



# BLUE DIAMOND

Industries, LLC



HDPE Innerduct  
and Conduit.



Power and  
Telecom.





Although Blue Diamond Industries was established in 2004, the management team has experience in the engineered construction products industry that spans decades with some of the largest and most reputable manufacturers in the pipe industry. BDI understands its customers in construction and commits to be “easy to do business with,” by supplying quality products at competitive prices, and delivering on time. Once a customer, Blue Diamond continually strives to earn your loyalty.

## HDPE Conduit Plant

Our conduit manufacturing plant in Middlesboro, KY has been producing high density polyethylene (HDPE) pipe for over 25 years. BDI innerduct and conduit provide security and protection to fiber optic and coaxial networks, the communications lifelines.

Cable in Conduit (CIC) protects electric lines for street lighting, signalization projects and “Intelligent Highway Systems.”

BDI conduit is manufactured to the latest ASTM specifications as well as being listed to produce RUS & UL Certified products in diameters ranging from 1/2” through 6” diameter in virtually every color and striping identification system imaginable. BDI is agile and customer focused. By being able to change product styles and respond to requirements quickly, BDI gives each customer flexibility and dependable service.



## HDPE Geothermal Pressure Pipe

Geothermal exchange is a clean energy method of heating and cooling commercial and residential buildings. The technology is proven and has been in use for decades. In simplest terms, HDPE (High Density Polyethylene) pipe is buried in the ground, allowing heat transfer between the fluid in the pipe and the earth. The fluid in the piping is warmed in the winter and cooled in the summer. The system consists of buried HDPE pipe, a heat pump, and air distribution system.

The buried piping heat exchanger is a key component of the geothermal system. Blue Diamond Geothermal Pressure Pipe is manufactured from PE 3408/3608 resin listed in PPI(Plastics Pipe Institute) Standard TR 4 and meets the requirements of IGSHPA (the International Ground Source Heat Pump Association). Blue Diamond is also certified to produce PE 4710 piping, which has a higher Hydrostatic Design Stress and higher environmental stress crack rating. Pipe manufactured from PE 4710 resin will have a higher pressure rating for the same SDR wall thickness compared to 3408/3608 resin. Contact the BDI technical staff for further information. BDI PE 4710 is listed in PPI Standard TR 4.



### IGSHPA recommends HDPE pipe for its superior properties.

- **CHEMICAL AND CORROSION RESISTANCE**-Will not corrode or rot, even in the most aggressive soil conditions
- **TOUGH AND FLEXIBLE**-Good impact and abrasion resistance
- **FLEXIBLE**-Can be bent to 1.5 times the outside diameter without kinking to follow the contours of the borehole installation
- **THERMAL CONDUCTIVITY**-Excellent heat transfer properties
- **LEAK TIGHT JOINTS**-Fusion welded joints provide long term leak free joints



### Smooth wall innerduct.

Smooth wall is the standard High Density Polyethylene (HDPE) Duct. The interior of smooth wall has a slick finish which delivers the lowest coefficient of friction of all available non-lubricated innerduct. Smooth wall innerduct is a durable high quality product for direct burial and HDD (horizontal directional drilling) applications.



### Ribbed wall innerduct.

Blue Diamond's ribbed wall innerduct is designed to allow extremely long cable pulls to glide through the interior raised ribs. Ribbed wall innerduct is available through 3" diameter in any SDR and SDR rating.



### Tracer wire innerduct.

Tracer wire innerduct provides a method of locating underground fiber optic cable. The tracer wire is a single copper wire co-extruded onto the wall of the innerduct providing a corrosion resistant conductor. An alternative method of locating buried fiber optic cable is to use traceable tape, available pre-installed in any of our duct products.



### Figure 8 innerduct.

Blue Diamond's figure 8 innerduct features a high tensile galvanized support strand for aerial placement of duct. The support strand is an integral component of the co-extruded duct. Limited sizes & availability.

