

Okoguard® Reduced Diameter Cables

15kV to 35kV Underground Primary Distribution and
PILC Replacement Cable, 105°C Rating
Okopact® (Compact Stranded) Copper Conductor
Flat Straps, OKOLENE® Jacket with Red Identification Stripes
100% and 133% Insulation Levels



- A Conductor-Compressed or Compact Round Copper
- B Strand Screen -
- C Insulation-Okoguard-EPR
- D Insulation Screen -
- E Extruded Semiconducting EPR
- F Concentric Conductor-Bare Copper Flat Straps
- F Encapsulating Jacket-Okolene with 3 extruded red ID stripes, and NESC Lightning bolt

Insulation

Okoguard® is Okonite's registered trade name for its exclusive ethylene-propylene rubber (EPR) based, thermosetting compound, whose optimum balance of electrical and physical properties is unequaled in other solid dielectrics. Okoguard insulation, with the distinctive red color and a totally integrated EPR system, provides the optimum balance of electrical and physical properties for long, problem-free service.

Ethylene-propylene rubber screens are extruded over the conductor and the insulation. The triple tandem extrusion of these screens with the insulation provides optimum electrical characteristics.

The bare copper concentric flat straps are uniformly spaced around the insulation screen. The overall polyethylene jacket provides protection against mechanical damage and corrosion.

Product identification is provided through the use of three red stripes placed 120° apart in the black jacket with an NESC lightning bolt.

Applications

Okoguard cables provide maximum circuit longevity in underground residential distribution systems. They can be buried direct or installed in underground ducts or conduits. Cables with flat straps are typically used as PILC replacement cable and when a reduced diameter cable is desired to meet NEC maximum percent fill limits. They are also used for rodent protection in some environments.

Specifications

Central Conductor: Bare copper compressed per ASTM B-3 and ASTM B-8 or compact round per ASTM B-496.

Conductor Screen: Extruded semiconducting ethylene-propylene rubber meets or exceeds the requirements of ICEA S-94-649, AEIC CS8, and CSA C68.5.

Insulation: Extruded Okoguard meets or exceeds the requirements of ICEA S-94-649, AEIC CS8, and CSA C68.5.

Insulation Screen: Extruded semiconducting ethylene-propylene rubber insulation screen that meets the requirements of ICEA S-94-649, AEIC CS8, and CSA C68.5.

Concentric Conductor: Bare copper concentric flat straps helically applied.

Jacket: Black Okolene® LLDPE with 3 red extruded stripes meets or exceeds the requirements of ICEA S-94-649, AEIC CS8, and CSA C68.5 for polyethylene jackets.

Product Features

- Triple tandem extruded, all EPR system.
- Okoguard cables meet or exceed ICEA standards.
- Improved Temperature Rating. Okoguard insulation system has been tested and qualified for operations at 105°C continuous and 140°C emergency operating temperature.
- 250°C short circuit rating.
- Excellent corona resistance.
- Low dielectric constant and power factor.
- Screens are clean stripping.
- Exceptional resistance to "treeing".
- Moisture resistant.
- Excellent resistance to most chemicals.
- Can be listed by UL as Type MV-90 or MV-105 on special orders.
- CSA C68.5 listed, LTGG (-40°C), SR.

Design Options:

- Triplexed or Paralleled
- Additional conductor sizes
- Filled Strand conductors
- Aluminum conductors
- Tinned Straps
- Water Blocking Powder or Tape
- Product identification via colored jackets
- Semiconducting jacket

Optional UL Jackets/Ratings:

- - FR-PVC Jacket (MV-105).
- - XLPE Jacket (MV-105).
- - Okolene Polyethylene (MV-90).
- - Okolene Polypropylene (Non-UL).

