

expertise and materials to meet many requests.

END CAPS

End caps may be required to end a pipe run at a location other than the air plenum wall. ADS offers a split end cap, which wraps and tightens around the exterior corrugations of the pipe (Figure 13). This part can be provided with a solid end, allowing the installer to drill the desired perforation size and pattern, or ADS can perforate before shipment to a pattern provided by the customer. A second option is a fabricated (welded) end cap that uses a bell to slide over a plain end section of pipe (Figure 14). This cap does not lock or engage the corrugations and is easier to remove than the split end cap. Table 3 provides the product codes for ordering the end caps.



Figure 13: Split End Cap



Figure 14: Fabricated End Cap

Table 3: End Cap Product Codes

Diameter (mm)	Split End Cap	Fabricated End Cap
18" (450 mm)	1867AA	1801AN65B
21" (525 mm)	NA	Custom
24" (600 mm)	2467AA	2 AN65B

INSTALLATION & STORAGE CONSIDERATIONS

POTATO PILE HEIGHT & PIPE DEFLECTION

Potato crop and storage practices vary from owner to owner and region to region so establishing definitive installation limits and product performance predictions can be difficult. However, previous installations of ADS pipe products helps to provide owners with reasonable expectations for use in their particular installation.

The performance and success of flexible pipe is based upon the pipe deflecting to “shed” some of the load being applied from the potato pile. Deflection is a behavior unique to flexible pipe products (metal and plastic) and occurs when a circular pipe changes to an elliptical shape when a load is applied. Pipe deflection itself does not constitute failure of the pipe, but should be managed to remain below 15% through observations during its use and be accounted for appropriately in air flow calculations. Deflections in excess of 15% can be an indicator of future issues to performance and should be evaluated for pipe integrity. The size and species of the potato will impact how much the pipe will deflect under the pile; the larger the potato, the more potential there is for pipe deflection. Other environmental conditions such as humidity and temperature will also impact pipe performance.

The information presented in Table 4 is based upon actual installations and inspection of the pipe during

Table 4: Estimated Pipe Deflection Based on Potato Pile Height

Potato Pile Height - feet (m)	Pipe Deflection (%)
10' (3 m)	6%
15' (4.6 m)	10%
20' (6 m)	12%

Note: Deflection based upon initial pipe deflection at 0%. Deflections noted in Table 4 are cumulative if an already deflected pipe is installed at the beginning of the season and must be accounted for appropriately.



one season of storage (approximately 5 months). One of these installations is depicted in Figure 15.

It is important to note ADS pipe products will deflect when installed and is expected for any installation. Unlike traditional metal products though, plastic pipe will not remain in the same deflected state when uninstalled. When properly stored for the next season, a deflected pipe is expected to “rebound” back to a near circular shape. Storage recommendations and best practices for re-installing pipe for subsequent seasons are discussed in later sections.

END WALL CONNECTIONS

A common aeration system layout will orient the pipe runs to connect the two side walls of the facility, typically 50-80 feet (15-24.4 m) in width. The sides of the storage facility are the air plenums where the air temperature and humidity is controlled and distributed to the pipe laterals. The air plenum walls are most commonly poured concrete and holes

Figure 15: SaniTite HP Installation



are provided where each pipe run will connect in order to aerate the potato pile. The outside diameter of ADS pipe is comparable to other corrugated pipe products and a reasonably snug fit is provided by simply butting/inserting the pipe into the existing hole (Figure 16). Alternatively, an adapter (thin-walled tube welded to ADS pipe) can be provided for installations where a smaller diameter is desired or if the pipe needs to protrude further through the wall (Figure 17).

PIPE STORAGE

While the pipe is in use it is expected, and necessary for proper performance, for the pipe to deflect over time. As the potato pile is picked for processing and the pipe laterals are exposed, the pipe will need to be removed from the floor to access the remainder of the pile. One of the many benefits of ADS pipe is the ability for the pipe to “rebound” after deflecting and return to a near-circular shape with no more effort than proper storage, which is placing the pipe vertically, on-end when it is not in use. When stored in this manner, the pipe is expected to reduce deflection by 90% or more (e.g. a 10% deflected pipe will reduce to approximately 1% deflection after storage). While horizontal storage and stacking of the pipe can be done, vertical orientation provides the greatest potential for the pipe to rebound close to its original shape and will help extend its viable use over multiple storage seasons.

PIPE RE-USE FOR MULTIPLE SEASONS

Vertical pipe storage, as noted in the previous section, provides the best opportunity for the pipe to move back to a near-circular shape. Planned orientation of the pipe when re-installed for another season can greatly benefit and extend the working life of the pipe. Since any flexible pipe will deflect, rotating the pipe 90°, such that the horizontal deflection would become vertical deflection, will help “re-round” the pipe with no more effort than simply installing the pipe as would be done anyway (Fig. 19).

ADS pipe comes with a green stripe down the length of the pipe that will not disappear or wear away with time and this feature can be used to quickly orient the pipe season-to-season. As a rule of thumb, ADS encourages installers to orient the pipe with the green stripe **UP** on **ODD** years and to orient the green stripe to the **SIDE** on **EVEN** years (i.e. install green stripe up in 2015 and rotate the stripe to the side for re-installation in 2016). Alternatively, an orientation schedule is available for posting within the storage facility for quick reference to any installer season-to-season.

ADS warrants the product to be free from defects in materials and workmanship. The installation practices and recommendations provided herein are for general guidance only.



Figure 16: End Wall Connection with Pipe



Figure 17: End Wall Connection with Adapter



Figure 18: Pipe Storage



Figure 19: Pipe Rotation for Re-Installation (Deflection exaggerated for illustration)



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