1.7
10"	11.8	1.30	20	50	2.3
12"	14.4	2.00	10/20	50	3.1
15"	17.6	2.67	10/20	42	4.5
18"	21.5	3.00	11/20	40	6.5
24"	28.3	4.00	11/20	34	11.0
30"	34.7	4.00	11/20	28	14.6
36"	40.6	4.00	11/20	22	19.0
42"	47.8	6.00	11/20	20	30.0
48"	54.2	6.00	11/20	18	30.0
60"	66.8	6.00	11/20	14	40.0





Mobile Resources Prinsco.com/dualwall-resources

Dual Wall Flow Chart Full Flow Capacity GPM | Slope (ft./100 ft.)

Pipe	Conveyance	e										
Diameter	Factor (k)	0.02	0.05	0.10	0.20	0.50	1.0	2.0	5.0	10.0	20.0	
4"	2.1	13	21	29	41	65	93	131	207	293	414	
6"	6.1	39	61	86	122	193	273	386	610	863	1220	
8"	13.1	83	131	186	263	415	588	831	1,314	1,858	2,628	
10"	23.7	151	238	337	476	753	1,065	1,507	2,382	3,369	4,764	
12"	38.6	245	387	548	775	1,225	1,732	2,450	3,874	5,478	7,747	
15"	70	444	702	993	1,405	2,221	3,141	4,442	7,023	9,933	14,047	
18"	113.8	722	1142	1,615	2,284	3,612	5,108	7,223	11,421	16,152	22,842	
24"	245.1	1556	2460	3,478	4,919	7,778	11,000	15,556	24,596	34,784	49,192	
30"	444.4	2820	4460	6,307	8,919	14,102	19,944	28,205	44,596	63,068	89,192	
36"	722.6	4,586	7,252	10,256	14,504	22,932	32,431	45,864	72,518	102,556	145,036	
42"	1089.9	6,918	10,939	15,470	21,878	34,592	48,920	69,183	109,388	154,698	218,776	
48"	1556.1	9,877	15,618	22,087	31,235	49,387	69,844	98,775	156,176	220,867	312,353	
60"	2821.5	17,908	28,315	40,043	56,629	89,539	126,627	179,078	283147	400,430	566,293	

GOLDFLO® WT | GOLDFLO®

AG CATCH BASIN

Your subsurface water management system can only function as well as its outlet. So if the grade on your system won't allow for a gravity flow outlet, Prinsco's agricultural catch basin provides the perfect solution. They are built from polymer coated corrugated metal and provide strength and durability for years of trouble-free service. Coupled with other Prinsco products, they provide a water management system that is engineered with integrity!



Description	Number
48" X 13' CATCH BASIN W/ 18" STUB AND BOTTOM	CBCMP481318
48" DIA 1' VERTICAL EXTENSION	CBCMPR48112
48" DIA 2' VERTICAL EXTENSION	CBCMPR48212
48" DIA 3' VERTICAL EXTENSION	CBCMPR48312
48" GALVANIZED SINGLE OUTLET LID W/ STAND	CBCMPLSP48
48" GALVANIZED DUAL OUTLET LID W/ STAND	CBCMPLDP48

Features:

- Standard size is 13' tall x 48" diameter. providing increased storage volume.
- · Galvanized, polymer coated steel tanks provide increased protection against abrasion & corrosion.
- Basin stub receives 18" Prinsco ECOFLO100 or GOLDFLO. Connection is built for strength and easy to install with no couplers needed. Reducers to smaller diameters are also available.
- Backfill with native soils. No imported material needed, saving you time and money.

Also Available:



Galvanized lids



1', 2', & 3' vertical extensions

Additional allied products are available. Please contact your Prinsco representative for a complete list.

HICKENBOTTOM INTAKE RISERS

A Hickenbottom Intake is a three-piece unit that includes one orange section with holes or slots, one orange middle and a special blind tee. All below-ground sections of Hickenbottom intakes meet or exceed ASTM F 405 specifications for underground applications. All sections are three feet in length.



	ORANGE TOP	
	With 1" Holes	
Size	Number	Unit
5"	HB051	Each
6"	HB061	Each
8"	HB081	Each
10"	HB101	Each
12"	HB121	Each
	ORANGE TOP	
	With 1" x 4" Slots	
5"	HB051 x 4	Each

	ORANGE MIDDLE	
12"	HB121 x 4	Each
10"	HB101 x 4	Each
8"	HB081 x 4	Each
6"	HB061 x 4	Each

	With 5/16" Holes	
5"	HB05516	Each
6"	HB06516	Each
8"	HB08516	Each
10"	HB10516	Each
12"	HB12516	Each

	SPECIAL BLIND TEE			
5"	HB05T	Each		
6"	HB06T	Each		
8"	HB08T	Each		
10"	HB10T	Each		
12"	HB12T	Each		
RESTRICTOR				
	(Cut to Any Size)			

6"	HB06R	Each
8"	HB08R	Each

PRECISION INTAKES

Precision Intakes are constructed of high density polyethylene and are a highly visible bright yellow. Each part has an exclusive locking device. Precision Intakes are manufactured with adjustable bottom sections and are interchangeable with most other parts on the market.



	YELLOW TOP	
	With 1" Holes	
Size	Number	Unit
6"	PR061	Each
8"	PR081	Each

10"	PR101	Each
	YELLOW TOP	
1	With 1" x 4" Slots	
6"	PR061X4	Each
8"	PR081X4	Each
10"	PR101X4	Each

	BLACK BOTTOM	
	With 5/16" Holes	
6"	PR06516	Each
8"	PR08516	Each
10"	PR10516	Each

	RESTRICTOR	
	(Cut to Any Size)	
6"	PR06R	Each
8"	PR08R	Each
10"	PR10R	Each

PATENTED BLIND TEE		
6"	PR06T	Each
8"	PR08T	Each
10"	PR10T	Each



	JUNIELLE	LAGS
Plastic	flag is 5" x 4"	with a 30" wire.
Number	Item	Unit
FLSV01	Flo-Orange	Bundles of 100
FLSV02	Blue	Bundles of 100
FLSV03	White	Bundles of 100
FLSV04	Flo-Pink	Bundles of 100
FLSV05	Yellow	Bundles of 100
FLSV06	Flo-Green	Bundles of 100

