

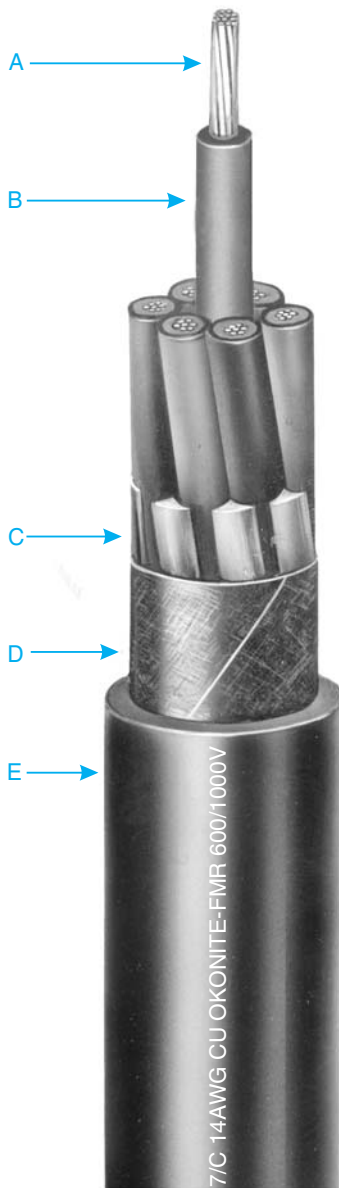


Okonite-FMR® Okolon® TS-CPE UL Type TC/TC-ER (XHH/XHHW-2)

600/1000V Power and Control Tray Cable

Multiple Copper Conductors With or Without
Grounding Conductor/90°C Wet or Dry Rating

For Cable Tray Use - Sunlight Resistant - For Direct Burial



- A Stranded Copper Conductors
- B Okonite-FMR Insulation
- C Fillers, as necessary
- D Binder Tape
- E Black Okolon TS-CPE Jacket

Insulation

Okonite-FMR is Okonite's trade name for its heat, moisture, flame and chemical resistant, mechanically rugged ethylene-propylene insulating compound.

The single conductors are color coded with solid and tracer colors as required for proper identification.

The properties of Okonite-FMR insulation substantially enhance the well known features of ethylene-propylene rubber insulations.

Overall Jacket

The overall Okolon TS-CPE jacket is thermoset chlorniated polyethylene compound. This combination construction assures circuit integrity because of its high mechanical strength and excellent resistance to moisture, ozone, and most chemicals.

Applications

Okonite-FMR Okolon TS-CPE Type TC or TC-ER tray cable is permitted for use on power, lighting, control, and signal circuits; indoors or outdoors; in cable trays, raceways, direct burial in the ground, or where supported in outdoor locations by a messenger wire; for Class 1 circuits as permitted in Article 725 of the NEC; and in cable trays in Class I, Division 2 hazardous locations in industrial establishments where the conditions of maintenance and supervision assure that only qualified persons will service the installation.

Cables Marked TC-ER may also be used between a cable tray and the utilization equipment or device, when installed in accordance with NEC 336.10(7).

Specifications

Conductors: Uncoated soft copper per ASTM B-3. Sizes smaller than #8 are compress stranded per ASTM B-8. Sizes #8 and larger are compact stranded per ASTM B-496.

Insulation: Okonite-FMR meets or exceeds requirements of UL 1581, ICEA S-73-532 (NEMA WC57) and ICEA S-95-658 NEMA WC70 Type II insulation.

Color Coding: Base colors and tracers as shown on reverse of Data Sheet, and for sizes #8 AWG and larger, black conductors with surface printing of numbers per ICEA S-73-532 NEMA/WC57 Method 4.

Grounding Conductor: Where indicated, bare or green insulated stranded copper per ASTM B-8 for sizes #8 AWG and smaller, compact round for sizes larger than #8 AWG per ASTM B-496 and in accordance with NEC Table 250.122.

Assembly: Conductors cabled in accordance with UL 1277 using fillers, as necessary, with a cable tape overall.

Overall Jacket: Complies with UL 1277. The Okolon TS-CPE compound meets or exceeds the requirements of UL 1581. UL Listed as Type TC or TC-ER cable with a sunlight resistant jacket and for direct burial.

