



High Density Polyethylene Pipe Supplier

# OuterBanks HDPE Specs

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## HDPE Pipe PE-4710

### Pipe Material Typical Physical Properties

<u>Property</u>	<u>Test Method</u>	<u>Nominal Value</u>
Density (Black)	ASTM D1505	0.959 g/cc
Melt Index	ASTM D1238	0.08 gr/10 min
Flexural Modulus	ASTM D790	150,000 psi
Tensile Strenght (Yield)	ASTM D638	>3,500 psi
Tensile Elongation (Break)	ASTM D638	>500 %
PENT	ASTM F1473	>500 hrs.
HDB @ 73 °F (23 °C)	ASTM D2837	1,600 psi
2% Minimum Carbon Black	ASTM D4218	2.2%
Cell Classification	ASTM D3350	445574C

# HDPE Pipe Dimensions & pressure work

Pressure work		SRD 7		SRD 7.3		SRD 9		SRD 11		SRD 13.5		SRD 15.5		SRD 17		SRD 21		SRD 26		SRD 32.5		SRD 41	
PE 4710	PSI	336		320		252		202		161		139		126		101		81		64		50	
	Kg/cm2	23.5		22.3		17.3		14.3		11.1		10.2		9.2		7.0		5.6		4.5		3.6	
External Diameter		Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter	Min. Wall Thickness	Internal Diameter
Nominal	Real																						
½	0.840					0.093	0.642	0.076	0.678														
¾	1.050					0.117	0.803	0.095	0.848														
1	1.315					0.146	1.005	0.120	1.062														
1¼	1.660					0.184	1.269	0.151	1.340	0.123	1.399	0.107	1.43295	0.098	1.453								
1½	1.900					0.211	1.452	0.173	1.534	0.141	1.602	0.123	1.64013	0.112	1.663								
2	2.375					0.264	1.816	0.216	1.917	0.176	2.002	0.153	2.050	0.140	2.079	0.113	2.135						
2½	2.874					0.319	2.197	0.261	2.320	0.213	2.423	0.185	2.481	0.169	2.516	0.137	2.584	0.111	2.640				
3	3.500	0.500	2.440	0.479	2.484	0.389	2.676	0.318	2.825	0.259	2.950	0.226	3.021	0.206	3.064	0.167	3.147	0.135	3.215	0.108	3.272	0.085	3.319
4	4.500	0.643	3.137	0.616	3.193	0.500	3.440	0.409	3.633	0.333	3.793	0.290	3.885	0.265	3.939	0.214	4.046	0.173	4.133	0.138	4.206	0.110	4.267
6	6.625	0.946	4.619	0.908	4.701	0.736	5.064	0.602	5.348	0.491	5.585	0.427	5.719	0.390	5.799	0.315	5.956	0.255	6.085	0.204	6.193	0.162	6.282
8	8.625	1.232	6.013	1.182	6.120	0.958	6.593	0.784	6.963	0.639	7.271	0.556	7.445	0.507	7.549	0.411	7.754	0.332	7.922	0.265	8.062	0.210	8.179
10	10.750	1.536	7.494	1.473	7.628	1.194	8.218	0.977	8.678	0.796	9.062	0.694	9.280	0.632	9.409	0.512	9.665	0.413	9.873	0.331	10.049	0.262	10.194
12	12.750	1.821	8.889	1.747	9.047	1.417	9.747	1.159	10.293	0.944	10.748	0.823	11.006	0.750	11.160	0.607	11.463	0.490	11.710	0.392	11.918	0.311	12.091
14	14.000	2.000	9.760	1.918	9.934	1.556	10.702	1.273	11.302	1.037	11.801	0.903	12.085	0.824	12.254	0.667	12.587	0.538	12.858	0.431	13.087	0.341	13.276
16	16.000	2.286	11.154	2.192	11.353	1.778	12.231	1.455	12.916	1.185	13.487	1.032	13.812	0.941	14.005	0.762	14.385	0.615	14.695	0.492	14.956	0.390	15.173
18	18.000	2.571	12.549	2.466	12.773	2.000	13.760	1.636	14.531	1.333	15.173	1.161	15.538	1.059	15.755	0.857	16.183	0.692	16.532	0.554	16.826	0.439	17.069
20	20.000	2.857	13.943	2.740	14.192	2.222	15.289	1.818	16.145	1.481	16.859	1.290	17.265	1.176	17.506	0.952	17.981	0.769	18.369	0.615	18.695	0.488	18.966
22	22.000					2.444	16.818	2.000	17.760	1.630	18.545	1.419	18.991	1.294	19.256	1.048	19.779	0.846	20.206	0.677	20.565	0.537	20.862
24	24.000					2.667	18.347	2.182	19.375	1.778	20.231	1.548	20.717	1.412	21.007	1.143	21.577	0.923	22.043	0.738	22.434	0.585	22.759
26	26.000					2.889	19.876	2.364	20.989	1.926	21.917	1.677	22.444	1.529	22.758	1.238	23.375	1.000	23.880	0.800	24.304	0.634	24.656
28	28.000					3.111	21.404	2.545	22.604	2.074	23.603	1.806	24.170	1.647	24.508	1.333	25.173	1.077	25.717	0.862	26.174	0.683	26.552
30	30.000					3.333	22.933	2.727	24.218	2.222	25.289	1.935	25.897	1.765	26.259	1.429	26.971	1.154	27.554	0.923	28.043	0.732	28.449
32	32.000							2.909	25.833	2.370	26.975	2.065	27.623	1.882	28.009	1.524	28.770	1.231	29.391	0.985	29.913	0.780	30.345
34	34.000							3.091	27.447	2.519	28.661	2.194	29.350	2.000	29.760	1.619	30.568	1.308	31.228	1.046	31.782	0.829	32.242
36	36.000							3.273	29.062	2.667	30.347	2.323	31.076	2.118	31.511	1.714	32.366	1.385	33.065	1.108	33.652	0.878	34.139
42	42.000									3.111	35.404	2.710	36.255	2.471	36.762	2.000	37.760	1.615	38.575	1.292	39.260	1.024	39.828
48	48.000									3.556	40.462	3.097	41.435	2.824	42.014	2.286	43.154	1.846	44.086	1.477	44.869	1.171	45.518
54	54.000									4.000	45.520	3.484	46.614	3.176	47.266	2.571	48.549	2.077	49.597	1.662	50.478	1.317	51.208
60	60.000									4.444	50.578	3.871	51.794	3.529	52.518	2.857	53.943	2.308	55.108	1.846	56.086	1.463	56.898
63	63.000									4.667	53.107	4.065	54.383	3.706	55.144	3.000	56.640	2.423	57.863	1.938	58.890	1.537	59.742
65	65.000									4.815	54.793	4.194	56.110	3.824	56.894	3.095	58.438	2.500	59.700	2.000	60.760	1.585	61.639