Not all colors stocked on location



PLASTA PLUG		
Snaps inside the pipe to cap the end.		
Size	Number	Unit
3"	PP03	Box of 100
4"	PP04	Box of 100
5"	PP05	Box of 100
6"	PP06	Box of 100

CLAY PLUG		
Size	Number	Unit
4"	PP04C	Each / Pkg. 100
5"	PP05C	Each / Pkg. 100
6"	PP06C	Each / Pkg. 100



INTERNAL END PLUG

Size	Number	Unit
3"	P03	Each / Pkg. 50
4"	P04	Each / Pkg. 50
5"	P05	Each / Pkg. 25
6"	P06	Each / Pkg. 20
8"	P08	Each / Pkg. 10



EXTERNAL END CAP PLUG

Size	Number	Unit
3"	EC03	Each / Pkg. 50
4"	EC04	Each / Pkg. 50
6"	EC06	Each / Pkg. 20
8"	EC08	Each / Pkg. 10
10"	EC10	Each / Pkg. 10
12"	EC12	Each
15"	EC15	Each
18"	EC18	Each
24"	EC24	Each



INT	INTERNAL SNAP COUPLER		
Size	Number	Unit	
3"	IC03	Each / Pkg. 50	
4"	IC04	Each / Pkg. 50	
5"	IC05	Each / Pkg. 25	
6"	IC06	Each / Pkg. 20	
8"	IC08	Each / Pkg. 10	
10"	IC10	Each / Pkg. 5	
12"	IC12	Each / Pkg. 5	



EXTERNAL SNAP COUPLER

Size	Number	Unit
3"	SN03	Each / Pkg. 50
4"	SN04	Each / Pkg. 50
6"	SN06	Each / Pkg. 25
8"	SN08	Each / Pkg. 5
10"	GFSLV10	Each



CLAY ADAPTER

Adapts between corrugated pipe and		
Siza	Number	JIFVO.
3"	CA03	Fach/Pkg 25
4"	CA04	Each/Pkg. 50
5"	CA05	Each/Pkg. 50
6"	CA06	Each/Pkg. 20
8"	CA08	Each/Pkg. 20
10"	CA10	Each/Pkg. 15
12"	CA12	Each/Pkg. 5
15"	CA15	Each/Pkg. 5
18"	CA18	Each



SOIL-TIGHT COUPLER		
Size	Number	Unit
3"	SC03	Each / Pkg. 75
4"	SC04	Each / Pkg. 50
5"	SC05	Each / Pkg. 75
6"	SC06	Each / Pkg. 50
8"	SC08	Each / Pkg. 25
10"	SC10	Each
12"	SC12	Each
15"	SC15	Each
18"	SC18	Each
24"	SC24	Fach

PLASTIC TIES

Number	Unit
Use with 8"	-15" Coupler
TIE01	Pkg. of 100
	-

Use with 18"-36" Coupler TIE02 Pkg. of 50



Mobile Resources Prinsco.com/goldline-resources

800.992.1725 prinsco.com



STRAIGHT TEE		
Size	Number	Unit
2"	T0222	Each / Pkg. 50
3"	T0333	Each / Pkg. 50
4"	T0444	Each / Pkg. 20
5"	T0555	Each / Pkg. 5
6"	T0666	Each / Pkg. 5



BLIND TEE			
Size	Number	Unit	
3"	T033B	Each / Pkg. 50	
4"	T044B	Each / Pkg. 20	
5"	T055B	Each / Pkg. 5	
6"	T066B	Each / Pkg. 5	
8"	T088B	Each / Pkg. 4	
10"	T100B	Each	
12"	T120B	Each	
15"	T150B	Each	
18"	T180B	Each	



REDUCING TEE			
Size	Number	Unit	
5"	T0554	Each / Pkg. 5	
6"	T0654	Each / Pkg. 5	
8"	T0888	Each / Pkg. 4	
10"	T1010	Each	
12"	T1212	Each	
15"	T1515	Each	
18"	T1818	Each	



4" x 3" COMBO TEE				
Size	Number	Туре	Unit	
3"-4"	T0434	Co. Straight	Ea./Pkg. 25	
3"-4"	T043B	Co. Blind	Ea./Pkg. 25	



TAP TEE				
Size	Number	Туре	Unit	Pipe Fitting
4"	TT04S	Short	Each	6"-8"
4"	TT04L	Long	Each	10"-12"
5"	TT05S	Short	Each	10"-12"
5"	TT05L	Long	Each	15"-18"
6"	TT06S	Short	Each	15"-24"
6"	TT06L	Long	Each	30"-36"



90° ELBOWFor larger sizes (5"-15"), use a blind tee.SizeNumber3"E034"E044"E04



WYE			
Size	Number	Unit	
3"	Y03	Each/Pkg. 25	
4"	Y04	Each/Pkg. 15	
5"	Y05	Each/Pkg. 5	
5"	Y054*	Each	
6"	Y06*	Each/Pkg. 6	
8"	HB08Y*	Each	

*reducing wyes



STEP DOWN REDUCER				
Size	Number	Unit		
4" x 3"	R043	Each / Pkg. 25		
5" x 4"	R054	Each / Pkg. 25		
6" x 4"	R064	Each / Pkg. 25		
6" x 5"	R065	Each / Pkg. 25		
6"x5"x4"	R0654	Each / Pkg. 50		
8" x 6"	R086	Each		
10"×8"	R108	Each / Pkg. 5		
10"x8"x6"	R1086	Each / Pkg. 5		
12" x 10"	R1210	Each / Pkg. 5		
12"x10"x8"	R12108	Each / Pkg. 5		
15" x 12"	R1512	Each		
18" x 15"	R1815	Each		



CROSS TEE			
Size	Number	Unit	
6" x 5" x 4"	T0654C	Each	





INLINE WATER LEVEL CONTROL STRUCTURE

Pipe	Inside	Dim.
Size	Width	Depth
4"	8"	10"
6"	8"	10"
8"	12"	12"
10"	14"	16"
12"	16"	20"
15"	20"	24"
18"	24"	28"
24"	31"	39"
24"*	31"	39"

*To fit 24" dual-wall polyethylene pipe.



INLET WATER LEVEL CONTROL

	SHIOOTONE	
Pipe	Inside	Dim.
Size	Width	Depth
4"	8"	5"
6"	8"	5"
8"	12"	6"
10"	14"	8"
12"	16"	10"
15"	20"	12"
18"	24"	14"
24"	31"	18"
24"*	31"	18"

*To fit 24" dual-wall polyethylene pipe.

