

Temperature Rating of Conductor Insulation

The Law

The Code of Federal Regulations (CFR) 183.425 Conductors

(b) Except for intermittent surges each conductor must not carry a current greater than that specified for the conductor's gauge and temperature rating.

(c) For conductors in engine spaces, amperages must be corrected by the appropriate correction factor in Note 1.

Due to engine heat, the ambient temperature in engine spaces is usually higher than in other spaces of the boat. Wiring in and passing through engine spaces must be able to operate at these higher ambient temperatures. The ampacity values are based on an ambient temperature of 86°F / 30°C which is considered reasonable for use on boats except in engine spaces. The correction factors in Note 1 converts the ampacities to acceptable values in an ambient temperature of 122°F / 50°C. This higher temperature has been selected as satisfactory for engine spaces. Note 1 is supplied to eliminate the need for calculating the corrections. The values are already corrected.

Conductor Size AWG	Ampacity Outside of Engine Space	Ampacity Inside of Engine Space (Note 1)
18	20	17
16	25	21
14	35	30
12	45	38
10	60	51
8	80	68
6	120	102
4	160	136
3	180	153
2	210	178
1	245	208
1/0	285	242
2/0	330	280
3/0	385	327
4/0	445	378

*De-rating for engine space is 0.85 for 221°F / 105°C rated wire.