Product Features

- For cable tray use.
- For direct burial.
- Sunlight resistant.
- Insulated conductors are UL rated XHH/XHHW-2, cUL rated RW75/RW90, VW-1, PR I, and -40°C.
- Flame retardant - passes the vertical tray flame test requirements of IEEE 383-1974 and 1202/FT4, UL 1277 ICEA T-29-520(210,000 BTU/hr.).
- UL listed for cable tray use.
- 90°C continuous rating in wet or dry locations
- 130°C emergency overload rating
- 250°C short circuit rating.
- Okonite-FMR Okolon TS-CPE Type TC or TC-ER cable are quality control inspected to meet or exceed applicable industry standards.
- Resistant to moisture and most chemical atmospheres.
- Thermal stability at elevated temperatures.
- Flexible, easy to install and terminate.
- Mechanically rugged.
- High dielectric strength.
- Small diameter, lightweight.
- Minimum installation temperature of -31°F or -35°C.

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For Cable Tray Use - Sunlight Resistant -For Direct Burial

Product Data Section 4: Sheet 6



Catalog Number	Conductor Size AWG/kcmil	Number of Conductors	UL TC TYPE	Insulation Thickness - mils	Jacket Thickness - mils	Jacket Thickness - mils	Approx. O.D. - mm	Approx O.D. - Inches	Cross-Sectional Area (sq. in.)†	Approx. Net Weight lbs./1000'	Approx. Ship Weight lbs./1000'	90°C Wet or Dry NEC Ampacity (1)*	75°C Wet NEC Ampacity*		
UL TYPE: TC-ER															
202-10-2202	14(7X)	2	TC	30	45	1.14	0.39	9.8	0.12	95	115	15	15		
202-10-2203		3	TC-ER		45	1.14	0.41	10.3	0.13	115	135	15	15		
202-10-2204		4	TC-ER		45	1.14	0.44	11.3	0.15	140	160	15	15		
202-10-2205		5	TC-ER		45	1.14	0.48	12.2	0.18	165	185	15	15		
202-10-2207		7	TC-ER		45	1.14	0.52	13.3	0.21	200	220	15	14		
202-10-2209		9	TC-ER		60	1.52	0.64	16.2	0.32	290	310	15	14		
202-10-2212		12	TC-ER		60	1.52	0.71	18.1	0.40	370	390	12	10		
202-10-2219		19	TC-ER		60	1.52	0.83	21.0	0.54	510	530	12	10		
202-10-2237		37	TC-ER		80	2.03	1.14	29.1	1.03	985	1005	10	8		
202-10-2402		12(7X)	2		TC	30	45	1.14	0.42	10.7	0.14	120	140	20	20
202-10-2403			3		TC-ER		45	1.14	0.45	11.3	0.16	145	165	20	20
202-10-2404			4		TC-ER		45	1.14	0.49	12.4	0.19	180	200	20	20
202-10-2405	5		TC-ER	45	1.14		0.53	13.5	0.22	220	240	20	20		
202-10-2407	7		TC-ER	60	1.52		0.61	15.5	0.29	295	315	20	17		
202-10-2409	9		TC-ER	60	1.52		0.70	17.9	0.39	390	410	20	17		
202-10-2412	12		TC-ER	60	1.52		0.79	20.0	0.49	500	520	15	12		
202-10-2419	19		TC-ER	80	2.03		0.96	24.4	0.72	745	765	15	12		
202-10-2437	37		TC-ER	80	2.03		1.27	32.3	1.27	1355	1375	12	10		
202-10-2502	10(7X)		2	TC	30		45	1.14	0.47	11.9	0.17	160	180	30	30
202-10-2503			3	TC-ER			45	1.14	0.50	12.7	0.19	200	220	30	30
202-10-2504			4	TC-ER			60	1.52	0.58	14.6	0.26	270	290	30	28
202-10-2505		5	TC-ER	60		1.52	0.63	15.9	0.31	325	345	30	28		
202-10-2507		7	TC-ER	60		1.52	0.68	17.3	0.36	405	425	28	24		
202-10-2509		9	TC-ER	60		1.52	0.79	20.1	0.49	540	560	28	24		
202-10-2512		12	TC-ER	80		2.03	0.93	23.6	0.68	745	765	20	17		

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

Equipment Grounding Conductor: Any conductor in TC rated cables may be permanently re-identified during installation as the equipment grounding conductor in accordance with Section 250.119(B) of the NEC.

† **Cross-sectional** area for calculation of cable tray fill in accordance with Section 392.22 of the NEC.

