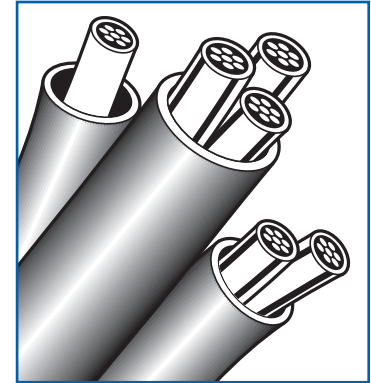


Carlson® Power Cable in Duct



Features

- Cables preinstalled in HDPE - eliminating the need to pull cables.
- Standard wall thicknesses of TC7 Type A, TC7 Type B (SDR 13.5), Schedule 40 and Schedule 80
- UL Listed duct assembly (upon request)
- Manufactured in accordance to NEC Articles 352 and 354.
- Conduit sequentially marked
- Prelubricated during assembly process
- Conforms to electrical industry specifications



Specifications

1.0 General

Carlson HDPE Power Cable In Duct is manufactured to the following various industry standards and specifications for dimensional requirements.

ASTM F 2160 Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD).

ASTM D 3485 Standard specification for Smoothwall Coilable Polyethylene (PE) Conduit (duct) for preassembled wire and cable.

ASTM D 3035 Polyethylene (PE) Plastic Pipe (SDR) Based on Controlled Outside Diameter.

NEMA TC-7 Smooth Wall Coilable Polyethylene Electrical Plastic Conduit.

UL 651B Continuous length HDPE

2.0 Material

Carlson duct is manufactured from a suitable thermoplastic polymer conforming to the minimum standard of PE334470E/C as defined in ASTM D3350. (see table 1)

Carlson® High Density Polyethylene duct is manufactured in the following configuration:

Smoothwall – Smooth Interior and Smooth Exterior wall.

3.0 Product Description

Polyethylene duct extruded as coilable tubing for use as a single or multiple raceway assembly.

The conduit assembly may be direct buried, encased in concrete and used as innerducts.

Table 1 – Resin Properties The resin properties shall meet or exceed the values listed below for HDPE.

ASTM Test	Description	Values HDPE
D-1505	Density g/CM ³	.941 - .955
D-1238	Melt Index, g/10 min Condition E	.05 - .50
D-790	Flexural Modulus, MPa (PSI)	80,000 min.
D-638	Tensile strength at yield (psi)	3000 min.
D-1693	Environmental Stress Crack Resistance Condition B,F ₁₀	96 hrs. min.
D-746	Brittleness Temperature	-75°C

TC7 Type A

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter*			
					1	2	3	4
1"	1.315	1.165	.075	12.64	0.842	0.456	0.422	0.366
1-1/4"	1.660	1.460	.100	21.19	1.057	0.572	0.530	0.459
1-1/2"	1.900	1.670	.115	27.89	1.210	0.654	0.607	0.526
2"	2.375	2.085	.145	43.93	1.512	0.818	0.758	0.657
2-1/2"	2.875	2.469	.203	73.69	1.792	0.969	0.899	0.778
3"	3.500	3.068	.216	96.37	2.228	1.205	1.117	0.968

Schedule 40

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter*			
					1	2	3	4
1"	1.315	1.049	.133	21.68	0.749	0.405	0.376	0.325
1-1/4"	1.660	1.380	.140	29.31	0.990	0.535	0.497	0.430
1-1/2"	1.900	1.610	.145	35.00	1.158	0.626	0.581	0.503
2"	2.375	2.067	.154	46.92	1.490	0.806	0.747	0.647
2-1/2"	2.875	2.469	.203	74.00	1.783	0.964	0.894	0.774
3"	3.500	3.040	.216	97.31	2.213	1.197	1.110	0.961

TC7 SDR 13.5 Type B

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter*			
					1	2	3	4
1"	1.315	1.121	.097	16.05	0.810	0.438	0.406	0.352
1-1/4"	1.660	1.414	.123	25.68	1.024	0.554	0.513	0.445
1-1/2"	1.900	1.618	.141	33.70	1.172	0.634	0.588	0.509
2"	2.375	2.023	.176	52.58	1.467	0.793	0.736	0.637
2-1/2"	2.875	2.449	.213	76.41	1.755	0.949	0.880	0.762
3"	3.500	2.982	.259	114.04	2.158	1.167	1.082	0.937