AGRI DRAIN INLINE WATER LEVEL CONTROL STRUCTURE

Note: Heights vary from 2' to 12'. Please call for specific heights.



Side view of how Inline Water Level Control Structures™ "stair-step" water through the soil profile.

AGRI DRAIN INLET WATER LEVEL CONTROL STRUCTURE

Regulate operating water level of ponds, marshes, wetlands and wastewater systems by installing valves on discharge pipes. The sliding drain gate shuts off the discharge pipe, but can be partially open to drain the pond at a controlled rate. Gaskets on the sliding control weir and drain gate resist leakage, seal tight.

Note: Heights vary from 2' to 6'. Please call for specific heights.

TYPICAL INSTALLATION Inlet Water Level Control Structure







TANDEM AXLE

MAXI STRINGER

Item	Unit
Tandem Axle	
Heavy Duty	Each
Single Axle	
Heavy Duty	Each
	Item Tandem Axle Heavy Duty Single Axle Heavy Duty

- Heavy duty frame but light enough for easy handling.
- Power unit is electric over hydraulic.
- All you need is a 12-volt battery.
- · Hydraulics are of industrial quality.
- Wheel base is 6'4".
- · Overall trailer length: 16'4".
- Weight: Single 1,635 lbs., Tandem - 2,100 lbs.
- \cdot Comes standard with hitch pin.
- · Standard 10'7" diameter table.



CRARY TILE PRO STRINGER TRAILER

- \cdot Walking Tandem Axle.
- Folding Wings.
- Electric Hydraulic Pump & Cylinder.
- Electric Brake for Spool Reel.
- · Manual Lock for Spool.
- Electric Brake Control & Lift Switch with 30' Rubber Cord.
- 11L-15 8 Ply Flotation Tires.
- Tail Light Kit for On Road Travel.
- · Replaceable Spools.
- · Pin Hitch (other styles available).



	BAR GUARD	
Number	Description	Unit
BG04	4" Bar Guard	Each
BG05	5" Bar Guard	Each
BG06	6" Bar Guard	Each
BG08	8" Bar Guard	Each
BG08H	8" Bar Guard	Each
BG10	10" Bar Guard	Each
BG10H	10" Bar Guard	Each
BG12	12" Bar Guard	Each
BG12H	12" Bar Guard	Each
BG18	18" Bar Guard	Each
BG24	24" Bar Guard	Each
BG30	30" Bar Guard	Each
BG36	36" Bar Guard	Each
BG42	42" Bar Guard	Each
BG48	48" Bar Guard	Each

Items with "H" are designed to fit Hickenbottom Intakes.





AGRI DRAIN PIPE STRAPS

 Number
 Item
 Unit

 PTPS
 Pipe Strap Set
 Set

 Dramatically increases pull apart
 strength on dual wall polyethylene bell and spigot pipe couplers.
 • Fits up to 24" pipe size.



RODENT GUARD ZINC PLATED			
Size	Number	Unit	
4"	RG04	Each	
6"	RG06	Each	
8"	RG08	Each	
10"	RG10	Each	
12"	RG12	Each	
15"	RG15	Each	
18"	RG18	Each	
24"	RG24	Each	
30"	RG30	Each	
3"	RG36	Each	
42"	RG42	Each	
48"	RG48	Each	
60"	RG60	Each	



SPLICING TAPE

Heavy-duty tape for tight pipe connection or for splicing fabric. 2" x 108' roll. By roll or case of 24 rolls. Number Unit

Number	Unit
BT02	Roll
BT02P	6 Pack
BT02CP	Case of 24



TILE PROBE Flexible steel probe available in /16" and 3/8" rod, 4', 4.5' and 5

5/16" and	d 3/8" rod, 4', 4.5' ar	ıd 5'.
Number	Item	Unit
TP04	5/16" x 4'	Each
TP04.5	5/16" x 4.5'	Each
TP05	5/16" x 5'	Each
TP05HD	3/8" x 5'	Each
TP06	5/16" x 6'	Each
TP06HD	3/8" x 6'	Each

SHOVELS & SPADES

- Solid fiberglass handles are guaranteed for life.
- Heavy 14-gauge blades with hollow-back construction.
- Forward-turned steps for foot comfort and easier penetration
- Does not absorb moisture; resists industrial chemicals.
 Easily cleaned

ACCESSORIES: AGRI DRAINTM

of concrete, tar, etc. • Easy to handle in extreme temperatures.

- Ergonomic design for comfort and stress reduction.
- Excellent rigidity reduces wasted effort.



MUD SLINGERS

- · Holes in blade allow for superior mud release.
- The blade is almost 1 pound lighter than regular shovels and spades.
- · Fiberglass handle carries a 1-year warranty.



VALTERRA GATE VALVES

Attaches to SC	CH40 PVC pipe.
Size	Number
1.5"	VV01.5
2"	VV02
3"	VV03
4"	VV04
6"	VV06
8"	VV08
10"	VV10
12"	VV/12



AGRI-DRAIN STANDARD FLAP GATES

Size	PVC, CMP, Etc.	Corrugated Plastic
4"	FG04	FG04
6"	FG06	FG06
8"	FG08	FG08P
10"	FG10	FG10P
12"	FG12	FG12P
15"	FG15	FG15P
18"	FG18	FG18P
21"	FG21	N/A
24"	FG24	FG24P
30"	FG30	FG30P
36"	FG36	FG36P

Enjoy the agricultural and environmental benefits of "VARIABLE RATE DRAINAGE" with Agri Drain's Water Gate. The Water Gate is a floatactivated head pressure valve. It maintains a one-foot increase in water elevation between the downstream and upstream sides of the valve. The Water Gate operates in either free-flow or managed-flow mode. The managed-flow mode is activated by backing water up into the valve. This is accomplished by installing a Water Level Control Structure (WLCS) in the tile main at the lowest point of the drainage system that you wish to manipulate or control. Locate the first Water Gate one foot in elevation upstream from the WLCS. Water Gates can be used in series, locating additional units at one-foot elevation intervals.

- Manage up to 8"-diameter subsurface drain tile.
- Fully automatic.
- Float operated.
- · Infinitely variable.
- Completely buried to allow for convenient field operations.
- Valve is intended for gravity flow: Low pressure and some seepage may occur. Valve is not pressure rated.

