

# Why Use PolyPipe®?

PolyPipe® offers a complete range of extra high molecular weight (EHMW), high-density polyethylene (HDPE) pipe. We are known for state-of-the-art facilities, and a team of people dedicated to the industry and to the customers we serve.

PolyPipe® is one of the largest manufacturers of pressure-rated polyethylene pipe. PolyPipe® uses only select resins that meet our demanding standard of excellence and quality. As a result, you can count on the performance of any PolyPipe® system as specified.

PolyPipe® is strategically positioned to be your single source provider of polyethylene pipeline assistance. With extrusion facilities and a national network of key distributors covering all regions of the United States, Mexico and Canada, PolyPipe® can be your pipeline to the world. Our products are in service all over North and South America, as well as Europe, the Middle East and Southeast Asia.

## *Understanding your objective is our first priority.*

Our ability to match specific products and systems to a wide range of client needs has been recognized as outstanding in the industry.

We produce millions of feet of polyethylene pipe, year in... year out, for a variety of customers all over the globe.

- PolyPipe® has six plant locations throughout North America for the best possible geographic location to meet your needs.
- PolyPipe® is nimble enough to satisfy your most demanding requirements. Our customer service attitude is recognized as “best in class”.
- PolyPipe® is an active member of the Plastics Pipe Institute (PPI). We also sit or chair many associations and standard committee groups.

- Feel free to contact our Technical Services Department, staffed by licensed Professional Engineers who are always ready to address your questions. (940) 668-4419

## Major Industries Served

- Natural Gas Distribution
- Pipeline Rehabilitation
- Gas Gathering
- Water & Sewer
- Oilfield Applications
- Nuclear
- Landfill
- Power Plants
- Industrial & Mining
- Chemical
- Hazardous & Solid Waste
- Underground Fire Protection (FM)

## Quality Assurance in Product Design and Materials

We define quality as an inherent value that results in superior performance. PolyPipe® is the engineering leader in the field, offering knowledgeable, enthusiastic technical support, exacting laboratory procedures and testing methods, and a constant quest for manufacturing excellence. Quality leadership also demands innovation and improving services that are always customer-based.

PolyPipe® is continually striving to meet the demands of the market today. Our qualification as an ISO 9001 company has given us great confidence in our quality system to ensure quality products are manufactured on a consistent basis. It is the policy of PolyPipe® to achieve total quality system performance by understanding and meeting its customer requirements without error, on time, every time.

At PolyPipe®, quality throughout the manufacturing process is an inherent value that assures the highest performance. Our manufacturing facilities start with only superior grade, polyethylene resins that have been specifically formulated for long-term integrity and performance. Computer controlled extrusion techniques are utilized in the manufacture of our pipe to ensure quality.

Contact PolyPipe® and ask us about the specific advantages we may offer to your unique requirements in your particular industry. We can assure you PolyPipe® offers the best in pipe and services.



# PolyPipe® GB30 PE3408/PE3608 Pipe

Extra High Molecular Weight (EHMW) High Density Polyethylene for use in oilfield and gas gathering applications.

Typical Printline: 4" IPS SDR 7 – POLYPIPE® GB30 GAS – PE3408/PE3608 – CDE – ASTM D2513 – API 15LE<sup>(1)</sup> – MANUFACTURING CODE

<sup>(1)</sup> API 15LE is available upon request.

TYPICAL PHYSICAL PROPERTIES			
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.946 gm/cc	--
Density, Black	D1505	0.955 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.07 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	8.5 gm/10 min.	--
Tensile Strength @ Yield	D638	22.1 MPa	3,200 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	938 MPa	136,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	>10,000 hrs.	>10,000 hrs.
PENT	F1473	>100 hrs.	>100 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.37 KJ/m	7 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
CELL CLASSIFICATION:	D3350	345464C	Grade PE36
MATERIAL CLASSIFICATION:	D1248	Type III	Class C
		Category 5	
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
<i>(As listed in PPI TR-4)</i>		5.5 MPa @ 60°C	800 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		5.5 MPa @ 23°C	800 psi @ 73.4°F
<i>(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))</i>			

\*Nominal values are intended to be guides only, and not as specification limit.

\*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.