Okoguard® Reduced Diameter Cables

Copper Compact Round Conductor
Flat Straps



Product Data Section 2: Sheet 63

Catalog Number	Conductor Size AWG/kcmil	Nominal Dia. Over Insulation (in.)	Nominal Dia. Over Insulation Screen (in.)	Flat Strap (No. x W x T) mils (1)	Neutral Size	Jacket Thickness (mils)	Nominal O.D. (in.)	Cross-sectional Area Sq. (in.)	Approx. Net Weight (lbs./1000')	Approx. Ship Weight (lbs./1000')	Ampacity 90°C Ductbank	Ampacity 105°C Ductbank	Ampacity 90°C Direct Buried	Ampacity 105°C Direct Buried
Copper Compact Round Conductor 175 mils, 100% Insulation Level 15kV														
144-23-2072	1/0(19x)	0.74	0.80	8 x 175 x 20	1/3	50	0.95	0.70	744 795	226 245	288 310			
144-23-2075	2/0(19x)	0.78	0.84	10 x 175 x 20	1/3	50	0.99	0.77	875 944	256 277	327 352			
144-23-2078	3/0(19x)	0.83	0.89	9 x 200 x 25	1/3	50	1.05	0.86	1049 1127	290 314	371 399			
•144-23-2081	4/0(19x)	0.86	0.93	8 x 200 x 35	1/3	50	1.11	0.97	1259 1371	328 356	419 451			
144-23-2085	250(37x)	0.93	0.99	10 x 200 x 35	1/3	50	1.17	1.08	1466 1578	375 407	456 490			
144-23-2086	250(37x)	0.93	0.99	11 x 150 x 20	1/6	50	1.14	1.03	1306 1418	380 413	461 496			
•144-23-2090	350(37x)	1.01	1.08	14 x 200 x 35	1/3	50	1.26	1.24	1914 2056	447 485	539 580			
•144-23-2091	350(37x)	1.01	1.08	14 x 175 x 20	1/6	50	1.23	1.18	1706 1848	457 496	555 598			
•144-23-2093	500(37x)	1.12	1.19	15 x 175 x 25	1/6	50	1.35	1.43	2289 2851	545 592	655 705			
•144-23-2094	500(37x)	1.12	1.19	10 x 175 x 25	1/9	50	1.35	1.43	2205 2358	552 598	662 713			
•144-23-2096	750(61x)	1.30	1.37	15 x 200 x 35	1/6	50	1.53	1.85	3308 3559	647 703	769 823			
•144-23-2097	750(61x)	1.30	1.37	15 x 175 x 25	1/9	50	1.51	1.80	3145 3396	660 716	786 846			
144-23-2098	1000(61x)	1.47	1.53	19 x 200 x 35	1/6	80	1.77	2.47	4345 4629	731 793	845 909			
144-23-2099	1000(61x)	1.47	1.53	20 x 175 x 25	1/9	80	1.67	2.18	4157 4441	763 828	872 938			
Copper Compact Round Conductor 220 mils, 133% Insulation Level 15kV														
•145-23-3072	1/0(19x)	0.81	0.88	12 x 175 x 40	Full	50	1.07	0.90	1049 1116	224 243	285 307			
•144-23-3072	1/0(19x)	0.81	0.88	8 x 175 x 20	1/3	50	1.03	0.83	812 870	226 245	288 310			
•145-23-3075	2/0(19x)	0.85	0.92	10 x 200 x 35	2/3	50	1.10	0.95	1099 1166	255 276	325 350			
•144-23-3075	2/0(19x)	0.85	0.92	10 x 175 x 20	1/3	50	1.07	0.90	947 1014	256 277	327 352			
144-23-3078	3/0(19x)	0.92	0.98	15 x 150 x 20	1/3	50	1.13	1.00	1128 1240	290 314	371 399			
•144-23-3081	4/0(19x)	0.95	1.02	13 x 175 x 25	1/3	50	1.18	1.09	1336 1416	328 356	419 451			
•144-23-3085	250(37x)	1.00	1.07	15 x 175 x 25	1/3	50	1.23	1.19	1520 1620	375 407	456 490			
•144-23-3086	250(37x)	1.00	1.07	11 x 150 x 20	1/6	50	1.22	1.17	1385 1475	380 413	461 496			
•144-23-3090	350(37x)	1.10	1.16	14 x 200 x 35	1/3	50	1.34	1.42	2013 2129	447 485	539 580			
•144-23-3091	350(37x)	1.10	1.16	14 x 175 x 20	1/6	50	1.31	1.36	1804 1920	457 496	555 598			
•144-23-3093	500(37x)	1.21	1.28	15 x 175 x 25	1/6	50	1.44	1.63	2400 2544	545 592	655 705			
•144-23-3094	500(37x)	1.21	1.28	10 x 175 x 25	1/9	50	1.44	1.63	2318 2461	552 598	662 713			
•144-23-3096	750(61x)	1.39	1.46	15 x 200 x 35	1/6	50	1.64	2.11	3437 3721	647 703	769 823			
•144-23-3097	750(61x)	1.39	1.46	15 x 175 x 25	1/9	50	1.62	2.06	3272 3449	660 716	786 846			
•144-23-3099	1000(61x)	1.54	1.60	19 x 200 x 35	1/6	80	1.85	2.68	4463 4729	731 793	845 909			
•144-23-3101	1000(61x)	1.54	1.60	20 x 175 x 25	1/9	80	1.83	2.62	4274 4508	763 828	872 938			
144-23-3103	*1250(91x)	1.75	1.81	24 x 200 x 35	1/6	80	2.06	3.32	5549 5949	733 795	899 968			
144-23-3104	*1250(91x)	1.75	1.81	22 x 200 x 25	1/9	80	2.04	3.26	5305 5705	763 828	934 1005			
144-23-3105	*1250(91x)	1.75	1.81	18 x 200 x 25	1/12	80	2.04	3.26	5229 5629	793 860	969 1043			