WATER GATE

Agri Drain



Side view of how Inline Water Level Control Structure and Water Gates "stair-step" water up through the soil profile.



Top view showing the zones of influence that each device manages.

U.S. Patent No. 7,942,606 B2 Canadian Patent Pending





SOIL TIGHT SPLIT COUPLER	
Size	Number
4"	SC04
6"	SC06
8"	SC08
10"	SC10
12"	SC12
15"	SC15H
18"	SC18
24"	SC24
30"	SC30
36"	SC36
42"	SC42
46"	SC46
60"	SC60

PLASTIC TIES	
Number	Unit
Use with 8"-15	5" Coupler

Use with	8"-15" Coupler
TIE01	Pkg. of 100

Use with 18"-36" Coupler	
TIE02	Pkg. of 50



ELBOW - 22.5°	
Size	Number
4"	GFE0422
6"	GFE0622
8"	GFE0822
10"	GFE1022
12"	GFE1222
15"	GFE1522
18"	GFE1822
24"	GFE2422
30"	GFE3022
36"	GFE3622
42"	GFE4222
48"	GFE4822
60"	GFE6022



ELBOW - 90° (2-Piece)	
Size	Number
4"	GFE04902
6"	GFE06902
8"	GFE08902
10"	GFE10902
12"	GFE12902
15"	GFE15902
18"	GFE18902
24"	GFE24902
30"	GFE30902
36"	GFE36902
42"	GFE42902
48"	GFE48902
60"	GFE60902



ELBOW - 90° (3-Piece)	
Size	Number
4"	GFE0490
6"	GFE0690
8"	GFE0890
10"	GFE1090
12"	GFE1290
15"	GFE1590
18"	GFE1890
24"	GFE2490
30"	GFE3090
36"	GFE3690
42"	GFE4290
48"	GFE4890
60"	GFE6090



ELBOW - 45°		
Size	Number	
4"	GFE0445	
6"	GFE0645	
8"	GFE0845	
10"	GFE1045	
12"	GFE1245	
15"	GFE1545	
18"	GFE1845	
24"	GFE2445	
30"	GFE3045	
36"	GFE3645	
42"	GFE4245	
48"	GFE4845	
60"	GFE6045	

GASKET FOR SNAP COUPLER

Size	Number
4"	GFGSK04
6"	GFGSK06
8"	GFGSKOR08
10"	GFGSK10



Mobile Resources Prinsco.com/dualwall-accy



REDUCER (One-Step)		
Size	Reducer	
6"	Avail. in 4"	
8"	Avail. in 4"-6"	
10"	Avail. in 4"-8"	
12"	Avail. in 4"-10"	
15"	Avail. in 4"-12"	
18"	Avail. in 4"-15"	
24"	Avail. in 4"-18"	
30"	Avail. 4"- 24"	
36"	Avail. 4"-30"	
42"	Avail. 4"-36"	
48"	Avail. 4"-42"	
60"	Avail. 4"-48"	



	TEE
Size	Number
4"	GFT0404
6"	GFT0606
8"	GFT0808
10"	GFT1010
12"	GFT1212
15"	GFT1515
18"	GFT1818
24"	GFT2424
30"	GFT3030
36"	GFT3636
42"	GFT4242
48"	GFT4848
60"	GFT6060



SADDLE TEES			
Size		Number	
GEST1004	10"	10" TO 4"	
GEST1006	10	10" TO 6"	
GEST1008		10" TO 8"	
GFST1204	12"	12" TO 4"	
GFST1206		12" TO 6"	
GFST1208		12" TO 8 "	
GFST1210		12" TO 10"	
GFST1504	15"	15" X 4"	
GFST1506		15" X 6"	
GFST1508		15" X 8"	
GFST1510		15" X 10"	
GFST1512		15" X 12"	
GFST1804	18"	18" X 4"	
GFST1806		18" X 6"	
GFST1808		18" X 8"	
GFST1810		18" X 10"	
GFST1812		18" X 12"	
GFST1815		18" X 15"	
GFST2404	24"	24" X 4"	
GFST2406		24" X 6"	
GFST2408		24" X 8"	
GFST2410		24" X 10"	
GFST2412		24" X 12"	
GFST3004	30"	30" X 4"	
GFST3006		30" X 6"	
GFST3008		30" X 8"	
GFST3010		30" X 10"	
GFST3012		30" X 12"	



*4' x 4' NO-SEEP COLLARS™

Four-foot square sheet of high density plastic fastened with stainless steel bolts.

1		
Size	Number	Unit
4"	NSC4404	Each
6"	NSC4406	Each
8"	NSC4408	Each
10"	NSC4410	Each
12"	NSC4412	Each
15"	NSC4415	Each
18"	NSC4418	Each
24"	NSC4424	Each
	*	

*special order item

5'x5' and 6'x6' no-seep collars are also available.



CROSS TEE		
Size	Number	
4"	GFCT04	
6"	GFTC06	
8"	GFTC08	
10"	GFTC10	
12"	GFCT12	
15"	GFCT15	
18"	GFCT18	
24"	GFCT24	



	WYE - 45°
Size	Number
4"	GFY0404
6"	GFY0606
8"	GFY0808
10"	GFY1010
12"	GFY1212
15"	GFY1515
18"	GFY1818
24"	GFY2424

REDUCING WYES

Size		Number
GFY0604	6"	6" X 4" Wye
GFY0804	8"	8" X 4" Wye
GFY0806		8" X 6" Wye
GFY1004	10"	10" X 4" Wye
GFY1006		10" X 6" Wye
GFY1008		10" X 8" Wye
GFY1204	12"	12" TO 4" Wye
GFY1206		12" TO 6" Wye
GFY1208		12" TO 8" Wye
GFY1210		12" TO 10" Wye
GFY1504	15"	15" X 4" Wye
GFY1506		15" X 6" Wye
GFY1508		15" X 8" Wye
GFY1510		15" X 10" Wye
GFY1512		15" X 12" Wye
GFY1804	18"	18" X 4" Wye
GFY1806		18" X 6" Wye
GFY1808		18" X 8" Wye
GFY1810		18" X 10" Wye
GFY1812		18" X 12" Wye
GFY1815		18" X 15" Wye
GFY2404	24"	24" X 4" Wye
GFY2406		24" X 6" Wye
GFY2408		24" X 8" Wye
GFY2410		24" X 10" Wye
GFY2412		24" X 12" Wye
GFY2415		24" X 15" Wye
GFY2418		24" X 18" Wye
GFY3004	30"	30" X 4" Wye
GFY3006		30" X 6" Wye
GFY3008		30" X 8" Wye
GFY3010		30" X 10" Wye
GFY3012		30" X 12" Wye
GFY3015		30" X 15" Wye
GFY3018		30" X 18" Wve