# PolyPipe® GB50 PE3408/PE4710/PE100 Pipe

Extra High Molecular Weight (EHMW) High Density Polyethylene for use in oilfield and gas gathering applications.

Typical Printline: 4" IPS SDR 7 – POLYPIPE® GB50 GAS – PE3408/PE4710 – CDE – ASTM D2513 – API 15LE<sup>(1)</sup> – MANUFACTURING CODE

<sup>(1)</sup> API 15LE is available upon request.

TYPICAL PHYSICAL PROPERTIES			
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.949 gm/cc	--
Density, Black	D1505	0.960 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.08 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	7.5 gm/10 min.	--
Tensile Strength @ Yield	D638	24.8 MPa	3,600 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	1,034 MPa	150,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	--	--
PENT	F1473	>500 hrs.	>500 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.42 KJ/m	8 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
CELL CLASSIFICATION:	D3350	445474C 445574C 445576C	PE47 PE47 PE100
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
<i>(As listed in PPI TR-4)</i>		6.9 MPa @ 140°C	1,000 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		6.9 MPa @ 23°C	1,000 psi @ 73.4°F
<i>(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))</i>			

\*Nominal values are intended to be guides only, and not as specification limit.

\*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.

# PolyPipe® EHMW PE3408/PE3608 Pipe

Extra High Molecular Weight (EHMW) High Density Polyethylene for use in industrial applications such as underground fire mains, mining, landfill, water reclamation or sewer.

Typical Printline: 12" IPS SDR 9 – POLYPIPE® EHMW – PE3408/PE3608 –ASTM F714 C3 -- MANUFACTURING CODE

TYPICAL PHYSICAL PROPERTIES			
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.946 gm/cc	--
Density, Black	D1505	0.955 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.07 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	8.5 gm/10 min.	--
Tensile Strength @ Yield	D638	22.1 MPa	3,200 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	938 MPa	136,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	>10,000 hrs.	>10,000 hrs.
PENT	F1473	>100 hrs.	>100 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.37 KJ/m	7 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
CELL CLASSIFICATION:	D3350	345464C	Grade PE36
MATERIAL CLASSIFICATION:	D1248	Type III	Class C
		Category 5	
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
<i>(As listed in PPI TR-4)</i>		5.5 MPa @ 60°C	800 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		5.5 MPa @ 23°C	800 psi @ 73.4°F
<i>(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))</i>			

\*Nominal values are intended to be guides only, and not as specification limit.

\*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.

# PolyPipe® Potable Water (PW) PE3408/PE3608 Pipe

Extra High Molecular Weight High Density Polyethylene for potable water service, which is tested and certified by the National Sanitation Foundation (NSF), and manufactured in accordance with AWWA.

Typical Printline: 12" IPS SDR 9 – POLYPIPE® PW – PE3408/PE3608 – AWWA C906-07 – PC200 – ASTM F714 C3 --  
MANUFACTURING CODE – NSF-61

TYPICAL PHYSICAL PROPERTIES			
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.946 gm/cc	--
Density, Black	D1505	0.955 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.07 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	8.5 gm/10 min.	--
Tensile Strength @ Yield	D638	22.1 MPa	3,200 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	938 MPa	136,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	>10,000 hrs.	>10,000 hrs.
PENT	F1473	>100 hrs.	>100 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.37 KJ/m	7 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
CELL CLASSIFICATION:	D3350	345464C	Grade PE36
MATERIAL CLASSIFICATION:	D1248	Type III	Class C
		Category 5	
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
<i>(As listed in PPI TR-4)</i>		5.5 MPa @ 60°C	800 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		5.5 MPa @ 23°C	800 psi @ 73.4°F
<i>(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))</i>			

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# PolyPipe® LightView™ PE3408/PE3608 HDPE Pipe

Extra High Molecular Weight High Density Polyethylene manufactured in natural or gray. Formulated to allow inspection of the pipe interior via conventional video monitoring techniques.