Okonite's web site, www.okonite.com contains the most up to date information.

(1) individual Flat Strap configurations may vary. The resulting combination meets the specified neutral size requirement.

*1250 kcmil Compressed Class B Strand

•Items use component core for quicker delivery.

Okoguard® Reduced Diameter Cables

Copper Compact Round Conductor
Flat Straps



Product Data Section 2: Sheet 63

Catalog Number	Conductor Size AWG/kcmil	Nominal Dia. Over Insulation (in.)	Nominal Dia. Over Insulation Screen	Flat Strap (No. x W x T) mils (1)	Neutral Size	Jacket Thickness (mils)	Nominal O.D. (in.)	Cross-sectional Area Sq. (in.)	Approx. Net Weight (lbs./1000')	Approx. Ship Weight (lbs./1000')	Ampacity 90°C Ductbank	Ampacity 105°C Ductbank	Ampacity 90°C Direct Burial	Ampacity 105°C Direct Burial
Copper Compact Round Conductor 260 mils, 100% Insulation Level 25kV														
145-23-4272	1/0(19x)	0.91	0.97	12 x 200 x 35	Full	50	1.15	1.04	1130	1243	227	246	279	301
144-23-4272	1/0(19x)	0.91	0.97	8 x 175 x 20	1/3	50	1.12	0.99	899	1011	229	248	281	303
145-23-4275	2/0(19x)	0.95	1.01	10 x 200 x 35	2/3	50	1.19	1.12	1190	1302	258	280	318	342
144-23-4275	2/0(19x)	0.95	1.01	10 x 175 x 20	1/3	50	1.16	1.06	1036	1149	260	282	320	344
144-23-4278	3/0(19x)	1.00	1.06	15 x 150 x 20	1/3	50	1.21	1.15	1211	1323	294	319	363	391
144-23-4281	4/0(19x)	1.05	1.11	13 x 175 x 25	1/3	50	1.27	1.27	1435	1549	333	361	411	442
144-23-4285	250(37x)	1.11	1.17	15 x 175 x 25	1/3	50	1.33	1.38	1626	1768	361	392	445	479
144-23-4286	250(37x)	1.11	1.17	11 x 150 x 20	1/6	50	1.32	1.36	1491	1633	365	396	449	484
144-23-4290	350(37x)	1.20	1.26	14 x 200 x 35	1/3	50	1.44	1.63	2129	2281	427	463	527	568
144-23-4291	350(37x)	1.20	1.26	14 x 175 x 20	1/6	50	1.41	1.56	1918	2070	435	472	537	578
144-23-4293	500(37x)	1.32	1.38	15 x 175 x 25	1/6	50	1.54	1.86	2526	2750	518	562	640	689
144-23-4294	500(37x)	1.32	1.38	10 x 175 x 25	1/9	50	1.54	1.86	2442	2667	524	568	647	696
144-23-4296	750(61x)	1.50	1.56	20 x 200 x 25	1/6	80	1.78	2.49	3612	3896	626	679	763	821
144-23-4297	750(61x)	1.50	1.56	15 x 175 x 25	1/9	80	1.78	2.49	3487	3771	639	694	777	837
144-23-4299	1000(61x)	1.64	1.70	19 x 200 x 35	1/6	80	1.95	2.97	4625	5750	689	747	843	907
144-23-4301	1000(61x)	1.64	1.70	20 x 175 x 25	1/9	80	1.93	2.91	4435	4740	710	771	868	934
144-23-4303	*1250(91x)	1.84	1.90	24 x 200 x 35	1/6	80	2.14	3.59	5698	6088	751	814	893	961
144-23-4304	*1250(91x)	1.84	1.90	22 x 200 x 25	1/6	80	2.12	3.53	5453	5843	780	847	927	998
144-23-4305	*1250(91x)	1.84	1.90	18 x 200 x 25	1/12	80	2.12	3.53	5378	5768	809	878	960	1033