Size		Number
GFY3604	36"	36" X 4" Wye
GFY3606		36" X 6" Wye
GFY3608		36" X 8" Wye
GFY3610		36" X 10" Wye
GFY3612		36" X 12" Wye
GFY3615		36" X 15" Wye
GFY3618		36" X 18" Wye
GFY3624		36" X 24" Wye
GFY4204	42"	42" X 4" Wye
GFY4206		42" X 6" Wye
GFY4208		42" X 8" Wye
GFY4210		42" X 10" Wye
GFY4212		42" X 12" Wye
GFY4215		42" X 15" Wye
GFY4218		42" X 18" Wye
GFY4224		42" X 24" Wye
GFY4804	48"	48" X 4" Wye
GFY4806		48" X 6" Wye
GFY4808		48" X 8" Wye
GFY4810		48" X 10" Wye
GFY4812		48" X 12" Wye
GFY4815		48" X 15" Wye
GFY4818		48" X 18" Wye
GFY4824		48" X 24" Wye
GFY6004	60"	60" X 4" Wye
GFY6006		60" X 6" Wye
GFY6008		60" X 8" Wye
GFY6010		60" X 10" Wye
GFY6012		60" X 12" Wye
GFY6015		60" X 15" Wye
GFY6018		60" X 18" Wye
GFY6024		60" X 24" Wye

REDUCING TEES

Size		Number	Size		Number	Size		Number
GFT0604	6"	6" TO 4" Tee	GFT2415	24"	24" TO 15" Tee	GFT4230	42"	42" TO 30" Tee
GFT0804	8"	8" TO 4" Tee	GFT2418		24" TO 18" Tee	GFT4236		42" TO 36" Tee
GFT0806		8" TO 6" Tee	GFT3004	30"	30" TO 4" Tee	GFT4804	48"	48" TO 4" Tee
GFT1004	10"	10" TO 4" Tee	GFT3006		30" TO 6" Tee	GFT4806		48" TO 6" Tee
GFT1006		10" TO 6" Tee	GFT3008		30" TO 8" Tee	GFT4808		48" TO 8" Tee
GFT1008		10" TO 8" Tee	GFT3010		30" TO 10" Tee	GFT4810		48" TO 10" Tee
GFT1204	12"	12" TO 4" Tee	GFT3012		30" TO 12" Tee	GFT4812		48" TO 12" Tee
GFT1206		12" TO 6" Tee	GFT3015		30" TO 15" Tee	GFT4815		48" TO 15" Tee
GFT1208		12" TO 8" Tee	GFT3018		30" TO 18" Tee	GFT4818		48" TO 18" Tee
GFT1210		12" TO 10" Tee	GFT3024		30" TO 24" Tee	GFT4824		48" TO 24" Tee
GFT1504	15"	15" TO 4" Tee	GFT3604	36"	36" TO 4" Tee	GFT4830		48" TO 30" Tee
GFT1506		15" TO 6" Tee	GFT3606		36" TO 6" Tee	GFT4836		48" TO 36" Tee
GFT1508		15" TO 8" Tee	GFT3608		36" TO 8" Tee	GFT4842		48" T0 42" Tee
GFT1510		15" TO 10" Tee	GFT3610		36" TO 10" Tee	GFT6004	60"	60" TO 4" Tee
GFT1512		15" TO 12" Tee	GFT3612		36" TO 12" Tee	GFT6006		60" TO 6" Tee
GFT1804	18"	18" TO 4" Tee	GFT3615		36" TO 15" Tee	GFT6008		60" TO 8" Tee
GFT1806		18" TO 6" Tee	GFT3618		36" TO 18" Tee	GFT6010		60" TO 10" Tee
GFT1808		18" TO 8" Tee	GFT3624		36" TO 24" Tee	GFT6012		60" TO 12" Tee
GFT1810		18" TO 10" Tee	GFT3630		36" TO 30" Tee	GFT6015		60" TO 15" Tee
GFT1812		18" TO 12" Tee	GFT4204	42"	42" TO 4" Tee	GFT6018		60" TO 18" Tee
GFT1815		18" TO 15" Tee	GFT4206		42" TO 6" Tee	GFT6024		60" TO 24" Tee
GFT2404	24"	24" TO 4" Tee	GFT4208		42" TO 8" Tee	GFT6030		60" TO 30" Tee
GFT2406		24" TO 6" Tee	GFT4210		42" TO 10" Tee	GFT6036		60" TO 36" Tee
GFT2408		24" TO 8" Tee	GFT4212		42" TO 12" Tee	GFT6042		60" TO 42" Tee
GFT2410		24" TO 10" Tee	GFT4215		42" TO 15" Tee	GFT6048		60" TO 48" Tee
GFT2412		24" TO 12" Tee	GFT4218		42" TO 18" Tee			
			GFT4224		42" TO 24" Tee			









TRASH GUARD

Used on flared end sections with 3:1 slopes to help keep debris out and prevent clogging.

Size	Number	Unit
8"	TGS08	Each
10"	TGS10	Each
12"	TGS12	Each
15"	TGS15	Each
18"	TGS18P1215	Each
24"	TGS24P18	Each
30"	TGS30P24	Each
36"	TGS36P3036	Each
42"	TGS42	Each
48"	TGS48	Each
60"	TGS60	Each

GALVANIZED TRASH GUARD

Used on flared end sections with 3:1 slopes to help keep debris out and prevent clogging.

