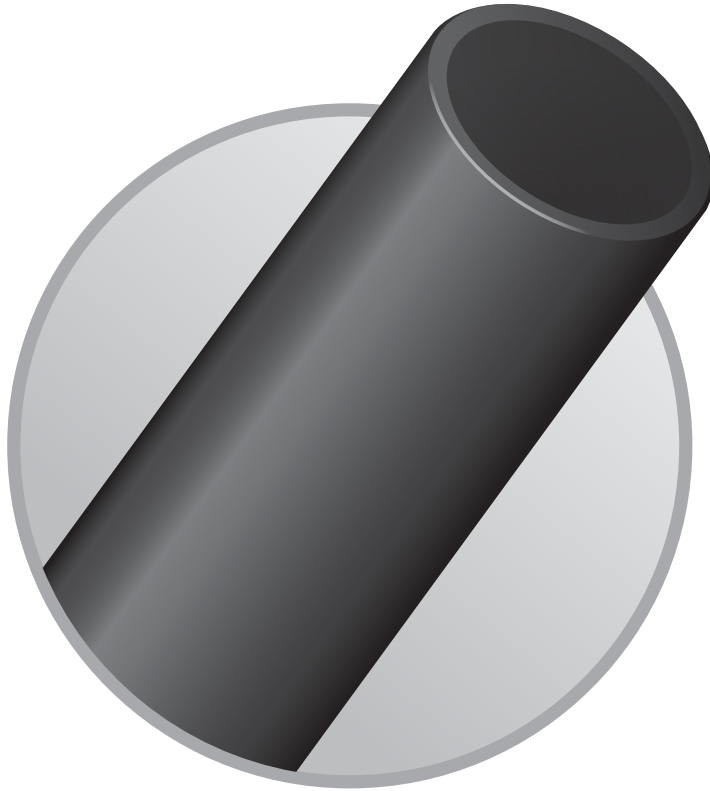


PERMAGUARD-L (Listed)

www.duraline.com



Customer Service
800-847-7661



FEATURES:

- ETL Listed to UL 651A, used per NEC Article 353
- Manufactured from flexible HDPE, makes gradual bends without special equipment
- Excellent low temperature properties, for better handling in cold climates
- Outstanding ductility and strength, protects cables from shifting ground
- Protects cables from rock and root impingement, increasing UG cable life
- Provides a permanent pathway, simplifies future cable repair and replacement
- Added UV stabilization package

APPLICATION:

Innerduct placed into existing conduit, direct buried, concrete encased

INSTALLATION METHODS:

Trenched, Trenchless – horizontally directionally bored (HDD) and chute or pull plowed, concrete encased (minimum of 2" of cover)

MARKET APPLICATION:



DUCT COLOR:



STRIPE:



Color coded with minimum of 3 extruded stripes (equally separated 120° degrees apart) or extruded color surface

OPTIONS:

FOOTAGE MARKINGS Sequential foot or meter markings. Custom print streams available.

PREINSTALLED TAPE Factory pre-installed Bull-Line™ Pull Tape with EVEN-LOAD™, ensures extra slack at any access point throughout the reel. Available 500lb - 6,000lb tensile strength or locatable.

PACKAGING Long continuous lengths on reels or coils. Stick lengths of 40' or 50'

STANDARDS:

Meets or exceeds the HDPE resin requirements per ASTM D 3350 UV Black (minimum carbon black loading of 2%), Sequential footage markings, permanent ink jet or indent print, tested and listed by Intertek Laboratories (ETL) to assure compliance with UL 651A, certified by Dura-Line to comply with all UL 651A property and testing requirements.

Wall Type	Pipe Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	
	Nom OD (in)	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.500	5.563	6.625	
	OD Tolerance +/-	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.011	
	Bend Radius (in) – Supported	8	10	13	17	19	24	29	39	50	61	73	
	Bend Radius (in) – Unsupported	16	20	26	34	38	48	58	78	100	122	146	
EPEC-B/ SDR 13.5	Min. Wall (in)		0.078	0.097	0.123	0.141	0.176	0.213	0.259	0.333	0.412	0.491	
	Wall Tolerance +/-		0.020	0.020	0.020	0.020	0.021	0.026	0.031	0.040	0.049	0.059	
	Avg ID (in)		0.874	1.101	1.394	1.598	2.002	2.423	2.951	3.794	4.689	5.585	
	Weight (#/ft)		0.104	0.162	0.259	0.340	0.530	0.777	1.151	1.902	2.909	4.126	
	Safe Working Load		570	894	1,425	1,867	2,917	4,274	6,335	10,472	16,004	22,697	
EPEC-40/ SCH 40	Min. Wall (in)	0.109	0.113	0.133	0.140	0.145	0.154	0.203	0.216	0.237	0.258	0.280	*EPEC-40 Diameters 4" – 6"
	Wall Tolerance +	0.020	0.020	0.020	0.020	0.020	0.020	0.024	0.026	0.028	0.031	0.034	available in stick length only
	Avg ID (in)	0.602	0.804	1.029	1.360	1.590	2.047	2.445	3.042	3.998	5.016	6.031	
	Weight (#/ft)	0.109	0.145	0.215	0.291	0.349	0.469	0.744	0.973	1.387	1.882	2.443	
	Safe Working Load	601	798	1,340	1,604	1,919	2,579	4,090	5,348	7,618	10,320	13,395	
EPEC-80/ SCH 80	Min. Wall (in)	0.147	0.154	0.179	0.191	0.200	0.218	0.276	0.300	0.337	0.375	0.432	
	Wall Tolerance +	0.020	0.020	0.021	0.023	0.024	0.026	0.033	0.036	0.040	0.045	0.052	
	Avg ID (in)	0.526	0.722	0.936	1.255	1.476	1.913	2.290	2.864	3.786	4.768	5.709	
	Weight (#/ft)	0.139	0.188	0.277	0.383	0.465	0.644	0.982	1.315	1.923	2.668	3.669	
	Safe Working Load	768	1,040	1,533	2,116	2,564	3,545	5,409	7,238	10,578	14,669	20,172	

Notes:

1. Supported bend radius for 1/2" through 2 1/2" is 10 times the OD while the unsupported bend radius is 20 times the OD. Supported bend radius for 3" through 6" is 11 times the OD while the unsupported bend radius is 22 times the OD.
2. "Safe Working Load" is calculated using a 20% safety factor with the minimum resin tensile strength of 3,000 psi, the average OD and minimum wall thickness.

Resin Requirements per ASTM D 3350, having a minimum cell classification of 334420 C for black and E for color.

Cell #	Property	Description Minimum Requirements	Acceptable Test Methods
3	Resin Density	0.940-0.947 g/cm3	ASTM D 1505 or ASTM D 792 or ASTM 4883
3	Melt Index	<0.4 grams/10 minutes	ASTM D 1238
4	Flexural Modulus	80,000 psi	ASTM D 790
4	Tensile Strength	3,000 psi	ASTM D 638
-	Elongation	400%	ASTM D 638
8	Slow Crack Growth Resistance	Condition B, 10% Igepal/H2O solution, F50>24hrs	ASTM D 1693
0	Hydrostatic Design Basis	Non-pressure rated	ASTM D 2837
C	Black UV Resistance	Added carbon black @ 2% by weight	ASTM D 4218
or E	Color UV Resistance	Color with UV inhibitor and antioxidant	ASTM D 4238