

Introduction

GOLDFLEX is an innovative new pipe product for the agricultural market. It features an engineered flexible inner liner that provides the flow capacity of a dual wall pipe with the handling and installation efficiency of a single wall pipe. GOLDFLEX is available in 12" and 15" diameters which are packaged in large coils and can be installed using a tile plow with a large diameter boot, thereby eliminating the need for an open trench.

The information presented here details the recommended boot design features, burial depths, and installation techniques, along with additional considerations for installing GOLDFLEX pipe.



Figure 1: GOLDFLEX Pipe

Boot Design Recommendations

Four key components must be considered when choosing the design of a boot to install GOLDFLEX flexible dual wall pipe. These components include the boot width, the bend radius, a shaped bottom, and the cutting plate width. Optimizing these factors will reduce the force and friction induced on the pipe as it moves through the boot and also allow for proper support around the pipe when it is installed.

The width of the inside of the boot shall be approximately **3" wider** than the outside diameter (OD) of the pipe (Figure 2). Therefore, a boot for 12" GOLDFLEX pipe will be 17.5" wide considering the OD of a 12" pipe is approximately 14.5" (Table 1). The excess width will help reduce friction on the pipe as it moves through the boot.

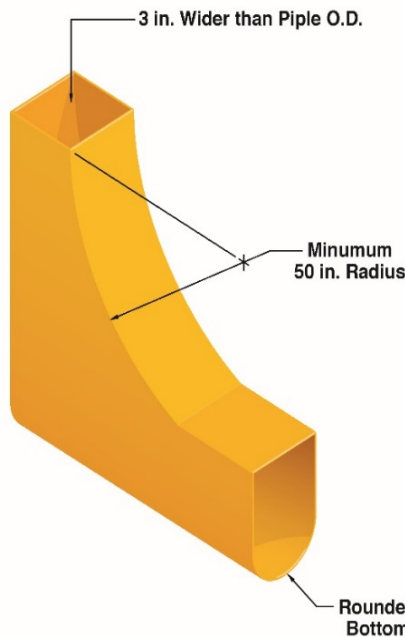


Figure 2: Boot Design Example for GOLDFLEX Pipe

Table 1: GOLDFLEX Pipe and Boot Dimensions

Nominal Pipe ID	Approx. Pipe OD	Recommended Boot Width
12" (300mm)	14.5" (365mm)	17.5" (440mm)
15" (375mm)	17.75" (445mm)	20.75" (520mm)

The boot shall have a minimum **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.

The boot shall have a **rounded bottom** to provide proper support under the installed pipe. The shape of the bottom of the boot should be similar to the OD of the pipe to provide sufficient support.

A final equipment aspect to consider prior to installing GOLDFLEX is the cutting plate on the plow. The recommended cutting plate width shall be roughly **6" wider** than the OD of the pipe. This allows room for the pipe and the boot to be pulled through the trench with ease while leaving enough soil in tact to provide proper support around the pipe.

Burial Depth

The maximum burial depth is significantly influenced by the quality of backfill and the compaction level of the soil around the pipe. GOLDFLEX, along with all plastic 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 pipe installed in native soil by a tile plow is **8 feet**. Reference the *Prinsco Agricultural Installation Guide* for additional information.



Installation Recommendations

- Special care shall be taken when stringing, or laying out, GOLDFLEX pipe. Since it is heavier than single wall pipe of the same size, GOLDFLEX should be placed as close to the installation location as possible when stringing. A shorter distance between the plow and the strung pipe will ensure that the pipe is not stretched as it is initially pulled through the boot.
- To aid with installation, a guide should be used to help direct the pipe from the ground into the boot and avoid obstacles. A method that has shown to be successful is suspending a guide from the bucket of an excavator, or similar equipment, that can track along with the tile plow during installation (Figure 3). If a guide is not present, someone should walk with the tile plow to support the pipe and form an arch to help guide the pipe to the boot. The pipe should not be subjected to a radius tighter than the minimum **50" bend radius** of the boot. This creates a smooth transition from pipe strung outside of the trench to the fully installed GOLDFLEX pipe.
- Split couplers and a generous amount of tile tape should be used when connecting two adjoining ends of GOLDFLEX pipe coils to ensure they do not pull apart during installation.

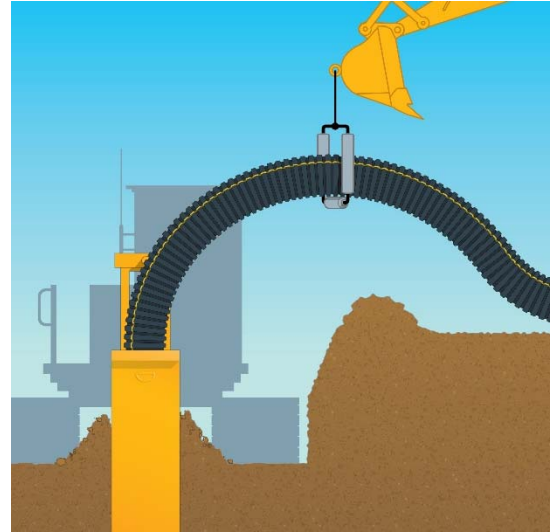


Figure 3: GOLDFLEX Support Guide

Additional Considerations

Below are some additional considerations that should be made when installing GOLDFLEX pipe:

- An overcut, or sub-cut, may be required when installing GOLDFLEX at deeper burial depths (Figure 4). Overcuts decrease the amount of soil required to be moved by the plow. Typically, GOLDFLEX will need to be installed with an overcut when the depth to the flow line of the pipe **exceeds 4 feet**. For example, if this depth is 6 feet, then an overcut of 2 feet or more may be required. The depth and use of an overcut will vary based on soil type, moisture content, and ground temperature.
- Special care shall be taken when water table heights are at or near the ground surface. Soil strength and support around the pipe can be greatly reduced during high water events, thus reducing the load-carrying strength of the installed pipe.
- GOLDFLEX dual wall pipe does not have a significant strength advantage over single wall pipe. Therefore, the same care as installing single wall pipe to deep burial depths must be taken. Refer to the *Prinsco Agricultural Installation Guide* for guidance for deeper burial depths.

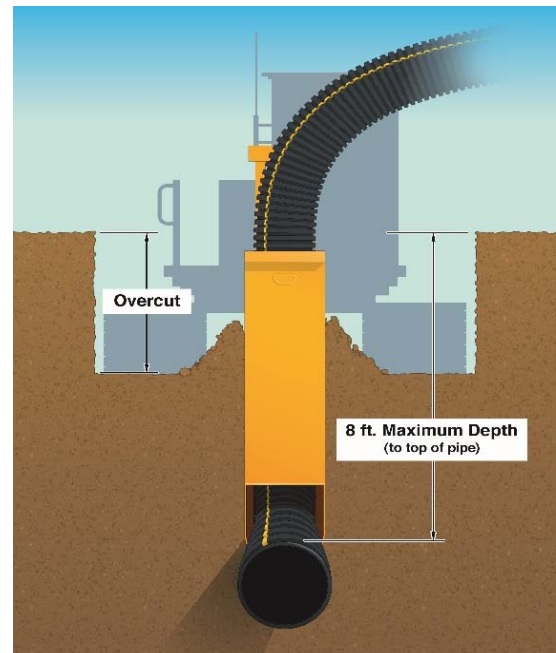


Figure 4: GOLDFLEX Maximum Burial Depth and Overcut