Size	Number	Unit
12"	GTG12	Each
15"	GTG15	Each
18"	GTG18	Each
24"	GTG24	Each
30"	GTG30	Each
36"	GTG36	Each

WATERTIGHT BELL COUPLER GASKETS

Used to connect to Prinsco PVC Catch Basins or Fabricated Fittings

0.01110 0	i i dibiliodico di i ittiligo	
4"	GFGSK04WT	Each
6"	GFGSK06WT	Each
8"	GFGSK08WT	Each
10"	GFGSK10WT	Each
12"	GFGSK12WT	Each
15"	GFGSK15WT	Each
18"	GFGSK18WTMW	Each
18"	GFGSK18WTWC	Each
24"	GFGSK24WTMW	Each
24"	GFGSK24WTWC	Each
30"	GFGSK30WTMW	Each
30"	GFGSK30WTWC	Each

GOLDFLO WATER STOP GASKET

Size	Number	Unit
12"	GFWSG12	Each
15"	GFWSG15	Each
18"	GFWSG18	Each
24"	GFWSG24	Each
30"	GFWSG30	Each
36"	GFWSG36	Each
42"	GFWSG42	Each
48"	GFWSG48	Each
60"	GFWSG60	Fach



STEEL APRONS

Used on projects where 2.5:1 slope is specified. Fits contour and assists water flow through the culvert.

	Size	Number	Unit
	8"	ES08	Each
	10"	ES10	Each
	12"	ES12	Each
	15"	ES15	Each
	18"	ES18	Each
	24"	ES24	Each
	30"	ES30	Each
	36"	ES36	Each
	42"	ES42	Each
	48"	ES48	Each
	60"	ES60	Each



SAFETY APRONS

Used wh	nere 6:1 slopes are	required.
Available	with or without sa	fety grate.
Size	Number	Unit

12"	SA0012	Each
15"	SA0015	Each
18"	SA0018	Each
24"	SA0024	Each
Safety	aprons are all special-ord	der items.



PLASTIC APRONS

High density polyethylene aprons designed for GOLDLINE and GOLDFLO/

	ECOFLO applications	
Size	Number	Unit
12"	PLAP12	Each
15"	PLAP15	Each
18"	PLAP18	Each
24"	PLAP24	Each
30"	PLAP30	Each
36"	PLAP36	Each

	EXTERNAL ENDCA	PS
Size	Number	Unit
8"	EC08-GF	Each
10"	EC10-GF	Each
12"	EC12-GF	Each
15"	EC15-GF	Each
18"	EC18-GF	Each
24"	EC24-GF	Each
30"	EC30-GF	Each
36"	EC36-GF	Each
42"	EC42-GF	Each
48"	EC48-GF	Each



PIPE ADAPTER			
Size	Number	Unit	
10"	GFA10	Each	
12"	GFA12	Each	
15"	GFA15	Each	
18"	GFA18	Each	
24"	GFA24	Each	
30"	GFA30	Each	
36"	GFA36	Each	

RUBBER FLEXIBLE MANHOLE ADAPTER

Size	Number	Unit
12"	GFAD12MH	Each
15"	GFAD15MH	Each
18"	GFAD18MH	Each
24"	GFAD24MH	Each

GOLDFLO HDPE X SDR35 SDIGOT ADADTED

JEIGOT ADAFTEN			
Size	Number	Unit	
4"	GFAD04MH-PVC35	Each	
6"	GFAD06MH-PVC35	Each	
8"	GFAD08MH-PVC35	Each	
10"	GFAD10MH-PVC35	Each	
12"	GFAD12MH-PVC35	Each	
15"	GFAD15MH-PVC35	Each	
18"	GFAD18MH-PVC35	Each	
24"	GFAD24MH-PVC35	Each	

GOLDFLO HDPE X SCH40

SPIGOT ADAPTER			
Size	Number	Unit	
4"	GFAD04MH-PVC40	Each	
6"	GFAD06MH-PVC40	Each	
8"	GFAD08MH-PVC40	Each	
10"	GFAD10MH-PVC40	Each	
12"	GFAD12MH-PVC40	Each	

INSTALLATION

Introduction

Corrugated HDPE pipe, as with all buried pipe, functions as a buried structure where the performance of the structure is dependent on the quality of the embedment backfill and installation. Varying degrees of performance may be required depending on specific project details. This installation guide specifically addresses common installation methods for corrugated HDPE in agricultural applications to ensure adequate performance is achieved. Since agricultural installations do not involve pipe buried under public roadways, allowable pipe deflection may extend beyond what is typically acceptable in commercial applications.

The recommendations presented here detail proper backfill and installation methods for single wall and dual wall pipe to achieve a dependable subsurface or groundwater control system. This document should not be used for commercial applications, storm sewer applications, road crossings or where greater service performance is required. For any application outside of these basic guidelines (such as poor soils, high loads, or other factors that may affect performance), please contact your local Prinsco Representative or visit www.prinsco.com for more comprehensive installation information.

Shaped Bottom Trench

For burial depths of 8' or less, a shaped trench bottom shall be used, provided the native soil can be cut to a stable shaped trench. For trencher installations, trenches shall be overfilled to allow consolidation. For backhoe installations, the backfill should be compacted to reduce the amount of settling. Most plow installations require minimal backfilling; however, care should be taken to ensure the trench is filled and bridging does not occur. Native soil may be used as backfill provided that it can be compacted around the pipe and that all voids are removed. If native soil is not suitable for backfilling, a granular material shall be used.

"V" Groove Trench

- The 90-degree "V" groove trench bottom as shown in Figure 1 is acceptable for pipe with diameters less than or equal to 8". A "V" groove trench bottom is typically formed with a pull type or tractor mounted plow. Refer to Table 1 for approximate dimensions for a "V" groove trench.
- A trapezoidal groove or rounded trench bottom may also be used for pipe diameters less than or equal to 8".



FIGURE 1 4"- 8" Diameter Pipe "V" Groove Trench

continued

Rounded Trench Bottom For pipe diameters of 8"

- For pipe diameters of 8" and greater, a rounded trench bottom should be used as shown in Figure
 2. The rounded trench bottom should fit the outside of the pipe, with ≤1" gap on either side of the pipe, to provide sufficient pipe support. Recommended dimensions are found in Table 2.
- A rounded trench bottom may be formed with the use of a shaped trencher or a backhoe with a half-circle shaped bucket, also referred to as a "spoon".
 An example of a "spoon" is shown in Figure 3.
- Burial depths greater than 8' may be achieved with a rounded bottom, provided the trench bottom offers adequate support and an imported backfill (Class I or II) is placed and compacted along the sides and extending to 6" over top of the pipe.
 For more information, contact your local Prinsco Representative.