\* For other diameters, SDR's or resin please ask OuterBanks

Minimum bending radius	
RD	Multiply the diameter per
32.5	40
26	36
21	32
17	26
15.5	24
11<=	20

## Standard joints size

1/2"	250 ml Coils
3/4" - 2 1/2"	150 ml Coils
3"	100 ml Coils
4" - 36"	12 & 14.5 ml joints

## Suggested colors



## Technical Information



### CONTINUUM™ DGDC-2480 BK Bimodal Polyethylene Resin

#### Overview

CONTINUUM™ DGDC-2480 BK Bimodal Polyethylene Resin is produced using UNIPOL™ II process technology. This product may be utilized for pipe applications where long-term hydrostatic strength combined with outstanding resistance to slow crack growth and rapid crack propagation are desired. Suitable applications include natural gas distribution pipes, industrial piping, mining, sewage, and municipal water service lines.

#### Industrial Standards Compliance:

- ASTM D 3350: cell classification
  - Black - PE445574C CC0 (See NOTES A)
- Plastics Pipe Institute (PPI): TR-4
  - Black Pipe - CONTINUUM™ DGDC-2480 BK Bimodal Polyethylene Resin (See NOTES A)
  - ASTM PE4710 pipe grade - 1600psi HDB and 1000psi HDS @ 73°F, and 1000psi HDB @ 140°F
- NSF International: Standard 14 and 61
  - Black Pipe - DGDC-2480 BK (See NOTES A)

Consult the regulations for complete details.

#### NOTES:

(A) The first five numbers of the cell classification are based on natural resin. The last number and letter are based on black resin (natural resin plus 0.5% DFN-0092).

#### Additive

- Antiblock: No
- Slip: No
- Processing Aid: Yes

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density			ASTM D792
Natural	0.949 g/cm <sup>3</sup>	0.949 g/cm <sup>3</sup>	
Black <sup>1</sup>	0.959 g/cm <sup>3</sup>	0.959 g/cm <sup>3</sup>	
Melt Index			ASTM D1238
190°C/2.16 kg	0.080 g/10 min	0.080 g/10 min	
190°C/21.6 kg	8.5 g/10 min	8.5 g/10 min	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength <sup>2</sup> (Yield)	> 3500 psi	> 24.1 MPa	ASTM D638
Tensile Elongation <sup>2</sup> (Break)	> 500 %	> 500 %	ASTM D638
Flexural Modulus <sup>3, 2</sup>	150000 psi	1030 MPa	ASTM D790B
Resistance to Rapid Crack Propagation, Pc			
Calculated, Full Scale : 32°F (0°C) <sup>4</sup>	> 664 psi	> 45.8 bar	ISO 13478
S-4 : 32°F (0°C) <sup>5</sup>	> 174 psi	> 12.0 bar	ISO 13477
Resistance to Rapid Crack Propagation, Tc - S-4 @ 10 bar <sup>5</sup>	< 2 °F	< -17 °C	ISO 13477
Slow Crack Growth PENT <sup>2</sup>	5000 hr	5000 hr	ASTM F1473
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact <sup>2</sup> (73°F (23°C))	9.1 ft-lb/in	490 J/m	ASTM D256A
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Brittleness Temperature <sup>2</sup>	< -103 °F	< -75.0 °C	ASTM D746A

## Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

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<sup>1</sup> Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%).

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<sup>2</sup> Compression molded parts prepared according to ASTM D 4703 Procedure C unless otherwise noted in the test method. Properties will vary with changes in molding conditions and aging time.

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<sup>3</sup> Method I (3 point load)

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<sup>4</sup> Calculated value, determined by the equation in ISO 4437 based on S-4 test data. Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.

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<sup>5</sup> Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Dimension Ratio (SDR) 11.



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