

Appendix G. Wires and cables marking according to UL

Notes used in Table G.1

- (A) CCN is the Category Control Number as defined by UL.
- (B) Indicates whether the UL Mark ("UL" in a circle) is required (R), optional (O) or prohibited (P) on the product.
- (C) Temperature rating for the wire and cable when exposed to water or moisture such as in wet and damp locations.
- (3) Flexible Cords evaluated for water resistance have a "W" in the Type designation, i.e. Type SJTW. The terms "water resistant" or "water resistant 60°C" may also be marked in addition to the "W" designation.
- (4) The wire or cable has been investigated for the temperature rating marked on the product, tag, reel or smallest unit container.
- (6) Cable evaluated for wet-location use is marked "WET-LOCATIONS CABLE" or "WET-LOCS CABLE.". Cable containing conductors evaluated for wet-location use may be marked, but such marking is not required.
- (7) 250°C for special applications in locations where environmental conditions require operation at above 90°C temperature. Temperatures of fittings are limited to 85°C in dry locations and 60°C in wet locations.
- (8) Wire or cable evaluated for wet-location use is marked "60°C WET" or "75°C WET".
- (9) Temperature rating may be indicated on the product by colored marker threads located under either the insulation or separator.
- (10) The cable is marked with predefined temperature ratings or codes (example: marking with temperature rating "60°C dry 60°C wet" or marking with code "BC-1W1").
- (12) 90°C dry and damp location. 150°C dry locations for special applications in locations where environmental conditions require maximum conductor operating temperature ranges above 90°C.
- (13) 200°C in dry locations for special applications.
- (14) The temperature rating of the cable is the rating marked on the cable or implied by the conductor type in the cable.
- (15) Indicates minimum temperature rating. Suitable for use at higher temperatures if marked on the cable or cord. The higher temperatures (above 60°C) only apply to dry applications.
- (16) May be rated 600 volts when employing 45-mil insulation.
- (17) Cable evaluated for wet location use is marked "wet" or "wet location".
- (22) Type designation indicates suitability for use in accordance with the appropriate NEC Article, with respect to voltage and power limitations.
- (24) Rating is indicated by number in the Type designations, "-1" defines 300V, "-2" defines 600V.
- (27) Some Mineral-Insulated cable may be rated 300V for use in Class 1 remote control and signaling circuits not exceeding 300V.
- (30) A product evaluated for outdoor use has a "W" in its Type designation (example: SJTW).
- (32) Cable evaluated for outdoor use is marked "outdoor" or "outdoor use".
- (33) Cable evaluated for outdoor use is marked "SUNLIGHT RESISTANT" or "SUN. RES." plus "60°C WET" or "75°C WET".
- (35) A product evaluated for sunlight resistance is marked "SUNLIGHT RESISTANT", "SUN. RES.", or "SR".
- (40) When evaluated for use in cable trays, the product is marked "for cable tray use," "for CT use" or "for use in cable trays".
- (45) A product evaluated for 60°C oil resistance is marked "OIL RESISTANT I", "OIL RES I", "OIL RESISTANT", or "PR1". A product evaluated for 75°C oil resistance is marked "OIL RESISTANT II", "OIL RES II", or "PR2".
- (46) A product evaluated for 60°C oil resistance and for gasoline resistance is marked "GASOLINE AND OIL RESISTANT I", or "GR1". Similarly, for 75°C oil and for gasoline resistance, the product is marked "GASOLINE AND OIL RESISTANT II" or "GR2".
- (47) When evaluated for gasoline resistance only, the insulated conductors are marked "GASOLINE RESISTANT". If this marking appears on the outer covering of the cable, "GASOLINE RESISTANT" is followed by "CDRS," "CONDS" or "CONDUCTORS".
- (50) When evaluated for direct burial use, the product is marked "FOR DIRECT BURIAL," "DIRECT BURIAL," "DIR BUR" or "DIR BURIAL".
- (51) When evaluated, the product is marked "PUMP CABLE" or "SUBMERSIBLE PUMP CABLE".
- (70) "OO" indicates oil resistant insulation and jacket. "O" indicates oil resistant jacket only.