*\*Current product offering is 1.25" SDR 13.5 with 1/4" strand.*

## Colors & Identification

Standard colors available in:	White, black, blue, green, red, orange, lilac, grey, yellow, brown, buff, terra cotta. *Special colors may be available.
Striping:	Striping combinations are available in all colors in combinations of single, double, triple and quad stripes.
Identification:	<ul style="list-style-type: none"> <li>• Innerduct size, SDR and sequential markings every 2' are laser imprinted on every order.</li> <li>• Custom imprints such as company name, project name or any other special identification markings are also available.</li> </ul>
Options:	<ul style="list-style-type: none"> <li>• Lubrication.</li> <li>• Up to four lengths/colors of innerduct per reel available in parallel or series.</li> <li>• Pre-installed pull tape, tracer tape or cable.</li> </ul>

Pipe Size	Reel Size = Flange (wheel) x traverse (width from side) x drum (width of interior circle)							
1/2"	48x43x30	60x43x30	72x43x30	78x43x30				
	5,500	10,500	17,000	20,000				
3/4"	48x43x30	60x43x30	72x43x30	84x43x30	96x43x30			
	3,500	6,500	10,500	15,000	20,000			
1"	48x43x30	60x43x30	72x43x30	84x43x30	96x43x30	102x43x30		
	2,000	4,000	6,800	10,000	13,500	15,000		
1 1/4"	60x45x30	72x45x30	84x45x30	90x45x30	96x45x30	102x45x30		
	2,500	4,500	6,500	7,500	8,500	10,000		
1 1/2"	72x45x36	84x45x36	96x45x36	102x45x36	114x45x36			
	3,000	4,500	6,000	7,500	9,000			
2"	72x45x42	84x45x42	90x45x42	96x45x42	102x45x42	114x45x42		
	1,500	2,500	3,000	3,750	4,500	6,000		
2 1/2"	84x45x48	96x45x48	102x45x48	114x45x48				
	1,500	2,000	2,500	3,500				
3"	96x45x64	102x45x64	114x45x64	120x45x64				
	1,200	1,500	2,000	2,500				
4"	96x45x72		102x45x72		114x45x72		120x45x72	
	550 SDR	500 SIDR	750 SDR	700 SIDR	1,000 SDR	900 SIDR	1,250 SDR	1,100 SIDR
5"	102x45x78	114x45x78	120x45x78					
	400	600	750					
6"	114x45x84	120x45x84						
	275	400						

\*Paralleling duct will decrease maximum reel capacities.

## Respool Footages\*. (Parallel or Segment)

Pipe Size	2-way	3-way	4-way
1"	5,000	3,300	2,500
1 1/4"	3,600	2,500	1,800
1 1/2"	2,500	1,500	1,250
2"	1,500	1,000	750
3"	375		

\*Footage based on standard 96" reels. \*\*Footage is based on equal lengths. Special put ups are available.

Reels per Truckload	
72"	16
84"	14
96"	12
102"	12
114"	8
120"	8

ASTM F 2160  
SDR Pipe Data

## SDR 9

## SDR 11

## SDR 13.5

Nominal Duct Size	Nominal OD	Nominal ID	Min Wall	Weight lbs/ft	Nominal ID	Min Wall	Weight lbs/ft	Nominal ID	Min Wall	Weight lbs/ft
1/2"	0.840	0.633	0.093	0.099	0.667	0.076	0.085	0.696	0.062	0.072
3/4"	1.050	0.797	0.117	0.152	0.839	0.095	0.130	0.874	0.078	0.110
1"	1.315	1.003	0.146	0.235	1.051	0.120	0.200	1.100	0.097	0.169
1 1/4"	1.660	1.270	0.184	0.372	1.338	0.151	0.314	1.394	0.123	0.264
1 1/2"	1.900	1.452	0.211	0.488	1.534	0.173	0.409	1.599	0.141	0.343
2"	2.375	1.816	0.264	0.762	1.917	0.216	0.639	2.002	0.176	0.531
2 1/2"	2.875	2.198	0.319	1.117	2.321	0.261	0.936	2.424	0.213	0.778
3"	3.500	2.676	0.389	1.655	2.825	0.318	1.387	2.950	0.259	1.153
4"	4.500	3.440	0.500	2.737	3.633	0.409	2.293	3.794	0.333	1.906
5"	5.562	4.252	0.618	4.182	4.490	0.506	3.505	4.689	0.412	2.912
6"	6.625	5.064	0.824	5.931	5.348	0.602	4.971	5.585	0.491	4.130