(1) Ampacities

Ampacities are based on Table 310.16 of the National Electrical Code for these 90°C rated conductors at an ambient temperature of 30°C. The 75°C wet column is provided for additional information.

The ampacities shown apply to open runs of cable, installation in any approved raceway, direct burial in the earth, or as aerial cable on a messenger. Derating for more than three current carrying conductors within a raceway is in accordance with NEC Section 310.15(C)(1).

The ampacities shown also apply to cables installed in cable tray in accordance with NEC Section 392.80.

*Current limited to 15, 20 and 30 amps per Section 240.4(D) of the NEC for #14, #12 and #10 AWG, respectively.

Product Data

Section 4: Sheet 6

Catalog Number	Conductor Size AWG/kcmil	UL TC TYPE	Number of Conductors	Insulation Thickness - mils	Grounding Conductor AWG*	Jacket Thickness - mils	Jacket Thickness - mils	Approx. O.D. - mm	Approx. O.D. - Inches	Cross-Sectional Area (sq.in.)*	Approx. Net Weight lbs./1000'	Approx. Ship Weight lbs./1000'	90°C Wet or Dry NEC Ampacity (1)	75°C Wet NEC Ampacity (1)
112-10-2842	8(7X)	TC-ER	3	—	60	1.52	0.65	16.5	0.33	323	346	55	50	
112-10-2844			3	10*	60	1.52	0.68	17.3	0.36	396	419	55	50	
112-10-2845			4	—	60	1.52	0.71	18.0	0.40	414	443	45	40	
112-10-2847			4	10*	60	1.52	0.71	18.0	0.40	443	472	45	40	
112-10-2852	6(7X)	TC-ER	3	—	60	1.52	0.73	18.5	0.42	448	477	75	65	
112-10-2854			3	8*	60	1.52	0.73	18.5	0.42	536	565	75	65	
112-10-2855			4	—	60	1.52	0.80	20.3	0.50	565	594	60	52	
112-10-2857			4	8*	60	1.52	0.82	20.3	0.50	662	697	60	52	
112-10-2862	4(7X)	TC	3	—	60	1.52	0.82	21.8	0.53	633	668	95	85	
112-10-2864		TC-ER	3	8*	60	1.52	0.82	21.8	0.53	732	767	95	85	
112-10-2865		TC	4	—	80	2.03	0.94	23.9	0.69	851	904	76	68	
112-10-2867		TC-ER	4	8*	80	2.03	0.95	24.1	0.71	936	989	76	68	
112-10-2872	2(7X)	TC	3	—	80	2.03	0.98	24.9	0.75	994	1063	130	115	
112-10-2874		TC-ER	3	6	80	2.03	0.98	24.9	0.75	1145	1214	130	115	
112-10-2875		TC	4	—	80	2.03	1.08	27.4	0.92	1227	1307	104	92	
112-10-2877		TC-ER	4	6	80	2.03	1.08	27.4	0.92	1276	1356	104	92	
112-10-2882	1(19X)	TC	3	—	80	2.03	1.09	27.7	0.93	1226	1338	150	130	
112-10-2884		TC-ER	3	6	80	2.03	1.09	27.7	0.93	1398	1478	150	130	
112-10-2885		TC	4	—	80	2.03	1.20	30.5	1.13	1582	1694	120	104	
112-10-2887		TC-ER	4	6	80	2.03	1.21	30.7	1.15	1662	1787	120	104	
112-10-2892	1/0(19X)	TC	3	—	80	2.03	1.17	29.7	1.08	1501	1615	170	150	
112-10-2894		TC-ER	3	6	80	2.03	1.17	29.7	1.08	1680	1805	170	150	
112-10-2895		TC	4	—	80	2.03	1.29	32.8	1.31	1917	2059	136	120	
112-10-2897		TC-ER	4	6	80	2.03	1.29	32.8	1.31	1986	2128	136	120	
112-10-2902	2/0(19X)	TC	3	—	80	2.03	1.26	30.0	1.25	1812	1954	195	175	
112-10-2904		TC-ER	3	6	80	2.03	1.26	30.0	1.25	2017	2159	195	175	
112-10-2905		TC	4	—	80	2.03	1.39	35.3	1.52	2356	2508	156	140	
112-10-2907		TC-ER	4	6	80	2.03	1.39	35.3	1.52	2420	2607	156	140	
112-10-2922	4/0(19X)	TC	3	—	80	2.03	1.48	37.6	—	2697	2884	260	230	
112-10-2924		TC-ER	3	4	80	2.03	1.49	37.8	—	2903	3090	260	230	
112-10-2925		TC	4	—	80	2.03	1.63	41.4	—	3466	3717	208	184	
112-10-2927		TC-ER	4	4	80	2.03	1.63	41.4	—	3564	4815	208	184	
112-10-2928	250(37X)	TC	3	—	80	2.03	1.62	41.1	—	2952	3095	290	255	
112-10-2929		TC-ER	3	4	80	2.03	1.62	41.1	—	3082	3259	290	255	
112-10-2930		TC	4	—	110	2.79	1.86	47.2	—	3965	4231	232	185	
112-10-2931		TC-ER	4	4	110	2.79	1.86	47.2	—	4093	4359	232	185	
112-10-2932	350(37X)	TC	3	—	110	2.79	1.89	48.0	—	4104	4370	350	310	
112-10-2933		TC-ER	3	3	110	2.79	1.89	48.0	—	4207	4536	350	310	
112-10-2934		TC	4	—	110	2.79	2.08	52.8	—	5334	5681	280	248	
112-10-2935		TC-ER	4	3	110	2.79	2.08	52.8	—	5494	5841	280	248	
112-10-2936	500(37X)	TC	3	—	110	2.79	2.14	54.4	—	5658	6005	430	380	
112-10-2937		TC-ER	3	2	110	2.79	2.14	54.4	—	5861	6208	430	380	
112-10-2938		TC	4	—	110	2.79	2.37	60.2	—	7352	7911	344	304	
112-10-2939		TC-ER	4	2	110	2.79	2.37	60.2	—	7560	8119	344	304	
112-10-2940	750(61X)	TC	3	—	110	2.79	2.57	65.3	—	8331	8958	535	475	
112-10-2941		TC-ER	3	1	110	2.79	2.57	65.3	—	8603	9930	535	475	
112-10-2942		TC	4	—	140	3.56	2.91	73.9	—	11080	11842	428	380	
112-10-2943		TC-ER	4	1	140	3.56	2.91	73.9	—	11343	12105	428	380	
112-10-2944	1000(61X)	TC	3	—	140	3.56	2.94	74.4	—	11078	11840	615	345	
112-10-2945		TC-ER	3	1/0	140	3.56	2.94	74.4	—	11463	12396	615	345	
112-10-2946		TC	4	—	140	3.56	3.26	82.8	—	14455	15388	492	430	
112-10-2947		TC-ER	4	1/0	140	3.56	3.26	82.8	—	14894	15827	492	430	

