

## Appendix E. Conductors for general wiring according to NFPA 70

In the table below types and applications for conductors for general wiring are specified.

Table E.1. Conductors for general wiring according to Art. 310 of NFPA 70 (NEC) – Ed. 2020 - Table 310.4(A)

Trade Name	Type	Maximum operating temperature	Application	Insulation	Size [AWG/kcmil]	Outer Covering
Fluorinated ethylene propylene	FEP or FEPB	90°C	Dry and damp locations	Fluorinated ethylene propylene	14÷2	None
		200°C	Dry locations special applications	Fluorinated ethylene propylene	14÷8	Glass braid
					6÷2	Glass or other suitable braid material
Mineral insulation (metal sheathed)	MI	90°C	Dry and wet locations	Magnesium oxide	18÷500	Copper or alloy steel
		250°C	For special applications			
Moisture-, heat-, and oil-resistant thermoplastic	MTW	60°C	Machine tool wiring in wet locations	Flame-retardant, moisture-, heat-, and oil-resistant thermoplastic	22÷1000	None or Nylon jacket or equivalent
		90°C	Machine tool wiring in dry locations Informational Note: See NFPA 79.			
Paper		85°C	For underground service conductors, or by special permission	Paper		Lead sheath
Perfluoro-alkoxy	PFA	90°C	Dry and damp locations	Perfluoro-alkoxy	14÷4/0	None
		200°C	Dry locations special applications			
Perfluoro-alkoxy	PFAH	250°C	Dry locations only. Only for leads within apparatus or within raceways connected to apparatus (nickel or nickel-coated copper only)	Perfluoro-alkoxy	14÷4/0	None
Thermoset	RHH	90°C	Dry and damp locations		14÷2000	Moisture-resistant, flame-retardant, nonmetallic covering
Moisture-resistant thermoset	RHW	75°C	Dry and wet locations	Flame-retardant, moisture-resistant thermoset	14÷2000	Moisture-resistant, flame-retardant, nonmetallic covering
	RHW-2	90°C				
Silicone	SA	90°C	Dry and damp locations	Silicone rubber	14÷2000	Glass or other suitable braid material
		200°C	For special application			
Thermoset	SIS	90°C	Switchboard and switchgear wiring only	Flame-retardant thermoset	14÷4/0	None
Thermoplastic and fibrous outer braid	TBS	90°C	Switchboard and switchgear wiring only	Thermoplastic	14÷4/0	Flame-retardant, nonmetallic covering
Extended polytetrafluoro-ethylene	TFE	250°C	Dry locations only. Only for leads within apparatus or within raceways connected to apparatus, or as open wiring (nickel or nickel-coated copper only)	Extruded polytetrafluoro-ethylene	14÷4/0	None
Heat-resistant thermoplastic	THHN	90°C	Dry and damp locations	Flame-retardant, heat-resistant thermoplastic	14÷1000	Nylon jacket or equivalent
Moisture- and heat-resistant thermoplastic	THHW	75°C	Wet location	Flame-retardant, moisture- and heat-resistant thermoplastic	14÷2000	None
		90°C	Dry location			

Trade Name	Type	Maximum operating temperature	Application	Insulation	Size [AWG/kcmil]	Outer Covering
Moisture- and heat-resistant thermoplastic	THW	75°C	Dry and wet locations	Flame-retardant, moisture- and heat-resistant thermoplastic	14÷2000	None
		90°C	Special applications within electric discharge lighting equipment. Limited to 1000 open-circuit volts or less. (Size 14-8 only as permitted in 410.68.)			
	THW-2	90°C	Dry and wet locations			
Moisture- and heat-resistant thermoplastic	THWN	75°C	Dry and wet locations	Flame-retardant, moisture- and heat-resistant thermoplastic	14÷1000	Nylon jacket or equivalent
	THWN-2	90°C				
Moisture-resistant thermoplastic	TW	60°C	Dry and wet locations	Flame-retardant, moisture-resistant thermoplastic	14÷2000	None
Underground feeder and branch-circuit cable - single conductor (for Type UF cable employing more than one conductor, see Article 340).	UF	60°C	See Article 340.	Moisture-resistant	14÷4/0	Integral with insulation
		75°C		Moisture- and heat-resistant		
Underground service-entrance cable - single conductor (for Type USE cable employing more than one conductor, see Article 338).	USE	75°C	See Article 338.	Heat- and moisture-resistant	14÷2000	Moisture-resistant nonmetallic covering (See 338.2.)
	USE-2	90°C	Dry and wet locations			
Thermoset	XHH	90°C	Dry and damp locations	Flame-retardant thermoset	14÷2000	None
Thermoset	XHHN	90°C	Dry and damp locations	Flame-retardant thermoset	14÷1000	Nylon jacket or equivalent
Moisture-resistant thermoset	XHHW	90°C	Dry and damp locations	Flame-retardant, moisture-resistant thermoset	14÷2000	None
		75°C	Wet locations			
Moisture-resistant thermoset	XHHW-2	90°C	Dry and wet locations	Flame-retardant, moisture-resistant thermoset	14÷2000	None
Moisture-resistant thermoset	XHWN	75°C	Dry and wet locations	Flame-retardant, moisture-resistant thermoset	14÷1000	Nylon jacket or equivalent
	XHWN-2	90°C				
Modified ethylene tetrafluoro-ethylene	Z	90°C	Dry and damp locations	Modified ethylene tetrafluoro-ethylene	14÷4/0	None
		150°C	Dry locations special applications			
Modified ethylene tetrafluoro-ethylene	ZW	75°C	Wet locations	Modified ethylene tetrafluoro-ethylene	14÷2	None
		90°C	Dry and damp locations			
		150°C	Dry locations — special applications			
	ZW-2	90°C	Dry and wet locations			