ASTM F 2160  
SDR Pipe Data

## SDR 15.5

## SDR 17

## SCH 40

Nominal Duct Size	Nominal OD	Nominal ID	Min Wall	Weight lbs/ft	Nominal ID	Min Wall	Weight lbs/ft	Nominal ID	Min Wall	Weight lbs/ft
1/2"	0.840	-	-	-	-	-	-	-	-	-
3/4"	1.050	0.895	0.068	0.098	0.906	0.062	0.092	0.804	0.113	0.148
1"	1.315	1.147	0.084	0.151	1.140	0.077	0.139	1.029	0.133	0.218
1 1/4"	1.660	1.426	0.107	0.235	1.445	0.098	0.218	1.360	0.140	0.295
1 1/2"	1.900	1.635	0.123	0.305	1.656	0.112	0.282	1.590	0.145	0.352
2"	2.375	2.049	0.153	0.469	2.076	0.140	0.434	2.047	0.154	0.472
2 1/2"	2.875	2.482	0.185	0.685	2.516	0.169	0.629	2.445	0.203	0.744
3"	3.500	3.021	0.226	1.015	3.064	0.206	0.932	3.042	0.216	0.974
4"	4.500	3.885	0.290	1.678	3.939	0.265	1.540	3.896	0.282	1.649
5"	5.562	4.801	0.359	2.563	4.868	0.327	2.352	5.009	0.258	1.904
6"	6.625	5.719	0.427	3.637	5.799	0.390	3.337	6.031	0.280	2.444

ASTM D 2239  
SIDR Pipe Data

## SIDR 9

## SIDR 11.5

## SIDR 15

Nominal Duct Size	Nominal ID	Nominal OD	Min Wall	Weight lbs/ft	Nominal OD	Min Wall	Weight lbs/ft	Nominal OD	Min Wall	Weight lbs/ft
1"	1.049	1.302	0.117	0.194	1.251	0.091	0.151	1.209	0.070	0.117
1 1/4"	1.380	1.707	0.153	0.327	1.640	0.120	0.255	1.584	0.092	0.197
1 1/2"	1.610	1.989	0.179	0.444	1.910	0.140	0.343	1.845	0.107	0.264
2"	2.067	2.554	0.230	0.732	2.448	0.180	0.559	2.363	0.138	0.426
2 1/2"	2.469	3.051	0.274	1.044	2.924	0.215	0.798	2.818	0.165	0.600
3"	3.068	3.791	0.341	1.612	3.634	0.267	1.232	3.502	0.205	0.926
4"	4.026	-	-	-	4.768	0.350	2.122	4.595	0.268	1.595
5"	5.046	-	-	-	5.976	0.439	3.334	5.759	0.336	2.506

Please note that some sizes and dimensions may require additional equipment or extended lead times and may be required to be manufactured in straight lengths. Please inquire for details.

## UL Listed HDPE.

UL Listed HDPE is a nonmetallic flexible raceway manufactured from High Density Polyethylene used for underground or innerduct applications to protect cables and wires. UL Listed HDPE is compliant with the 2008 NEC Article 353 and is manufactured to UL 651 specifications. Its high tensile strength-to-weight ratio, superior crush resistance and low coefficient of friction for cable installation makes it ideal for directional boring.

Options:

Sizes 3/4" - 6"

Schedule 40

Schedule 80

Sizes 2" - 4" SDR 13.5

Multiple color and striping options

Sequentially marked footage

Conforms to: NEMA TC-7 Smoothwall

Coilable PE Electrical Plastic Conduit

*\*Note: Some dimensions only available in stick form.*

UL 651 Listed		SCH 40			SCH 80			SDR 13.5		
Nominal Duct Size	Nominal OD	Nominal ID	Min Wall	Weight lbs/ft	Nominal ID	Min Wall	Weight lbs/ft	Nominal ID	Min Wall	Weight lbs/ft
3/4"	1.050	0.804	0.113	0.148	0.722	0.154	0.189	-	-	-
1"	1.315	1.029	0.133	0.218	0.936	0.179	0.278	-	-	-
1 1/4"	1.660	1.360	0.140	0.295	1.255	0.191	0.384	-	-	-
1 1/2"	1.900	1.590	0.145	0.352	1.476	0.200	0.465	-	-	-
2"	2.375	2.047	0.154	0.472	1.913	0.218	0.644	2.002	0.176	0.531
2 1/2"	2.875	2.445	0.203	0.744	2.290	0.276	0.983	2.424	0.213	0.778
3"	3.500	-	-	-	2.864	0.300	1.316	2.950	0.259	1.153
4"	4.500	3.998	0.237	1.387	3.786	0.337	1.924	3.794	0.333	1.906
5"	5.562	5.009	0.258	1.904	4.768	0.375	2.671	-	-	-
6"	6.625	6.031	0.280	2.444	5.709	0.432	3.674	-	-	-

## Blue Diamond HDPE is RUS Listed.

## CIC (Cable In Conduit) HDPE.

BDI has the capability of installing power and telecom cables inside the conduit at the manufacturing facility. Applications include DOT, street or airport lighting projects, coax and fiber optic cable for the telecom, CCTV security FTTH, and CATV industries, power utility, command/control wiring for pipelines and irrigation systems, and most recently wind farms.

