



# Bio-Line™ High Density Polyethylene Pipe for Methane Capture and Transmission

United Poly Systems Bio-Line of HDPE pipe is used primarily for capture and transmission of methane produced on farms and bio-gas produced in landfills. Bio-Line is identified by a solid green color or a green stripe which helps protect the integrity of the system by identifying the pipe. Bio-Line can be shipped on coils and reels or as sticks.

Bio-Line is part of United Poly Systems Earth-Line™ suite of products and is ideal for many renewable-related pipeline applications. United Poly Systems is committed to using sustainable material for a sustainable future.

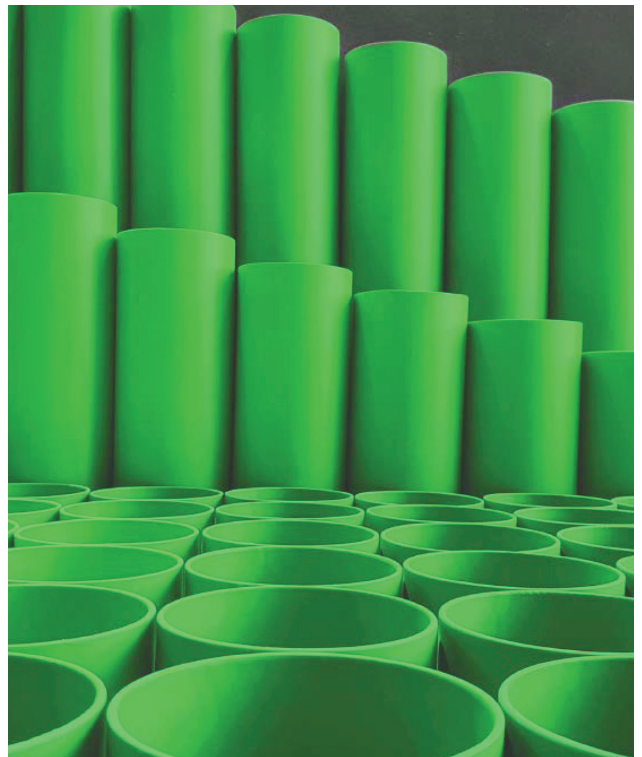
- No corrosion when compared to copper pipe
- HDPE fusion joints are stronger than solder joints
- Lower cost Longer life span, 50 to 100 years
- Flexibility of HDPE pipe, compared to metal pipe, aids in installation
- More installation methods available for HDPE (open cut, directional drilling) compared to copper pipe
- Easier shipping, HDPE can be shipped on coils or reels or as straight sticks

## Product Information

Bio-Line can be installed in existing conduit or via plow, direct burial or HDD (horizontal directional drilling) methods.

The product is typically a solid green color and can be stiped for additional identification.

Bio-Line is manufactured in IPS (iron pipe size) from 2- to 26-inch diameter and DIPS (ductile iron pipe size) from 4- to 26-inch diameter.



The material requirements for Bio-Line meets or exceeds ASTM Standard D 3350

“Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.” ASTM D 3350 defines physical properties of HDPE materials into ranges, or cell classes, so that each property can be defined within a range that is appropriate for the application.



## Print Line Information

Bio-Line is sequentially marked and identified along its outer length in contrasting color.

The print interval is every 2 ft and includes the following:

- MANUFACTURER'S NAME: United Poly Systems PRODUCT SIZE/SDR
- PRODUCTION CODE: Date, Location, Period
- REQUIRED MATERIAL SPECIFICATION
- LENGTH OF CONDUIT (in feet)

Custom print lines are available and may include customer name, project name and application.

## PE4710 Typical Physical Properties

PROPERTY	TYPICAL VALUE	UNITS	TEST METHOD
Density with minimum 2% carbon black	0.960	g / cc	ASTM D 792 or 1 505
High Load Melt Index	8.5	g / 10 minutes	ASTM D 1238
Melt Index	0.08	g / 10 minutes	ASTM D 1238
Flexural Modulus	160,000	psi	ASTM D 790
Tensile Strength @ yield (2 in / min)	3600	psi	ASTM D 638
Tensile Elongation @ Break	740%		ASTM D 638
Thermal expansion	1.0 x 10 <sup>-4</sup>	in / in / 0	ASTM D 696
HDB 73.4°F (23°C)	1600	psi	ASTM D 2837
HDB 140°F (60°C)	1000	psi	ASTM D 2837
PENT	> 500	hr	ASTM F1473
Brittleness Temperature	< -103°F (-75C)	°F	ASTM D 746
Cell Classification	445574C (black only)		ASTM D 3350

*These are nominal values and used as guidelines only.*

*This is not a product specification and does not indicate minimum or maximum operating values.*