



# SIMpull<sup>®</sup> T90 Copper

SIMpull<sup>®</sup> THHN THWN-2 MTW / c(UL) T90 Nylon TWN75 Copper Conductor, 600V, Thermoplastic-Insulated Cable, All Sizes Rated TWN75



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Solid per ASTM B3 or Combination unilay-stranded copper conductors per ASTM B787.
2. **Insulation:** All phases are insulated with Polyvinyl Chloride with Nylon Sheath
3. **Jacket:** Polyvinyl Chloride PVC jacket utilizing SIMpull<sup>®</sup> Technology.

## APPLICATIONS AND FEATURES:

SIMpull<sup>®</sup> THHN, THWN-2, MTW - (UL)- Suitable for dry locations not exceeding 90°C. For Gasoline and Oil Resistant II applications not to exceed 75°C. MTW (UL) - suitable for dry locations not exceeding 90°C. For wet locations, Gasoline and Oil Resistant II applications not to exceed 60°C. T90 Nylon c(UL) - cables are primarily intended for installation in conduit (raceways) as exposed wiring in dry locations not exceeding 90°C. TWN75 c(UL) - suitable for wet or dry locations at not more than 75°C. The maximum voltage rating for all intended applications is 600 volts. Minimum installation handling temperature is limited to -25°C. Minimum operating temperature limited to -40°C. Non-SIMpull Silicone Free size 14, 12, 10.

## SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- CSA Certified LL90458
- ASTM B787 19 Wire Combination Unilay-Stranded Copper Conductors
- Canadian Electrical Code
- CSA FT-1 Flame Test

## SAMPLE PRINT LEGEND:

SOUTHWIRE SIMpull{TM} E51583 {UL} (XX AWG) XX.X{mm<sup>2</sup>} CU TYPE MTW OR THWN-2 OR THHN OR GASOLINE AND OIL RESISTANT II OR AWM 600 VOLTS VW-1 --- {CSA} T90 NYLON OR TWN75 600 VOLTS FT1 {NOM}-ANCE 90°C - (X AWG) ---RoHS PAT [www.patentSW.com](http://www.patentSW.com)





**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/Kcmil	No. of Strands	inch	mil	mil	inch	lb/1000ft	lb/1000ft
5076650	14	Solid	0.064	15	5	0.106	12	15
5076990	14	Solid	0.064	15	5	0.106	12	15
5076730	14	Solid	0.064	15	5	0.106	12	15
5077230	14	Solid	0.064	15	5	0.106	12	15
6104830	14	Solid	0.064	15	5	0.106	12	15
5077070	14	Solid	0.064	15	5	0.106	12	15
5530960	14	Solid	0.064	15	5	0.106	12	15
5076810	14	Solid	0.064	15	5	0.106	12	15
6726590	14	19	0.073	15	5	0.113	12	16
4720190	14	19	0.073	15	5	0.113	12	16
4720270	14	19	0.073	15	5	0.113	12	16
6875170	14	19	0.073	15	5	0.113	12	16
4720430	14	19	0.073	15	5	0.113	12	16
4720350	14	19	0.073	15	5	0.113	12	16
5077150	14	19	0.073	15	5	0.113	12	16
4957700	12	Solid	0.080	15	5	0.122	19	23
5076320	12	Solid	0.080	15	5	0.122	19	23
4958120	12	Solid	0.080	15	5	0.122	19	23
4958040	12	Solid	0.080	15	5	0.122	19	23
5076400	12	Solid	0.080	15	5	0.122	19	23
4957880	12	Solid	0.080	15	5	0.122	19	23
4957960	12	Solid	0.080	15	5	0.122	19	23
5076570	12	Solid	0.080	15	5	0.122	19	23
4720680	12	19	0.090	15	5	0.132	20	24
6726750	12	19	0.090	15	5	0.132	20	24
4720920	12	19	0.090	15	5	0.132	20	24
4720760	12	19	0.090	15	5	0.132	20	24
4720840	12	19	0.090	15	5	0.132	20	24
5526600	12	19	0.090	15	5	0.132	20	24
6726670	12	19	0.090	15	5	0.132	20	24
4846260	10	Solid	0.101	20	5	0.153	31	37
5077560	10	Solid	0.101	20	5	0.153	31	37
5077310	10	Solid	0.101	20	5	0.153	31	37
6726830	10	Solid	0.101	20	5	0.153	31	37
5077490	10	Solid	0.101	20	5	0.153	31	37
5526630	10	19	0.117	20	5	0.165	32	38
6104860	10	19	0.117	20	5	0.165	32	38
4721340	10	19	0.117	20	5	0.165	32	38
4721180	10	19	0.117	20	5	0.165	32	38
5526620	10	19	0.117	20	5	0.165	32	38
4721260	10	19	0.117	20	5	0.165	32	38





Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Insul. Thickness	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight
	AWG/Kcmil	No. of Strands	inch	mil	mil	inch	lb/1000ft	lb/1000ft
472142◇	10	19	0.117	20	5	0.165	32	38
611462◇	8	19	0.143	30	5	0.217	50	63
472175◇	8	19	0.143	30	5	0.217	50	63
472167◇	8	19	0.143	30	5	0.217	50	63
472191◇	8	19	0.143	30	5	0.217	50	63
472183◇	8	19	0.143	30	5	0.217	50	63
472217◇	6	19	0.179	30	5	0.253	81	95
472225◇	6	19	0.179	30	5	0.253	81	95
472241◇	6	19	0.179	30	5	0.253	81	95
472233◇	6	19	0.179	30	5	0.253	81	95
472282◇	4	19	0.226	40	5	0.324	128	154
684068◇	3	19	0.254	40	5	0.352	162	190
484675◇	3	19	0.254	40	5	0.352	162	190
684076◇	2	19	0.286	40	5	0.384	204	236
672394◇	2	19	0.286	40	5	0.384	204	236
688051◇	2/0	19	0.420	50	5	0.524	410	465
672402◇	2/0	19	0.420	50	5	0.524	410	464
471995◇	3/0	19	0.471	50	5	0.574	518	578
472001◇	14	19	0.070	15	5	0.113	12	16
472050◇	12	19	0.088	15	5	0.132	20	24
472100◇	10	19	0.113	20	5	0.165	32	38
472159◇	8	19	0.141	30	6	0.217	50	63
472209◇	6	19	0.177	30	6	0.253	81	95
472258◇	4	19	0.225	40	7	0.322	128	153
484667◇	3	19	0.252	40	7	0.350	162	190
672386◇	2	19	0.282	40	7	0.382	204	235
684084◇	1	19	0.322	50	8	0.439	258	301
471979◇	1/0	19	0.361	50	8	0.480	326	374
471987◇	3/0	19	0.456	50	8	0.574	518	579
677820◇	4/0	19	0.512	50	8	0.630	655	723

All dimensions are nominal and subject to normal manufacturing tolerances  
 ◇ Cable marked with this symbol is a standard stock item





