

COMPARATIVE ANALYSIS

COMPARATIVE ANALYSIS OF PIPE MATERIALS

	HANCOR HIGH DENSITY POLYETHYLENE PIPE (DUAL WALL)	REINFORCED CONCRETE PIPE	CORRUGATED METAL PIPE	PVC PIPE
SPECIFICATIONS	<ul style="list-style-type: none"> • ASTM F2306 • ASTM F405 • ASTM F667 • AASHTO M252 • AASHTO M294 • CSA B 182.6 • ASTM F2648 	<ul style="list-style-type: none"> • ASTM C76 • AASHTO M17 	<ul style="list-style-type: none"> • ASTM A760 • AASHTO M36 	<ul style="list-style-type: none"> • ASTM F794 • ASTM F949 • ASTM D3034 • ASTM F794 • ASTM F679 • ASTM D1785 • AASHTO M304
JOINTS	<ul style="list-style-type: none"> • Watertight and soil-tight capabilities • Fewer joints than concrete for equivalent lengths 	<ul style="list-style-type: none"> • Gaskets available • May require steel joint rings for watertightness 	<ul style="list-style-type: none"> • External bolted bands required 	<ul style="list-style-type: none"> • Joints are either bell/spigot, gasketed integral bell or sleeve
DURABILITY	<ul style="list-style-type: none"> • Excellent chemical and abrasion resistance 	<ul style="list-style-type: none"> • HDPE or PVC linings used to enhance service life, and/or reduce abrasion • Susceptible freeze and thaw cracking 	<ul style="list-style-type: none"> • Special coatings and/or increased steel thickness can be used to enhance service life • Susceptible to corrosion from road salts and chemicals 	<ul style="list-style-type: none"> • Less abrasion resistant than HDPE • Reduced impact resistance in cold temperatures • Fillers reduce impact resistance
HYDRAULICS	<ul style="list-style-type: none"> • Typical Manning's "n" design values of .012 for smooth interior product 	<ul style="list-style-type: none"> • Typical Manning's "n" design values of .013 	<ul style="list-style-type: none"> • Typical Manning's "n" design values of .024 	<ul style="list-style-type: none"> • Typical Manning's "n" design value of 0.009
STRUCTURAL	<ul style="list-style-type: none"> • Capable of traffic loads (HS-25) at 1' (300mm) of min. cover for 4"-48" (100-1200mm) pipe and 2.0' (600mm) of min. cover for 60" (1500mm) pipe 	<ul style="list-style-type: none"> • Standard strength classes available • Spigot reinforcing may be required to prevent joint shear 	<ul style="list-style-type: none"> • Standard gauge thickness available • Heavy gauges necessary in corrosive elements 	<ul style="list-style-type: none"> • Pipe stiffness and structural performance varies • Fillers reduce tensile strength
DIAMETERS	<ul style="list-style-type: none"> • 4" - 60" (100-1500mm) 	<ul style="list-style-type: none"> • 8" - 144" (200-3600mm) (Some smaller diameters have no reinforcement) 	<ul style="list-style-type: none"> • 4" - 144" (100-3600mm) 	<ul style="list-style-type: none"> • 1/8" - 48" (3-1200mm)

INFORMATION PROVIDED BY THE CORRUGATED POLYETHYLENE PIPE ASSOCIATION (CPPA), A DIVISION OF THE PLASTICS PIPE INSTITUTE (PPI).

NOTE: FOR MORE DETAILS ON SPECIFIC DESIGN AND/OR INSTALLATION CRITERIA, REFER TO THE APPROPRIATE INDUSTRY GUIDELINES.