Table 2. Recommended Rounded Trench Dimensions				
Pipe Diameter (in)	Recommended Rounded Width "X" (in)	Minimum Depth "Y" (in.)		
8"	9.5"	4.8"		
10"	11.8"	5.9"		
12"	14.4"	7.2"		
15"	17.6"	8.8"		
18"	21.5"	10.8"		
24"	28.3"	14.2"		
30"	34.7"	17.4"		
36"	40.6"	20.3"		
42"	47.8"	23.9"		
48"	54.2"	27.1"		
60"	66.8"	33.4"		

Recommended widths are based on outside diameter of pipe. Gap on either side of the pipe should not exceed 1". Wider trench widths may adversely affect the pipe performance.



Figure 2. 8"- 60" Diameter Pipe Rounded Trench

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Figure 3. "Spoon" Attachment

Flat Bottom Trench Construction

- For burial depths greater than 8', a flat bottom trench, shown in Figure 4, should be used. The middle portion of the bedding, equal to 1/3 of the pipe's OD, shall be loosely placed. The remainder shall be compacted in accordance with Table 3.
- The trench should be just wide enough to place and compact backfill around the entire pipe. Widths should be within a minimum of the pipe OD plus 6" to a maximum of the pipe OD plus 24".
- For parallel pipe installations, allow space between pipe runs for proper compaction. Spacing shall be no less than ½ of the pipe OD between the parallel pipe runs.
- Trench bottoms containing bedrock, soft muck or refuse, or other material unable to provide long-term pipe support are unacceptable. Poor material shall be removed and replaced with acceptable materials, excavating soft areas approximately 2' below grade and three times pipe width.
- Remove rock or unyielding material 1' below grade and a minimum of 6" on either side of pipe.
- Where soil migration is a concern, a non-woven filter fabric (geotextile) shall be used to separate the backfill from the native soil.

		Та	ble (3.	
Acceptable	Backfill	Material	and	Compaction	Requirements

	Soil Classification		Minimum	Maximum*
Description	ASTM D232	ASTM D2487	Com- paction Standard Density (%)	Layer Height (in.)
Graded or crushed stone Crushed gravel	Class I	-	Dumped**	18"
Well-graded sand, gravel, and gravel/sand mixtures; Poorly graded sand, gravel and gravel/sand mixtures; little or no fines	Class II	GW GP SW SP	85%	12"
Silty or clayey gravel, Gravel/sand/silt or gravel and/clay mixtures, silty or clayey sands, sand/clay or sand/silt mixtures	Class III	GM GC SM SC	90%	9"
Inorganic silts and low to medium plasticity clays; gravelly, sandy, or silty clays; some fine sands	Class IVA	ML CL	90%	6"

*Layer Heights should not exceed one-half the pipe diameter. Layer heights may also need to be reduced to accommodate compaction method. ** Material shall be "knifed" into the haunch area of the pipe by use of a shovel or similar means

Backfill Material Selection

- Selection of proper backfill materials is critical to ensuring adequate pipe support. Native soil may be used provided it meets the classification descriptions provided in Table 3.
- Non-cohesive sand, sand/gravel mixes and other Class II or III materials must be compacted to remove voids.
- Class IVA materials provide reduced structural support, compared with Class I, II, & III. Therefore, additional pipe deflection may be experienced in applications utilizing Class IVA backfill materials. The additional deflection is anticipated and shall not compromise service performance, provided the compaction and maximum burial depth criteria are followed as outlined in this document and in ASTM F449.

Backfill Placement and Compaction

- Place and compact backfill in layers, meeting requirements of ASTM F449 and as outlined in Table 3.
- Place and compact initial backfill in layers around pipe and at least 6" above the crown as shown in Figure 4.
- · Avoid impacting pipe with compaction equipment.
- The final minimum cover shall be 2' over the crown of the pipe where live vehicular or equipment loading is present and shall be no less than 1' in areas not subjected to live loading.
- The maximum burial depth is influenced by the pipe diameter, backfill material, degree of compaction, trench dimensions and anticipated loading. Contact your local Prinsco Representative for maximum burial depths.



Figure 4. Trench Construction for Burial Depths Greater than 8th

Design Considerations

To achieve optimum performance, it is important to consider factors such as pipe connections, field conditions, soil type and texture, potential negative pressures, and outlet protection. Failure to consider all design aspects may result in reduced flow capacity or system failure. For more information, contact your local Prinsco Representative.

- Connecting Dissimilar Pipe: Drainage systems occasionally require pipe connections between HDPE and other pipe materials such as concrete, corrugated metal, or clay tile. For dissimilar pipe connections, adapters, couplers, or other fittings may be used.
- Soil and Water Table: For effective drainage, it is necessary to understand the soil and water table characteristics at the depth the pipe will be installed. Sand or fine silt may move into the system and restrict flow in areas with sandy soils or fluctuating water tables (due to seasonal variations, pumping, or well-pointing methods). In these situations, a non-woven filter fabric surrounding the pipe is recommended. Site specific conditions shall be determined by a geotechnical or design engineer.
- Negative Pressure Relief: Areas with abrupt changes in elevation may result in negative pressure, resulting in blowouts. To ease any potential negative pressure, the flatter section shall have a 25% greater flow capacity than the steep section. Relief wells shall be installed where the pipe changes from steep to flat without an increased flow capacity.
- Outlet Protection: Protecting the outlet against animals, fire and erosion extends the life of the system. Animal guards, rip-rap or other erosion protection, and fire resistant material in areas subject to burning are recommended at the outlet.

How will subsurface water management affect overall farming operations?

Subsurface water management allow soils to shed excess moisture and warm up faster in the spring allowing for field operations to commence earlier in the season. It will also help fields with intermittent wet spots dry more uniformly.

Will subsurface water management stress crops in dry years?

While the greatest benefits of subsurface water management are realized in wet years, it also promotes deep root development which gives crops better access to soil moisture in dry years. By using a control structure with subsurface water management systems, water can also be held back throughout the growing season to keep moisture available to crops when it is needed most.

Will adding subsurface water management to a field increase chances of flooding in local streams?

Prinsco subsurface water management systems promote greater infiltration rates in the soil. This allows for more water to be pulled down into the soil, decreasing the amount of runoff. Water that is pulled into the soil is released from tile into waterways more slowly than it would be flowing over land. Therefore, the chance for flooding actually decreases. Research has shown that adding subsurface water management increases the base flow by 5-10%, but only after the chance for flooding has dissipated.