Table G.1. Wires and cables marking according to UL

Characteristic	Type	NEC article	CCN ^(a)	UL Mark ^(b)	Temperature Dry [°C]	Temperatur Wet ^(c) [°C]	Voltage [V]	Outdoor use	Sunlight Resistance	Cable Tray Use	Oil Resistance	Gasoline Resistance	Direct Burial	Submersible Pump Use
BUILDING WIRES	Thermoset insulation	RHH	310	ZKST	R	90	600/2000	-	(39)	(40)	(45)	(46)	-	-
	Thermoset insulation	RHW	310	ZKST	R	75	600/2000	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoset insulation	RHW	310	ZKST	R	90	600/2000	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoset insulation	RHW-2	310	ZKST	R	90 ⁽¹³⁾	600	-	-	(40)	-	-	-	-
	Thermoset insulation	SA, SF	310	ZKST	O	90	600	-	-	-	-	-	-	-
	Thermoset insulation	SIS	310	ZKST	R	90	600	-	(39)	(40)	(45)	(46)	-	-
	Thermoset insulation	XHH	310	ZKST	R	90	600	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoset insulation	XHHW	310	ZKST	R	90	600	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoset insulation	XHHW-2	310	ZKST	R	90	600	-	-	-	-	-	-	-
	Thermoplastic insulation	FEP, FEPB	310	ZLGR	R	90 ⁽¹³⁾	600	-	-	-	-	-	-	-
	Thermoplastic insulation	PFA	310	ZLGR	R	90 ⁽¹³⁾	600	-	-	-	-	-	-	-
	Thermoplastic insulation	PFAH	310	ZLGR	R	250	600	-	-	-	-	-	-	-
	Thermoplastic insulation	TBS	310	ZLGR	O	90	600	-	-	-	-	-	-	-
	Thermoplastic insulation	TFE	310	ZLGR	R	250	600	-	-	-	-	-	-	-
	Thermoplastic insulation	THHN	310	ZLGR	R	90	600	-	(39)	(40)	(45)	-	-	-
	Thermoplastic insulation	THHW	310	ZLGR	R	90	600	-	(39)	(40)	(45)	-	-	(51)
	Thermoplastic insulation	THW	310	ZLGR	R	75	600	-	(39)	(40)	(45)	-	-	(51)
	Thermoplastic insulation	THW-2	310	ZLGR	R	90	600	-	(39)	(40)	(45)	-	-	(51)
	Thermoplastic insulation	THWN	310	ZLGR	R	75	600	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoplastic insulation	THWN-2	310	ZLGR	R	90	600	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoplastic insulation	TW	310	ZLGR	R	60	600	-	(39)	(40)	(45)	(46)	-	(51)
	Thermoplastic insulation	Z	310	ZLGR	R	90 ⁽¹²⁾	600	-	-	-	-	-	-	-
	Thermoplastic insulation	ZW	310	ZLGR	R	90 ⁽¹²⁾	600	-	(39)	-	-	-	-	(51)
BUILDING CABLES	Armored	ACTH	320	AWEZ	O	75	600	-	-	(40)	-	-	-	-
	Armored	ACHH, ACTHH	320	AWEZ	O	90	600	-	-	-	-	-	-	-
	Flat cable	FC	322	GQKT	R	75 ⁽³⁾	300	-	-	-	-	-	-	-
	Flat conductor	FCC	324	IKKT	R	(4)	300/600	-	-	-	-	-	-	-
	Instrumentation Tray Cable	ITC	727	NYTT	R	(4)	(22)	-	Yes	Yes	-	-	(60)	-
	Metal-Clad	MC	330	PJAZ	R	(14)	600 / 2000	Yes	Yes	Yes	Yes	Yes	Yes	-
	Metal-Clad Hazardous Location	MC-HL	330	PJPP	R	(14)	600 / 2000	Yes	Yes	Yes	Yes	Yes	Yes	-