* Grounds may be split. Ground conductors marked with an asterisk are green insulated.

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Product Data Section 4: Sheet 6

Conductor Color Coding Sequence — Sizes 14, 12 & 10 AWG

Conductor Number	Base Color	Tracer Color
1	Black	
2	Red	
3	Blue	
4	Orange	
5	Yellow	
6	Brown	
7	Red	Black
8	Blue	Black
9	Orange	Black
10	Yellow	Black
11	Brown	Black
12	Black	Red
13	Blue	Red
14	Orange	Red
15	Yellow	Red
16	Brown	Red
17	Black	Blue
18	Red	Blue
19	Orange	Blue
20	Yellow	Blue
21	Brown	Blue
22	Black	Orange
23	Red	Orange
24	Blue	Orange
25	Yellow	Orange
26	Brown	Orange
27	Black	Yellow
28	Red	Yellow
29	Blue	Yellow
30	Orange	Yellow
31	Brown	Yellow
32	Black	Brown
33	Red	Brown
34	Blue	Brown
35	Orange	Brown
36	Yellow	Brown
37	Black	

Color Coding per ICEA Method 1, E-2
Sizes 8 AWG and larger:
Surface Printing of Numbers per ICEA Method 4

Special Order: Any or all of the following conductors may be added when specifically requested by the customer to meet their specific application requirements. These conductor codings comply with UL and NEC requirements.

<u>Purpose</u>	<u>Base Color</u>	<u>Tracer Color</u>
Equipment Grounding	Uninsulated Green Green	1 or more continuous yellow stripes
Grounded	White White White White White White	Black continuous stripe Red continuous stripe Blue continuous stripe Orange continuous stripe Brown continuous stripe Numeric Printing