

7. PIPE CONDUITS

(a) Materials

Smooth plastic pipe, both PVC and PE, have many advantages in soil and water conservation applications. Among these are light weight, ability to solvent weld, smooth interior surface with resulting low "n" values, resistance to corrosion and chemical attack, and relative ease of cutting and fitting. As with all products, there are some disadvantages. Among these are its flexible nature (requires good lateral support), reduced load bearing capabilities, problems in connecting to rigid material, and the proliferation of sizes to match diameters with other products.

The limitations and capabilities of plastic pipe must be recognized to best utilize its advantages and control the disadvantages.

Following are some items to be kept in mind:

- (1) Design must be on the "conservative" side and pressures cannot exceed those shown including allowances for surge and/or water hammer.

- (2) Depth of fill over a pipe is limited by the S.D.R. and placement control.
- (3) Ultraviolet degradation and some chemicals will cause rapid deterioration.
- (4) Plastic pipe must be protected against shear forces caused by earth loads at any point where it connects to a rigid material.
- (5) As an aid to construction and inspection, personnel must read the imprint on the plastic pipe carefully to:
 - a. Determine that the pipe meets an approved standard (ASTM, AWWA, ASCE, or SCS).
 - b. Determine that the pipe meets the complete standard rather than only a part of a standard, such as materials, and is the SDR or PSI required.
- (6) Smooth plastic pipe may be used as an outlet where a proper animal guard is installed, the wall thickness is adequate for livestock and other traffic, and burning of ditch banks is not likely. Otherwise, a CMP outlet is preferred.