### Features and Benefits:

- Long continuous lengths on steel reels, perfect for directional drilling, plowing, or trenching
- One step installation offers an economical advantage over PVC "sticks"-short lengths
- Conduit diameters available from 1/2" through 6"
- Conduit protects single or multiple cables before, during and after installation, adhering to UL, NEC and Bellcore standards
- Blue Diamond will also install customer supplied cable

### Conduit Specifications:

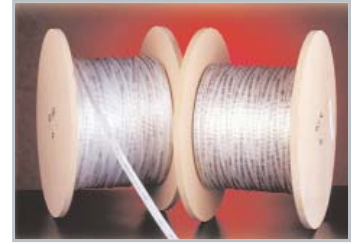
- Resin material per ASTM D 3350
- Manufactured to ASTM F 2160 and NEMA TC 7
- UL 1990 certified Cable in Conduit duct available conforming to NEC Article 354 CIC per NEC and ASTM D 3485
- Conduit available in Schedule 40 and 80 and SDR 13.5 and 11
- A variety of color and striping combinations available with identification and continuous footage markings





Blue Diamond offers a variety of HDPE accessories to help complete your project requirements. We provide couplings in aluminum and plastic, transition to other materials such as PVC, electrofusion couplers and even watertight configurations. Blue Diamond also offers an extensive line of duct plugs, vinyl end caps, cutting tools, repair kits and miscellaneous accessories.

In addition to various color schemes, accessories and Cable in Conduit, Blue Diamond offers polyester “mule” tape from 1000 lb to 6000 lb tensile strength factory installed in any of our diameters. We also offer detectable pull tape with a copper conductor woven into the tape, giving you a single product for detecting, measuring and pulling.



**Couplings:** (many alternatives available):



*Push Fit Plastic*



*Screw on Aluminum*



*Plastic Transition*

## HDPE Geothermal and Industrial Pressure Pipe.



Blue Diamond Geothermal and Industrial Pressure Pipe is manufactured from PE 3408/3608 resin, with an ASTM cell classification of 345464 meeting IGSHPA material requirements. The resin has an HDB rating of 1600 psi at 73 degrees F, is listed in PPI technical report TR4, and is formulated for long term performance and superior stress crack resistance. BDI HDPE pressure pipe meets ASTM D 3035 and ASTM F 714.

BDI also has the capability to manufacture pressure pipe from PE 4710 resin which allows higher pressures in the same wall thicknesses as PE 3408 pipe.

Geothermal pipe is available in plain coils but also can be supplied with a U-bend (180 degree elbow) welded at the manufacturing facility.

## Blue Diamond OptiVaults.

The Blue Diamond OptiVault is a surface access storage vault designed to house slack cable, amplifiers, and splice closures for underground cable construction. With a 29" surface entry, the OptiVault is available in 3 heights and a standard 48" internal diameter. The OptiVault is manufactured from HDPE for easy handling and installation. The OptiVault is RUS/USDA listed and has lid options ranging from traffic rated, to concrete filled. This unique design is an innovative and cost effective solution for your outside plant application.





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Blue Diamond is proud to be a member of:



Blue Diamond Industries manufactures and sells HDPE (polyethylene) pipe, in the telecom market to protect fiber optic cable, in the power market to protect electric cable, and civil construction markets (such as geothermal piping) to transport fluids. Blue Diamond's aim is to be agile and competitive, responding to our customer needs better than our competitors, without compromising the quality required by industry specifications.

Our vision is to grow Blue Diamond by leveraging our expertise in extrusion of plastics, and our knowledge of engineered construction product applications and markets, achieved by acquisition or organic means.

We will achieve our growth through teamwork, while providing a good workplace environment, a competitive wage and benefits, and empathy for our employees to achieve good standing in communities where we operate.