What tile spacing should I use for a field?

There are several factors that affect how you should space between tile lines, including soil type, tile depth, drainage coefficient, and tile diameter. Drainage coefficients determine the rate at which water will be removed from the soil and typically range from 1/8" - 1" per 24 hours. Depending on your soil type, the drainage coefficient you use will determine what spacing you need to maximize the yield and profitability of your system.

When should I consider smaller pipe perforations or the use of pipe sock?

First, it is necessary to understand the properties of the soil at the depth your pipe will be installed. A soil test should be performed to determine the soil type and particle size. Heavy soils such as clay or loam will typically require standard perforated pipe, while sandy soils will likely require sock or narrow slot pipe. When deciding between sock versus narrow slot pipe, consider the 25% rule — if soils are less than 25% clay, they probably need sock pipe.

How should dual wall pipe joints be assembled?

Pipe equipped with integral bell and spigot joints, such as Prinsco's ECOFLO® 100 or GOLDFLO WT®, must be installed by inserting the spigot into the bell. Pushing the bell onto the spigot increases the likelihood of bedding material being forced into the joint, disrupting the gasket and severely undermining joint performance. Pipe laying should always begin at the outlet with the spigots pointed downgrade.

When are fields too flat to drain? How would I provide an adequate outlet for a subsurface water management system?

In order for tile laterals to provide proper subsurface water management, a minimum grade of 0.05 to 0.1% should be maintained. Where the topography does not allow for a gravity flow outlet, pumped outlets can be used. Prinsco's Ag Catch Basins provide the right storage solution for pumped outlets.

What is the maximum burial depth for the pipe?

Achieving maximum burial depths is largely dependent on proper installation practices. For burial depths of 8 feet or less, Prinsco recommends a shapedbottom trench. For burial depths of more than 8 feet, a standard trench installation should be used as shown in our Ag Installation Guide on page 28. Proper installation positively contributes to the load carrying capacity of the pipe, resulting in greater burial depths. Contact your local Prinsco representative to discuss maximum burial depths for your installation.

Can water be sent from one watershed into a different watershed?

No. Most state drainage laws are clear that water may not be transferred from one watershed to another. Adding water to a watershed can cause increased erosion. For example, increasing water flow in a stream can cause an unstable stream bank.



Mobile Resources Prinsco.com/goldline-resources

ADDITIONAL INFO

GOLDLINE®

- ASTM F 405: Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings (withdrawn, replaced by F667)
- ASTM F 667: Standard Specification for 3 through 24in. Corrugated Polyethylene Pipe and Fittings

AASHTO grade GOLDLINE pipe meets the above standards, plus the list below

- AASHTO M 252: Standard Specification for Corrugated Polyethylene Drainage Pipe
- AASHTO M 294: Standard Specification for Corrugated Polyethylene Pipe, 300 to 1500mm (12 to 60in.) Diameter

ECOFLO® 100

- ASTM F 2306: Standard Specification for 12 to 60in. (300 to 1500mm) Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications
- AASHTO M 294: Standard Specification for Corrugated Polyethylene Pipe, 300 to 1500mm (12 to 60in.) Diameter*
- ASTM F 477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- ASTM D 3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

GOLDFLO WT®/GOLDFLO®

- AASHTO M 252: Standard Specification for Corrugated Polyethylene Drainage Pipe
- AASHTO M 294: Standard Specification for Corrugated Polyethylene Pipe, 300 to 1500mm (12 to 60in.) Diameter
- ASTM F 477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- ASTM D 3212: Standard Specification for Joints for Drain and Sewer Plastic Pipes using Flexible Elastomeric Seals

* ECOFLO® 100 meets the material and finished product performance requirements of this standard but is manufactured with a minimum 40% recycled content.

Prinsco offers a dual-wall pipe made from polypropylene that is available for culverts and other conveyance applications. Call for details.



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MANUFACTURING PLANTS & YARDS



Prinsco delivers quality from manufacturing right down to the service we provide on delivery.

The chart to the right gives approximate full-load quantities for a Prinsco 53-foot trailer. The quantities may vary according to the length of the trailer or if common carriers are employed for shipment. In mixed-size load situations, calculate the percentage of the load that each size will constitute. Then total the percentages to determine the extent of the load. If pipe lengths are shipped, small diameter pipe may be nested inside the larger sizes. This will maximize load quantities and reduce freight costs. The chart is strictly "rule of thumb" to give you a general idea of load quantities. For more specific figures, call our customer service department.

DIAMATER UNIT UNITS PER LOAD FOOTAGE

	GOLDLINE COF	RUGATE	D PIPE:
3"	Micro	260	26,000
	Mini	88	26,400
	Maxi	6	31,800
4"	Micro	170	17,000
	Mini	76	19,000
	Maxi	6	18,000
5"	Mini	76	12,540
	Maxi	6	13,800
6"	Mini	76	7,600
	Maxi	6	8,700
8"	20' Lengths	266	5,320
	Maxi	6	4,950
10"	20' Lengths	180	3,600
	Maxi	6	3,150
12"	20' Lengths	120	2,400
	Maxi	6	1,920
15"	20' Lengths	70	1,400

DIAMATER	UNIT	UNITS PER LOAD	FOOTAGE
ECOF	LO 100 / GOL	DFLO DUAL-V	VALL PIPE:
12"	10' Lengths	s 225	2,250
	20' Lengths	s 120	2,400
15"	10' Lengths	s 155	1,550
	20' Lengths	s 80	1,600
18"	11' Lengths	s 92	1,012
	20' Lengths	s 48	960
24"	11' Lengths	s 57	627
	20' Lengths	s 30	600
30"	11' Lengths	s 33	363
	20' Lengths	s 18	360
36"	11' Lengths	s 22	242
	20' Lengths	s 12	240
42"	11' Lengths	s 16	176
	20' Lengths	s 8	160
48"	11' Lengths	s 11	121
	20' Lengths	s 6	120
60"	11' Lengths	s 7	77
	20' Lengths	s 4	80

NESTING/TELESCOPING: All sizes through 36" will nest in the next larger size. FITTINGS: Many of our fittings and accessories are packed in bags or bundles. For quantity packs, refer to catalog pages.



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The future of dual-wall ...

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- has a safer, trenchless installation
- installs with less labor and equipment
- is plowed through high water tables

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