BUILDING CABLES	Characteristic	Type	NEC article	CCN ^(A)	UL Mark ^(B)	Temperature Dry [°C]	Temperature Wet ^(C) [°C]	Voltage [V]	Outdoor use	Sunlight Resistance	Cable Tray Use	Oil Resistance	Gasoline Resistance	Direct Burial	Submersible Pump Use
LOW VOLTAGE CABLES, FLEXIBLE CORD AND FIXTURE CABLES	Mineral Insulated Metal Sheathed Cable	MI	332	PPKV	O	90 ⁽⁷⁾	90 ⁽⁷⁾	600 ⁽²⁷⁾	Yes	⁽³⁵⁾	⁽⁴⁰⁾	Yes	Yes	Yes	-
	Power and Control Tray Cable	TC	336	QPOR	R	⁽¹⁴⁾	⁽⁸⁾	600 / 2000	-	⁽³⁵⁾	Yes	⁽⁴⁵⁾	⁽⁴⁶⁾	⁽⁵⁰⁾	-
	Flexible Cords	C, PD	400	ZJCZ	R	⁽⁴⁾	-	300 ⁽¹⁶⁾	-	-	-	-	-	-	-
	Flexible Cords	E, ETP, ETT	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-
	Flexible Cords	EO	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	Yes	-	-	-
	Flexible Cords	HPD	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-
	Flexible Cords	HPN	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	Yes	-	-	-
	Flexible Cords	HS, HSJ	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-
	Flexible Cords	HSQ, HSJO	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	Yes	-	-	-
	Flexible Cords	NISP-1, NISP-2	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-
	Flexible Cords	NISPE-1, NISPE-2	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-
	Flexible Cords	NISPT-1, NISPT-2	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-
	Flexible Cords	S, ST	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	600	⁽³⁰⁾	-	-	-	-	-	-
	Flexible Cords	SE	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	600	⁽³⁰⁾	-	-	-	-	-	-
	Flexible Cords	SEO	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	600	⁽³⁰⁾	-	-	Yes	-	-	-
	Flexible Cords	SJ, SJT	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	300	⁽³⁰⁾	-	-	-	-	-	-
	Flexible Cords	SJE	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	300	⁽³⁰⁾	-	-	-	-	-	-
	Flexible Cords	SJEO	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	300	⁽³⁰⁾	-	-	Yes	-	-	-
	Flexible Cords	SJO, SJOQ, SJTO, SJTOO	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	300	⁽³⁰⁾	-	-	Yes ⁽⁷⁰⁾	-	-	-
	Flexible Cords	SO, SOO, STO, STOO	400	ZJCZ	R	⁽⁴⁾	⁽³⁾	600	⁽³⁰⁾	-	-	Yes ⁽⁷⁰⁾	-	-	-
	Flexible Cords	SP-1, SP-2, SP-3, SRD, SRDT	400	ZJCZ	R	⁽⁴⁾	-	300	-	-	-	-	-	-	-

