

# SOUTHEAST CULVERT HDPE

## HDPE ADVANTAGE

High Density Polyethylene pipe is the simple solution for today's drainage challenge. HDPE has a corrugated exterior for added strength and a smooth interior for maximum flow capacity. Plastic pipe provides the highest strength to weight ratio to be found among drainage products. This advantage is maximized by combining the pipe stiffness with a good soil envelope. In addition to its strength characteristics, HDPE is also a chemically inert material. This aids the pipe in resistance to corrosion and abrasion that affect drainage products on any construction site. HDPE is effective in a PH range from 2 to 14. Hence, many engineers and local specifying agencies regard HDPE as an advantageous choice for small diameter drainage solutions. Southeast Culvert manufactures 12" - 60" HDPE. All pipes are produced with bell and spigot couplers. Combined with Maxflow spiral rib metal pipe, with a mannings "n" of .012, for large diameter pipe, Southeast Culvert can supply all drainage needs.

## HDPE DURABILITY

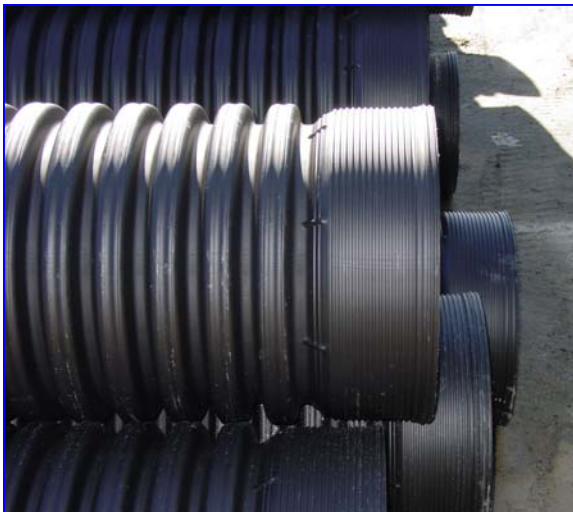
### MANNINGS "n"

HDPE is manufactured with a smooth interior to meet the most demanding hydraulic requirements. Tests indicate that HDPE typically has a Mannings "n" roughness coefficient of .010 - .011. Plastic pipe is normally designed using a Mannings "n" of .012, which is hydraulically equivalent to RCP and spiral rib metal pipe. It is an ideal choice for storm sewers and culverts where flow is a concern.



### CORROSION AND ABRASION

HDPE is an inert material, therefore it can be used in environments that would be considered aggressive to other products. HDPE is extremely resilient against corrosion and chemical attack. Abrasion is force that causes problems in many storm drain environments. Bedloads carried at high velocities destroy the inverts of most pipe products with time. HDPE has shown to be more resistant to abrasive environments than other materials. The durability of HDPE pipe make it the most economical material for small diameter drainage needs.



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## APPLICABLE SPECIFICATIONS

DESIGNATION	SPECIFICATION DESCRIPTION
AASHTO M252	Specification for Corrugated Polyethylene Pipe (3" - 10")
AASHTO M294	Specification for Corrugated Polyethylene Pipe (12" - 60")
AASHTO SECTION 18	Soil/Thermoplastic Pipe Interaction Systems
AASHTO SECTION 30	Thermoplastic Pipe
ASTM F477	Specification for Elastomeric Gaskets for Joining Plastic Pipe
ASTM D2321	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and other Gravity Flow Applications
ASTM D3212	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM D3350	Specification for Polyethylene Plastic Pipe and Fittings Material



### HANDLING WEIGHTS

DIAMETER	LBS / FT
12"	3.3
15"	5
18"	6.6
24"	11.5
30"	16.3
36"	22.2
42"	28.1
48"	35.7
60"	59.5

### BACKFILL REQUIREMENTS

HDPE, like metal pipe, is a flexible material. Therefore it depends on the surrounding soil envelope for its strength. Material used for backfill should be a well-graded granular material. Bedding and backfill material should be well compacted in 6 inch layers around the haunches and above the pipe to the recommended minimum cover. Each lift of backfill should be compacted to a minimum 90% of standard density, determined by ASTM D698 or AASHTO T-99. Trench width varies according to pipe size. For smaller diameters the trench is often several times larger than the pipe. For larger pipe, the trench width should be approximately the diameter plus 3 feet. Widths should provide adequate space for compaction. It is recommended that the minimum compacted structural backfill over the pipe be 1 foot. Southeast Culvert recommends that HDPE be installed in accordance with ASTM D2321.

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