**Table 2 – Electrical and Engineering Data**

Stock Number	Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 75°C	Inductive Reactance @ 60Hz	Allowable Ampacity At 75°C	Allowable Ampacity At 90°C
	AWG/ Kcmil	inch	lb	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
507665	14	0.400	32	2.631	3.170	0.058	20	25
507699	14	0.400	32	2.631	3.170	0.058	20	25
507673	14	0.400	32	2.631	3.170	0.058	20	25
507723	14	0.400	32	2.631	3.170	0.058	20	25
610483	14	0.400	32	2.631	3.170	0.058	20	25
507707	14	0.400	32	2.631	3.170	0.058	20	25
553096	14	0.400	32	2.631	3.170	0.058	20	25
507681	14	0.400	32	2.631	3.170	0.058	20	25
672659	14	0.500	32	2.631	3.170	0.058	20	25
472019	14	0.500	32	2.631	3.170	0.058	20	25
472027	14	0.500	32	2.631	3.170	0.058	20	25
687517	14	0.500	32	2.631	3.170	0.058	20	25
472043	14	0.500	32	2.631	3.170	0.058	20	25
472035	14	0.500	32	2.631	3.170	0.058	20	25
507715	14	0.500	32	2.631	3.170	0.058	20	25
495770	12	0.400	52	1.662	2.002	0.054	25	30
507632	12	0.500	52	1.662	2.002	0.054	25	30
495812	12	0.500	52	1.662	2.002	0.054	25	30
495804	12	0.500	52	1.662	2.002	0.054	25	30
507640	12	0.500	52	1.662	2.002	0.054	25	30
495788	12	0.500	52	1.662	2.002	0.054	25	30
495796	12	0.500	52	1.662	2.002	0.054	25	30
507657	12	0.500	52	1.662	2.002	0.054	25	30
472068	12	0.500	52	1.662	2.002	0.054	25	30
672675	12	0.500	52	1.662	2.002	0.054	25	30
472092	12	0.500	52	1.662	2.002	0.054	25	30
472076	12	0.500	52	1.662	2.002	0.054	25	30
472084	12	0.500	52	1.662	2.002	0.054	25	30
552660	12	0.500	52	1.662	2.002	0.054	25	30
672667	12	0.500	52	1.662	2.002	0.054	25	30
484626	10	0.600	83	1.040	1.253	0.050	35	40
507756	10	0.600	83	1.040	1.253	0.050	35	40
507731	10	0.600	83	1.040	1.253	0.050	35	40
672683	10	0.600	83	1.040	1.253	0.050	35	40
507749	10	0.600	83	1.040	1.253	0.050	35	40
552663	10	0.700	83	1.040	1.253	0.050	35	40
610486	10	0.700	83	1.040	1.253	0.050	35	40
472134	10	0.700	83	1.040	1.253	0.050	35	40
472118	10	0.700	83	1.040	1.253	0.050	35	40
552662	10	0.700	83	1.040	1.253	0.050	35	40





Stock Number	Cond. Size	Min Bending Radius	Max Pull Tension	DC Resistance @ 25°C	AC Resistance @ 75°C	Inductive Reactance @ 60Hz	Allowable Ampacity At 75°C	Allowable Ampacity At 90°C
	AWG/ Kcmil	inch	lb	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
472126◇	10	0.700	83	1.040	1.253	0.050	35	40
472142◇	10	0.700	83	1.040	1.253	0.050	35	40
611462◇	8	0.900	132	0.653	0.786	0.052	50	55
472175◇	8	0.900	132	0.653	0.786	0.052	50	55
472167◇	8	0.900	132	0.653	0.786	0.052	50	55
472191◇	8	0.900	132	0.653	0.786	0.052	50	55
472183◇	8	0.900	132	0.653	0.786	0.052	50	55
472217◇	6	1.000	209	0.411	0.495	0.051	65	75
472225◇	6	1.000	209	0.411	0.495	0.051	65	75
472241◇	6	1.000	209	0.411	0.495	0.051	65	75
472233◇	6	1.000	209	0.411	0.495	0.051	65	75
472282◇	4	1.300	333	0.258	0.310	0.048	85	95
684068◇	3	1.400	420	0.205	0.246	0.047	100	115
484675◇	3	1.400	420	0.205	0.246	0.047	100	115
684076◇	2	1.500	530	0.162	0.195	0.045	115	130
672394◇	2	1.500	530	0.162	0.195	0.045	115	130
688051◇	2/0	2.100	1064	0.081	0.097	0.043	175	195
672402◇	2/0	2.100	1064	0.081	0.097	0.043	175	195
471995◇	3/0	2.300	1342	0.064	0.078	0.042	200	225
472001◇	14	0.400	32	2.631	3.170	0.058	20	25
472050◇	12	0.500	52	1.662	2.002	0.054	25	30
472100◇	10	0.600	83	1.040	1.253	0.050	35	40
472159◇	8	0.800	132	0.653	0.786	0.052	50	55
472209◇	6	1.000	209	0.411	0.495	0.051	65	75
472258◇	4	1.200	333	0.258	0.310	0.048	85	95
484667◇	3	1.400	420	0.205	0.246	0.047	100	115
672386◇	2	1.500	530	0.162	0.195	0.045	115	130
684084◇	1	1.700	669	0.128	0.154	0.046	130	145
471979◇	1/0	1.900	844	0.102	0.122	0.044	150	170
471987◇	3/0	2.200	1342	0.064	0.078	0.042	200	225
677820◇	4/0	2.500	1692	0.051	0.062	0.041	230	260

