



# Okoguard<sup>®</sup> HV EPR-Okoseal<sup>®</sup>

## 115kV & 138kV Shielded Power Cable

105°C Wet or Dry Conductor Rating



- A Uncoated, Okopact (Compact) or Compress Stranded Copper or Aluminum Conductor
- B Strand Screen-Extruded Semiconducting EPR
- C Insulation-Okoguard HV EPR
- D Insulation Screen-Extruded Semiconducting EPR
- E Shield- 5 Mil Uncoated Copper Tape
- F Jacket-Okoseal

### Insulation

Okoguard HV is Okonite's low loss EPR insulation rated for wet or dry installations without the use of water impervious sheaths or foils (moisture barriers). Okoguard HV has the same important balance of properties as our medium voltage Okoguard but with optimized properties needed for high voltage operation.

Okoguard HV uses an all EPR insulation system whereby all three layers (strand screen, insulation, and insulation screen) are EPR, manufactured using triple tandem (single pass) extrusion.

Okoguard HV insulation retains the distinctive red color in a totally integrated EPR system providing an optimum balance of electrical and physical properties needed for long, problem free HV installations. Okoguard HV cables are compatible with all types of terminations, GIS connectors and splices.

### Jackets

The Okoseal (PVC) jacket supplied with Okoguard HV cables is mechanically rugged and has excellent resistance to oil and most chemicals.

### Applications

Okoguard HV cables are designed for use in primary circuits in both electrical utilities and industrial installations where they provide maximum circuit security and economical installation. Rated for continuous operation with a 105°C conductor temperature, Okoguard HV cables may be installed in wet or dry locations, indoors or outdoors (exposed to sunlight) in underground ducts, tunnels, directional bores, road bores or direct burial.

### Specifications

**Conductor:** Uncoated copper sizes 750 through 1000 kcmil are compact round strand per ASTM B496. Uncoated copper sizes larger than 1000 kcmil are compressed round Class B strand per ASTM B3 and ASTM B8. Aluminum sizes are compressed round Class B strand per ASTM B231 and ASTM B609.

**Strand Screen:** Thermoset, semiconducting EPR strand screen meets or exceeds the physical and electrical requirements of AEIC CS9 and ICEA S-108-720.

**Insulation:** Wet or dry rated thermoset, low loss EPR insulation meets or exceeds the requirements of AEIC CS9 and ICEA S-108-720.

**Insulation Screen:** Thermoset bonded semiconducting EPR insulation screen meets or exceeds the physical and electrical requirements of AEIC CS9 and ICEA S-108-720.

**Shield:** 5 mil thick uncoated copper tape, helically applied with 25% nominal overlap. Optional shields include concentric wires, a combination of copper tape and concentric wires or a longitudinal corrugated copper tape. Aluminum CLX armor covering is also available.

**Jacket:** Okoseal PVC meets or exceeds the physical and electrical requirements of ICEA S-108-720 for polyvinyl chloride jackets. Optional jackets include an insulating red OKOLENE jacket with a black semiconducting jacket when field jacket integrity testing is required.

### Product Features

- Triple tandem extruded, all EPR system.
  - Okoguard cables meet or exceed recognized industry standards (AEIC and ICEA).
  - 105°C continuous operating temperature.
  - 140°C emergency rating.
  - 250°C short circuit rating.
  - Excellent corona resistance.
  - Exceptional resistance to "treeing".
  - Moisture resistant.
  - Resistant to most oils, acids, and alkalis.
  - Sunlight resistant.
  - Improved temperature rating.
- Production testing and associated frequency to be performed in accordance with ICEA S-108-720, latest edition.
- 550 or 650kV BIL, respectively.

### Design Options:

- Additional conductor sizes.
- Filled Strand conductors.
- Tinned copper tapes and wires.
- Product identification via colored jackets.

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## Product Data

### Section 2: Sheet 55

Catalog Number	Conductor size AWG or kcmil	Approx. Dia. over Insulation (in.)	Approx. Dia. over Screen (in.)	Jacket Thickness - mils	Approx. O.D. - Inches	Approx. Net Weight lbs./1000'	Approx. Ship Weight lbs./1000'	Ampacities (1) Direct Burial	Ampacities (1) Underground Duct	Conduit Size (2)
<b>115kV Copper Conductors 800 mils Okoguard HV Insulation</b>										
108-25-3234	750	2.61	2.71	140	3.02	5745	6505	921	840	5
108-25-3236	1000	2.75	2.85	140	3.16	6720	7640	1075	979	5
108-25-3239	1250	2.95	3.05	140	3.35	8450	9380	1214	1105	5
108-25-3241	1500	3.07	3.17	140	3.48	8860	9790	1325	1206	5
108-25-3243	1750	3.24	3.34	140	3.65	10035	11100	1462	1303	5
108-25-3245	2000	3.34	3.44	140	3.75	11000	12100	1507	1384	6
108-25-3247	2250	3.46	3.56	140	3.87	11900	13500	1586	1457	6
108-25-3249	2500	3.53	3.63	140	3.93	12900	14500	1651	1517	6
<b>115kV Aluminum Conductors 800 mils Okoguard HV Insulation</b>										
128-25-3235	750	2.68	2.78	140	3.09	4295	4770	733	667	5
128-25-3237	1000	2.83	2.93	140	3.24	4795	5450	862	716	5
128-25-3239	1250	2.95	3.05	140	3.35	5240	5890	973	884	5
128-25-3241	1500	3.07	3.17	140	3.48	5710	6360	1073	965	5
128-25-3243	1750	3.24	3.34	140	3.65	6250	7275	1166	1053	5
128-25-3245	2000	3.34	3.44	140	3.75	6675	7755	1245	1142	6
128-25-3247	2250	3.43	3.53	140	3.84	7075	8625	1318	1209	6
128-25-3249	2500	3.53	3.63	140	3.94	7500	9050	1387	1272	6
128-25-3251	2750	3.64	3.74	140	4.05	7940	9490	1448	1329	6