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Catalog Number	Conductor Size AWG/kcmil	Nominal Dia. Over Insulation (in.)	Nominal Dia. Over Insulation Screen	Flat Strap (No.xWxT) mils (1)	Neutral Size	Jacket Thickness (mils)	Nominal O.D. (in.)	Cross-sectional Area Sq. (in.)	Approx. Net Weight (lbs./1000')	Approx. Ship Weight (lbs./1000')	Ampacity 90°C Ductbank	Ampacity 105°C Ductbank	Ampacity 90°C Direct Burial	Ampacity 105°C Direct Burial
Copper Compact Round Conductor 345 mils, 100% Insulation Level 35kV														
145-23-6272	1/0(19x)	1.09	1.15	12 x 200 x 35	Full	50	1.33	1.40	1326	1444	227	246	279	301
144-23-6272	1/0(19x)	1.09	1.15	8 x 175 x 20	1/3	50	1.30	1.33	1091	1205	229	248	281	303
145-23-6275	2/0(19x)	1.13	1.19	10 x 200 x 35	2/3	50	1.37	1.48	1392	1510	258	280	318	342
144-23-6275	2/0(19x)	1.13	1.19	10 x 175 x 20	1/3	50	1.34	1.42	1235	1353	260	282	320	344
144-23-6278	3/0(19x)	1.18	1.24	15 x 150 x 20	1/3	50	1.39	1.52	1417	1569	294	319	363	391
144-23-6281	4/0(19x)	1.23	1.29	13 x 175 x 25	1/3	50	1.45	1.66	1650	1811	333	361	411	442
144-23-6285	250(37x)	1.28	1.34	15 x 175 x 25	1/3	50	1.50	1.77	1837	2021	361	392	445	479
144-23-6286	250(37x)	1.28	1.34	11 x 150 x 20	1/6	50	1.49	1.74	1702	1863	365	396	449	484
144-23-6290	350(37x)	1.37	1.43	21 x 175 x 25	1/3	50	1.59	1.99	2319	2881	427	463	527	568
144-23-6291	350(37x)	1.37	1.43	14 x 175 x 20	1/6	50	1.58	1.97	2142	2326	435	472	537	578
•144-23-6293	500(37x)	1.47	1.54	15 x 175 x 25	1/6	80	1.77	2.45	2829	3057	518	562	640	689
•144-23-6294	500(37x)	1.47	1.54	10 x 175 x 25	1/9	80	1.77	2.45	2745	2973	524	568	647	696
144-23-6296	750(61x)	1.67	1.73	20 x 200 x 25	1/6	80	1.95	2.99	3891	4196	626	679	763	821
144-23-6297	750(61x)	1.67	1.73	15 x 175 x 25	1/9	80	1.95	2.99	3765	4070	639	694	777	837
144-23-6299	1000(61x)	1.81	1.87	19 x 200 x 35	1/6	80	2.12	3.52	4928	5318	689	747	843	907
144-23-6301	1000(61x)	1.81	1.87	20 x 175 x 25	1/9	80	2.10	3.46	4736	5126	710	771	868	934
144-23-6303	*1250(91x)	2.01	2.11	24 x 200 x 35	1/6	80	2.35	4.34	6111	6670	751	814	893	961
144-23-6304	*1250(91x)	2.01	2.11	22 x 200 x 25	1/9	80	2.33	4.27	5862	6421	780	847	927	998
144-23-6305	*1250(91x)	2.01	2.11	18 x 200 x 25	1/12	80	2.33	4.27	5787	6346	809	878	960	1033

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*1250 kcmil Compressed Class B Strand

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Ampacity Conditions

Ductbank

15-35kV 1/0-1250 kcmil with Flat Straps in Ductbank

Ampacities IEEE 835-1994, 3 Single Cables in geometry (a): Single circuit in underground duct in Trefoil configuration. Spacing between cables is equal to the diameter of the cable. 1x1 Ductbank, 30" to top of ductbank, 75% Load Factor, 90 RHO soil, 60 RHO concrete, corrected to 20C Earth ambient temperature, multi-point grounded.

Direct Buried

15-35kV 1/0-1250 kcmil with Flat Straps, Direct Buried

Ampacities IEEE 835-1994, 3 Single Cables in geometry (I): Single circuit, direct buried 36" deep in Trefoil configuration. Spacing between cables is equal to the diameter of the cable, 75% Load Factor, 90 RHO soil, corrected to 20C Earth ambient temperature, multi-point grounded.

Ampacities for other configurations available upon request. Contact your local Okonite sales representative.