such that ground faults will be cleared as rapidly as possible but, in any case, within 1 minute. These cables are applicable to cable installations that are on grounded systems and shall be permitted to be used on other systems provided the above clearing requirements are met in completely de-energizing the faulted section.

(2) 133 Percent Insulation Level. Cables shall be permitted to be applied in situations where the clearing time requirements of the 100 percent level category cannot be met and the faulted section will be de-energized in a time not exceeding 1 hour. Cable shall be permitted to be used in 100 percent insulation level applications where the installation requires additional insulation.

(3) 173 Percent Insulation Level. Cables shall be permitted to be applied under all of the following conditions:

(1) In industrial establishments where the conditions of maintenance and supervision ensure only qualified persons service the installation
(2) Where the fault clearing time requirements of the 133 percent level category cannot be met
(3) Where an orderly shutdown is required to protect equipment and personnel
(4) Where the faulted section will be de-energized in an orderly shutdown

Cables shall be permitted to be used in 100 percent or 133 percent insulation level applications where the installation requires additional insulation.

Informational Note: See UL 1072, *Medium-Voltage Power Cable*, ANSI/ICEA S-93-639, *American National Standard for 5-46kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy*, and ICEA S-94-649 2013, *Standard for Concentric Neutral Cables Rated 5 through 46 kV for Medium Voltage Cables*.

315.12 Conductors.

(A) Minimum Size of Conductors. The minimum size of conductors shall be as shown in Table 315.12(A), except as permitted elsewhere in this *Code*.

(B) Conductor Material. Conductors shall be of aluminum, copper-clad aluminum, or copper unless otherwise specified.

Copper-clad aluminum conductors are manufactured so that copper forms a minimum of 10 percent of the cross-sectional area of a solid conductor or of each strand of a stranded conductor.

(C) Stranded Conductors. Where installed in raceways, conductors not specifically permitted or required elsewhere in this *Code* to be solid shall be stranded.

TABLE 315.10(A) *Conductor Application and Insulation Rated 2001 Volts and Higher*

Trade Name	Type Letter	Maximum Operating Temperature	Application Provision	Insulation	Outer Covering
Medium voltage solid dielectric	MV-90 MV-105*	90°C 105°C	Dry or wet locations	Thermoplastic or thermosetting	Jacket, sheath, or armor

*Where design conditions require maximum conductor temperatures above 90°C.

TABLE 315.10(B) *Thickness of Insulation and Jacket for Nonshielded Solid Dielectric Insulated Conductors Rated 2001 Volts to 5000 Volts*

	Dry Locations, Single Conductor						Wet or Dry Locations					
			With Jacket				Single Conductor					
	Without Jacket Insulation		Insulation		Jacket		Insulation		Jacket		Multiconductor Insulation*	
Conductor Size (AWG or kcmil)	mm	mils	mm	mils	mm	mils	mm	mils	mm	mils	mm	mils
8	2.79	110	2.29	90	0.76	30	3.18	125	2.03	80	2.29	90
6	2.79	110	2.29	90	0.76	30	3.18	125	2.03	80	2.29	90
4–2	2.79	110	2.29	90	1.14	45	3.18	125	2.03	80	2.29	90
1–2/0	2.79	110	2.29	90	1.14	45	3.18	125	2.03	80	2.29	90
3/0–4/0	2.79	110	2.29	90	1.65	65	3.18	125	2.41	95	2.29	90
213–500	3.05	120	2.29	90	1.65	65	3.56	140	2.79	110	2.29	90
501–750	3.30	130	2.29	90	1.65	65	3.94	155	3.18	125	2.29	90
751–1000	3.30	130	2.29	90	1.65	65	3.94	155	3.18	125	2.29	90
1001–1250	3.56	140	2.92	115	1.65	65	4.32	170	3.56	140	2.92	115
1251–1500	3.56	140	2.92	115	2.03	80	4.32	170	3.56	140	2.92	115
1501–2000	3.56	140	2.92	115	2.03	80	4.32	170	3.94	155	3.56	140

*Under a common overall covering such as a jacket, sheath, or armor.