Okonite's web site, [www.okonite.com](http://www.okonite.com) contains the most up to date information.

#### (1) Ampacities Conditions

Ampacities are calculated using the Neher-McGrath methods of estimating the steady-state temperature of electrical power cables with the configurations shown.

#### Duct Bank:

115kV & 138kV 750-2750 kcmil

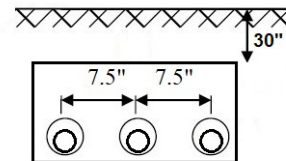
Configuration: 3 single cables in geometry shown.

Single circuit underground duct with 7 1/2" flat spacing on center.

Single duct bank, 30" to top of duct bank, 75% Load Factor, 60°C-cm/W (RHO) concrete.

Ambient temperature of 20°C and soil thermal resistivity (RHO) of 90°C-cm/W.

All sizes are calculated based on shields being multi-point grounded.



#### Direct Burial:

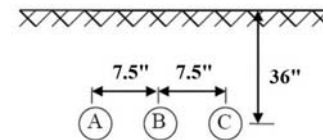
115kV & 138kV 750-2750 kcmil

Configuration: 3 single cables in geometry shown.

Single circuit directly buried 36" deep underground with 7 1/2" flat spacing on center.

75% Load Factor, ambient temperature of 20°C and soil thermal resistivity (RHO) of 90°C-cm/W.

All sizes are calculated based on shields being multi-point grounded.



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

(2) Recommended size of rigid nonmagnetic or nonmetallic conduit for a single conductor based on 53% maximum fill.

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<b>138kV Copper Conductors 850 mils Okoguard HV Insulation</b>										
108-26-3234	750	2.71	2.81	140	3.12	5990	6755	916	836	5
108-26-3236	1000	2.86	2.96	140	3.27	7010	7945	1069	975	5
108-26-3239	1250	3.05	3.15	140	3.46	8140	9075	1207	1073	5
108-26-3241	1500	3.18	3.28	140	3.59	9145	10200	1318	1201	5
108-26-3243	1750	3.35	3.45	140	3.75	10300	11400	1415	1288	5
108-26-3245	2000	3.44	3.54	140	3.85	11300	12900	1499	1378	6
108-26-3247	2250	3.56	3.66	140	3.97	13000	14600	1577	1450	6
108-26-3249	2500	3.63	3.73	140	4.04	13300	14800	1642	1510	6
<b>138kV Aluminum Conductors 850 mils Okoguard HV Insulation</b>										
128-26-3235	750	2.78	2.88	140	3.19	4550	5190	729	665	5
128-26-3237	1000	2.93	3.03	140	3.34	5060	5715	857	780	5
128-26-3239	1250	3.05	3.15	140	3.46	5515	6165	968	881	5
128-26-3241	1500	3.18	3.28	140	3.59	5995	6695	1067	972	5
128-26-3243	1750	3.35	3.45	140	3.75	6550	7625	1158	1053	5
128-26-3245	2000	3.44	3.54	140	3.85	6985	8535	1237	1127	5
128-26-3247	2250	3.53	3.63	140	3.94	7390	8935	1310	1204	6
128-26-3249	2500	3.63	3.73	140	4.04	7820	9370	1379	1267	6

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#### Duct Bank:

115kV & 138kV 750-2750 kcmil

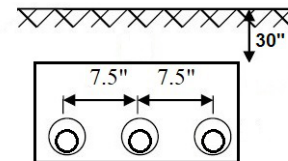
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Single circuit underground duct with 7 1/2" flat spacing on center.

Single duct bank, 30" to top of duct bank, 75% Load Factor, 60°C-cm/W (RHO) concrete.

Ambient temperature of 20°C and soil thermal resistivity (RHO) of 90°C-cm/W.

All sizes are calculated based on shields being multi-point grounded.



#### Direct Burial:

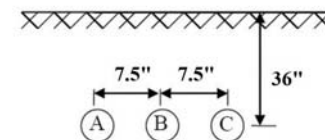
115kV & 138kV 750-2750 kcmil

Configuration: 3 single cables in geometry shown.

Single circuit directly buried 36" deep underground with 7 1/2" flat spacing on center.

75% Load Factor, ambient temperature of 20°C and soil thermal resistivity (RHO) of 90°C-cm/W.

All sizes are calculated based on shields being multi-point grounded.



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

(2) Recommended size of rigid nonmagnetic or nonmetallic conduit for a single conductor based on 53% maximum fill.