- Provides optimal background color for TV inspection.
- Provides alternate color choice to HDPE black pipe.
- Suitable for pressure applications.
- Flexibility of HDPE is perfectly suited for slipline applications.
- Used for 25+ years for direct burial applications.
- Heat fusion joining provides leakproof, water-tight non-wedging joints.
- Translucent feature allows TV location of lateral taps.
- Corrosion resistance provides long-term, trouble-free service.
- 40' - 50' joints available to reduce installation cost.
- UV stabilized for outdoor storage for a period of two (2) years from the date of manufacture.
- Contact a Customer Service Representative for available sizes and Dimension Ratios (DR).
- Manufactured in accordance with ASTM D3035 or F714.

## TYPICAL PHYSICAL PROPERTIES

PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.947 gm/cc	--
Density, Gray	D1505	0.949 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.07 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	8.5 gm/10 min.	--
Tensile Strength @ Yield	D638	22.1 MPa	3,200 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	938 MPa	136,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	>10,000 hrs.	>10,000 hrs.
PENT	F1473	>100 hrs.	>100 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.37 KJ/m	7 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
Modulus of Elasticity (long term)		--	30,000 psi
Modulus of Elasticity (short term)		--	125,000 psi
CELL CLASSIFICATION:	D3350	345464D (Natural) 345464E (Gray)	Grade PE36
MATERIAL CLASSIFICATION:	ASTM	PE3608	
HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F

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\*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.



# PolyPipe® EHMW Plus™ PE3408/PE4710/PE100 Pipe

Extra High Molecular Weight Plus™ (EHMW Plus) High Density Polyethylene is designed for use in applications such as mining, landfill, dredge, gas gathering, water reclamation or sewer. EHMW Plus™ is an ideal alternative to EHMW PE3608 applications requiring additional performance from abrasion resistance, higher-pressure requirements or elevated temperatures as the single design need or in combination of design concerns. PolyPipe EHMW Plus is manufactured in accordance with ASTM F714 using NSF approved materials which are suitable for potable water applications.

Typical Printline: 12" IPS SDR 9 – POLYPIPE® EHMW PLUS – PE3408/PE4710 –ASTM F714 C3 -- MANUFACTURING CODE

TYPICAL PHYSICAL PROPERTIES			
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.949 gm/cc	--
Density, Black	D1505	0.960 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.08 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	7.5 gm/10 min.	--
Tensile Strength @ Yield	D638	24.8 MPa	3,600 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	1,034 MPa	150,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	--	--
PENT	F1473	>500 hrs.	>500 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.42 KJ/m	8 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
CELL CLASSIFICATION:	D3350	445474C 445574C 445576C	PE47 PE47 PE100
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
<i>(As listed in PPI TR-4)</i>		6.9 MPa @ 140°C	1,000 psi @ 140°F
PPI HYDROSTATIC DESIGN STRESS (HDS)		6.9 MPa @ 23°C	1,000 psi @ 73.4°F
<i>(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))</i>			

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\*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.

# PolyPipe® PW HDPE PE3608 Factory Mutual (FM) Approved Pipe

Extra High Molecular Weight High (EHMW) Density Polyethylene for underground fire mains and loops, produced at a facility inspected and approved by the FM Research Corporation.

## PolyPipe® FM Pipe Advantages

FM Approved HDPE piping from PolyPipe® offers advantages that other piping products cannot deliver:

- Superior design life for many years of trouble-free service.
- Higher flow coefficients due to the smooth inner wall surface of the pipe.
- Outstanding chemical and abrasion resistance assures long-term performance.
- Heat-fused, fully restrained joints eliminate leaks.
- Proven in the field, HDPE piping materials will deliver excellent underground fire water service with a surge tolerance not found in other piping materials.