Schedule 80

Nom. Size	Nom. OD	Nom. ID	Min. Wall	Conduit Wt/ 100 Ft.	Max Cable Diameter*			
					1	2	3	4
1"	1.315	.957	.179	27.66	0.682	0.369	0.342	0.296
1-1/4"	1.660	1.278	.191	38.11	0.914	0.494	0.459	0.397
1-1/2"	1.900	1.500	.200	46.30	1.075	0.581	0.539	0.467
2"	2.375	1.939	.218	64.08	1.393	0.753	0.699	0.605
2-1/2"	2.875	2.323	.276	97.59	1.668	0.902	0.837	0.724
3"	3.500	2.900	.300	130.92	2.085	1.128	1.046	0.906

*Maximum cable diameter based on 2002 National Electrical Code, Chapter 9 Article 352 Table 4 - fill percentages of: 1 Cable 53%; 2 Cables 31%; 3 or more Cables 40%.

Cable Specifications

Common Cable offerings. Other Power Cables available according to customer specifications.

600 Volt THHN Cu

Gauge	OD	Wt/Ft.
10	.164	.040
8	.216	.066
6	.253	.100
4	.322	.159
3	.350	.191
2	.381	.241
1	.443	.305
1/0	.483	.377

5 KV 115mil Cu XLP/sh

Gauge	OD	Wt/Ft.
6	.715	.266
4	.765	.355
2	.865	.432
1	.905	.505
1/0	.945	.589
2/0	.990	.694

15 KV 175mil Cu XLP/sh

Gauge	OD	Wt/Ft.
2	.990	.545
1	1.025	.616
1/0	1.065	.705
2/0	1.110	.815

600 Volt USE-2 Alum XLP Triplexed Non-sh

Gauge	OD	Wt/Ft.
4	.770	.204
2	.890	.294
1/0	1.150	.462
2/0	1.240	.557

5 KV 125mil Cu EPR/Non-sh

Gauge	OD	Wt/Ft.
6	.605	.231
4	.650	.296
2	.710	.346
1	.750	.465
1/0	.790	.548
2/0	.835	.646

15 KV 220mil Cu XLP/sh

Gauge	OD	Wt/Ft.
2	1.090	.609
1	1.120	.682
1/0	1.160	.774
2/0	1.205	.886

5 KV Airport Lighting L-824 Cu/Non sh

Gauge	OD	Wt/Ft.
8	.375	.094
6	.415	.130
4	.46	.189

15 KV 175mil Alum URD/EPR

Gauge	OD	Wt/Ft.
2	.977	.505
1/0	1.056	.650
2/0	1.100	.845

Full neutral

5/8 KV 115mil Alum EPR/sh

Gauge	OD	Wt/Ft.
2	.811	.305
1/0	.901	.375
2/0	.975	.445

5KV 133% 8KV 100%

15 KV 220mil Alum URD/EPR

Gauge	OD	Wt/Ft.
2	1.067	.550
1/0	1.146	.720
2/0	1.190	.825

Full neutral

Reel Information

Reel Wt. (lbs.)	Outside Dimensions F x W x D	Lengths					
		1"	1-1/4"	1-1/2"	2"	2-1/2"	3
235	48 x 48 x 30	6000	3600	2500			
235	66 x 48 x 40				1150	1050	
260	72 x 48 x 30	7400	4575	3250			
260	72 x 48 x 40				1800	1350	
300	82 x 48 x 30	10000	6200	4600			
300	82 x 48 x 40				2500	1975	
330	96 x 48 x 30		8300	6375			
330	96 x 48 x 40				3700	2700	
330	96 x 48 x 68						1000

±10% Max Lengths

Maximum wt. (including reel wt.): 4300 lbs. for steel, 6000 lbs. for wood.

Minimum quantity: 1000ft.

Recommended fill: 1 Cable 53%; 2 Cables 31%; 3 or more Cables 40%.

Packaging (returnable): Steel reel with wood reinforced staves for 4300 lbs. or less and wood reels for up to 6000 lbs.

Warranty

Carlson can purchase cable to customer specifications and warranty cable and conduit from defects and workmanship during manufacture. Cable manufacturers' warranty of one year applies to purchased cable. Supplied cable can also be provided with warranty agreement between cable supplier and customer. Cable certifications are available upon request for incoming inspection and post-installation.