Characteristic	Type	NEC article	CCN ^(A)	UL Mark ^(B)	Temperature Dry [°C]	Temperature Wet ^(C) [°C]	Voltage [V]	Outdoor use	Sunlight Resistance	Cable Tray Use	Oil Resistance	Gasoline Resistance	Direct Burial	Submersible Pump Use
Flexible Cords	SPE-1, SPE-2, SPE-3, SRDE	400	ZJCZ	R	(4)	-	300	-	-	-	-	-	-	-
Flexible Cords		400	ZJCZ	R	(4)	-	600	(30)	-	-	-	-	-	-
Flexible Cords	SV, SVT	400	ZJCZ	R	(4)	-	300	-	-	-	-	-	-	-
Flexible Cords	SVE	400	ZJCZ	R	(4)	-	300	-	-	-	-	-	-	-
Flexible Cords	SVEO	400	ZJCZ	R	(4)	-	300	-	-	-	Yes	-	-	-
Flexible Cords	SVO, SVOO, SVTO, SVTOO	400	ZJCZ	R	(4)	-	300	-	-	-	Yes ⁽⁷⁰⁾	-	-	-
Flexible Cords	TPT, TS, TST	400	ZJCZ	R	(4)	-	300	-	-	-	-	-	-	-
Fixture Wire	KF-1, KF-2, KFF-1, KFF-2	402	ZIPR	O	200 ⁽⁹⁾	-	(24)	-	-	-	-	-	-	-
Fixture Wire	PAF	402	ZIPR	R	250 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	PAFF	402	ZIPR	R	150 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	PF, PGF	402	ZIPR	O	200 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	PFF, PGFF	402	ZIPR	O	150 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	PTF	402	ZIPR	R	250	-	600	-	-	-	-	-	-	-
Fixture Wire	PTFF	402	ZIPR	R	150	-	600	-	-	-	-	-	-	-
Fixture Wire	RFH-2, FFH-2	402	ZIPR	O	75 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	SF-1, SF-2	402	ZIPR	O	200 ⁽⁹⁾	-	(24)	-	-	-	-	-	-	-
Fixture Wire	SFF-1, SFF-2	402	ZIPR	O	150 ⁽⁹⁾	-	(24)	-	-	-	-	-	-	-
Fixture Wire	TF, TFF	402	ZIPR	R	60	-	600	-	-	-	(45)	(46)	-	-
Fixture Wire	RFHH-2, RFHH-3	402	ZIPR	R	90 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	TFN, TFFN	402	ZIPR	R	90 ⁽⁹⁾	-	600	-	-	-	(45)	(46)	-	-
Fixture Wire	XF, XFF	402	ZIPR	R	150 ⁽⁹⁾	-	300	-	-	-	-	-	-	-
Fixture Wire	ZF, ZFF	402	ZIPR	R	150 ⁽⁹⁾	-	600	-	-	-	-	-	-	-
Fixture Wire	ZHF	402	ZIPR	R	200 ⁽⁹⁾	-	600	-	-	-	-	-	-	-

SPECIAL PURPOSE WIRES AND CABLES

Characteristic	Type	NEC article	CCN ^(A)	UL Mark ^(B)	Temperature Dry [°C]	Temperature Wet ^(C) [°C]	Voltage [V]	Outdoor use	Sunlight Resistance	Cable Tray Use	Oil Resistance	Gasoline Resistance	Direct Burial	Submersible Pump Use
Boat Cable	-	-	BDFX	R	(10)	-	(10)	(25)	-	-	-	(45)	-	-
Bus Drop Cable	-	368	ZIMX	R	60 ⁽¹⁵⁾	(6)	600	(32)	-	-	(45)	-	-	-
Festoon Cable	-	610	ZIPF	R	60 ⁽¹⁵⁾	-	600	(32)	-	-	(45)	-	-	-
Flexible Motor Supply Cable	-	-	ZJFH	R	90	-	1000/2000	-	(35)	Yes	(45)	(47)	(50)	-
Heat-Resistant Wire	TGT, TGS, TMGT, KGS, KGT, TGGT, ITFL	-	ZNNA	O	(4)	-	300	-	(35)	(40)	Yes	(46)	-	-
Machine Tool Wires	MTW	670	ZKHZ	R	90	-	600	-	-	-	-	-	-	-
Pendant Cable	-	610	ZKKA	O	60	-	300/600	(32)	-	-	(45)	-	-	-
Photovoltaic Wire	-	690	ZKLA	R	90/150	90	600/2000	Yes	Yes	-	-	-	-	-
Portable Power Cables	W, G, G-GC, PPE	400	QPMU	R	75	(6)	2000	(33)	(35)	-	Yes	-	-	-
Submersible Pump Cable (TPE Insulation)	-	-	ZMHX	R	(4)	60	600	-	-	-	-	-	Yes	-