\* Ampacities based upon 2023 NEC Table 310.16 and do not take into account the overcurrent protection limitations in NEC 240.4(D) of 15 Amps for 14 AWG CU, 20 Amps for 12 AWG CU, and 30 Amps for 10 AWG CU (independent of the conductor temperature rating and stranding if size is present in table). Also, see NEC sections 310.15 and 110.14(C) for additional requirements.

\* Ampacities have been adjusted for more than Three Current-Carrying Conductors.

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

\* Non-SIMPull Silicone Free sizes: 14, 12, 10.





**Table 3 - Stock Code Colors**

Size (Strand)	Color	Stock Number
14 (Solid)	BK	507665
14 (Solid)	RD	507699
14 (Solid)	WE	507673
14 (Solid)	YW	507723
14 (Solid)	OE	610483
14 (Solid)	BE	507707
14 (Solid)	BN	553096
14 (Solid)	GN	507681
14 (19)	BK	472001
14 (19)	YW	672659
14 (19)	WE	472019
14 (19)	RD	472027
14 (19)	OE	687517
14 (19)	BE	472043
14 (19)	GN	472035
14 (19)	BN	507715
12 (Solid)	BK	495770
12 (Solid)	OE	507632
12 (Solid)	BE	495812
12 (Solid)	GN	495804
12 (Solid)	BN	507640
12 (Solid)	WE	495788
12 (Solid)	RD	495796
12 (Solid)	YW	507657
12 (19)	BK	472050
12 (19)	WE	472068
12 (19)	YW	672675
12 (19)	BE	472092
12 (19)	RD	472076
12 (19)	GN	472084
12 (19)	OE	552660
12 (19)	BN	672667
10 (Solid)	RD	484626
10 (Solid)	BE	507756
10 (Solid)	BK	507731
10 (Solid)	GN	672683
10 (Solid)	WE	507749
10 (19)	BK	472100
10 (19)	YW	552663
10 (19)	OE	610486
10 (19)	GN	472134
10 (19)	WE	472118
10 (19)	BN	552662
10 (19)	RD	472126





Size (Strand)	Color	Stock Number
10 (19)	BE	472142
8 (19)	BK	472159
8 (19)	RD	611462
8 (19)	RD	472175
8 (19)	WE	472167
8 (19)	BE	472191
8 (19)	GN	472183
6 (19)	BK	472209
6 (19)	WE	472217
6 (19)	RD	472225
6 (19)	BE	472241
6 (19)	GN	472233
4 (19)	BK	472258
4 (19)	GN	472282
3 (19)	WE	484667
3 (19)	GN	684068
3 (19)	BK	484675
2 (19)	BK	672386
2 (19)	GN	684076
2 (19)	WE	672394
1 (19)	BK	684084
1/0 (19)	BK	471979
2/0 (19)	GN	688051
2/0 (19)	BK	672402
3/0 (19)	WE	471987
3/0 (19)	BK	471995
4/0 (19)	WE	677820