## FM Approved Pipe Dimensions

Nominal IPS Size, inches	OD, inches	Class 150			Class 200			Class 267*		
		Min. Wall, inches	Avg. ID, inches	Weight, lb/ft	Min. Wall, inches	Avg. ID, inches	Weight, lb/ft	Min. Wall, inches	Avg. ID, inches	Weight, lb/ft
4	4.500	0.409	3.63	2.29	0.500	3.44	2.737	0.643	3.14	3.384
6	6.625	0.602	5.35	4.971	0.736	5.06	5.932	0.946	4.62	7.336
8	8.625	0.784	6.96	8.425	0.958	6.59	10.054	1.232	6.01	12.433
10	10.750	0.977	8.68	13.089	1.194	8.22	15.618	1.536	7.49	19.314
12	12.750	1.159	10.29	18.412	1.417	9.75	21.970	1.821	8.89	27.170
14	14.000	1.273	11.30	22.199	1.556	10.70	26.489	2.000	9.76	32.758
16	16.000	1.455	12.92	28.994	1.778	12.23	34.598	2.286	11.15	42.786
18	18.000	1.636	14.53	36.696	2.000	13.76	43.788	2.571	12.55	54.151
20	20.000	1.818	16.15	45.304	2.222	15.29	54.059	2.857	13.94	66.853
22	22.000	2.000	17.76	54.818	2.445	16.82	65.412	---	---	---
24	24.000	2.182	19.37	65.237	2.667	18.35	77.845	---	---	---
30*	30.000	2.727	24.22	101.934	3.333	22.93	121.633	---	---	---
32*	32.000	2.909	25.83	115.978	3.556	24.60	138.391	---	---	---
34*	34.000	3.091	27.57	130.928	3.778	26.14	156.231	---	---	---
36*	36.000	3.273	29.06	146.784	4.000	27.52	175.152	---	---	---

- NOTES:
- PolyPipe® PW FM Approved Pipe is manufactured in accordance with AWWA C-906 with NSF-61 approved resins and is tested and certified by Factory Mutual for use in underground firewater service.
  - Pressures are based on water at 23°C (73.4°F) and are determined per AWWA C-906.
  - Stalks lengths available in 40' or 50' lengths.
  - The above weights are calculated in accordance with the Plastics Pipe Institute (PPI) TR-7, using a value of 0.955 for density.
  - Available with permanent red stripe upon request.
  - \*Available soon.



# PolyPipe® PW FM Approved Pipe

Typical Printline: 12" IPS SDR 9 – POLYPIPE® PW – PE3408/PE3608 – AWWA C906-99 – PC200 – ASTM F714 C3 --  
MANUFACTURING CODE – NSF-61 -- <FM>

TYPICAL PHYSICAL PROPERTIES			
PROPERTY	ASTM TEST METHOD	*NOMINAL VALUES	
		SI UNITS	ENGLISH UNITS
Density, Natural	D1505	0.946 gm/cc	--
Density, Black	D1505	0.955 gm/cc	--
Melt Index (190°C/2.16 kg)	D1238	0.07 gm/10 min.	--
Flow Rate (190°C/21.6 kg)	D1238	8.5 gm/10 min.	--
Tensile Strength @ Yield	D638	22.1 MPa	3,200 psi
Ultimate Elongation	D638	>800%	>800%
Flexural Modulus	D790	938 MPa	136,000 psi
2% Secant			
Environmental Stress Crack Resistance (ESCR)			
F <sub>0</sub> , Condition C	D1693	>10,000 hrs.	>10,000 hrs.
PENT	F1473	>100 hrs.	>100 hrs.
Brittleness Temperature	D746	<-117°C	<-180°F
Hardness, Shore D	D2240	64	64
Vicat Softening Temperature	D1525	124°C	255°F
Izod Impact Strength (Notched)	D256	0.37 KJ/m	7 ft – lb <sub>f</sub> /in
Volume Resistivity	D991	>10 <sup>15</sup> ohm-cm	--
Thermal Expansion Coefficient		2x10 <sup>-4</sup> cm/cm/°C	1.0x10 <sup>-4</sup> in/in/°F
CELL CLASSIFICATION:	D3350	345464C	Grade PE36
MATERIAL CLASSIFICATION:	D1248	Type III Category 5	Class C
PPI HYDROSTATIC DESIGN BASIS (HDB)	D2837	11.0 MPa @ 23°C	1,600 psi @ 73.4°F
(As listed in PPI TR-4)		5.5 MPa @ 60°C	800 psi @ 140°F
PPI Hydrostatic Design Stress (HDS)			800 psi @ 73.4°F
(As established by the Hydrostatic Stress Board (HSB) of the Plastics Pipe Institute (PPI))			

\*Nominal values are intended to be guides only, and not as specification limit.

\*Some of the data listed above was determined from compression molded test specimens; therefore, may deviate from pipe specimens.