# SIMpull® T90 Copper

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

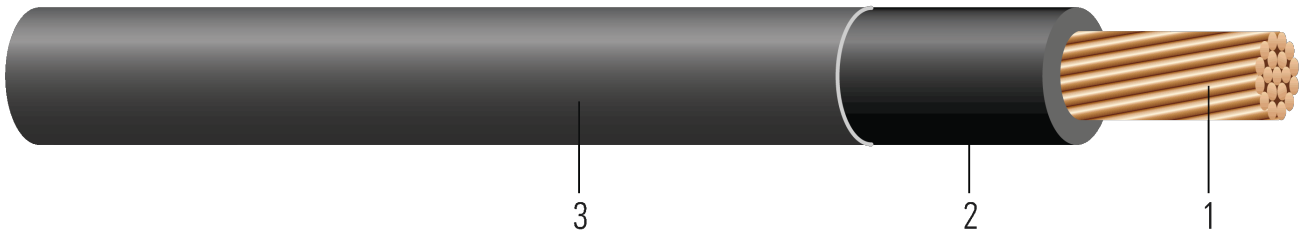


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Solid soft drawn copper per ASTM B3 or Combination unilay-stranded copper conductors per ASTM B3 and B787
2. **Insulation:** Colored Polyvinyl Chloride (PVC)
3. **Sheath:** Nylon sheath utilizing SIMpull® technology

## APPLICATIONS AND FEATURES:

• SIMpull® THHN, THWN-2, and 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 sizes 14, 12, and 10 AWG.

## SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B787 19 Wire Combination Unilay-Stranded Copper Conductors
- UL 83 Thermoplastic Insulated Wires and Cables
- UL 758 Standard for Appliance Wiring Material
- UL 1063 Machine Tool Wiring (MTW)
- CSA Certified LL90458
- CSA C22.2 No. 75 Thermoplastic Insulated Wires and Cables
- Canadian Electrical Code
- CSA FT-1 Flame Test


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## SAMPLE PRINT LEGEND:

SOUTHWIRE SIMpull™ E51583 {UL} (XX AWG) XX.X{mm2} 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

## Table 1 – Weights and Measurements

| Cond. Size | Cond. Number | Strand Count | Diameter Over Conductor | Insul. Thickness | Insulation Color | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight |
|---|---|---|---|---|---|---|---|---|---|
| AWG/ Kcmil | | No. of Strands | inch | mil | | mil | inch | lb/1000ft | lb/1000ft |
| 12 | 1 | SOLID | 0.08 | 15 | BN | 5 | 0.123 | 20 | 24 |

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

## Table 2 – Electrical and Engineering Data

| Cond. Size | Cond. Number | 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 |
| 12 | 1 | 0.5 | 52 | 1.662 | 2.063 | 0.054 | 25 | 30 |

* 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, and 10 AWG.

Table 3 - Stock Code Colors ( / means stripe. Blue/White: Blue with White Stripe)

| Cond. Size | Stranding | Color | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AWG | num | Black | Red | White | Yellow | Orange | Blue | Brown | Green | White/Blue |
| 14 | 1 (solid) | 507665 | 507699 | 507673 | 507723 | 610483 | 507707 | 553096 | 507681 | |
| 14 | 19 | 472001 | 472027 | 472019 | 672659 | 687517 | 472043 | 507715 | 472035 | 678050 |
| 12 | 1 (solid) | 495770 | 495796 | 495788 | 507657 | 507632 | 495812 | 507640 | 495804 | |
| 12 | 19 | 472050 | 472076 | 472068 | 672675 | 552660 | 472092 | 672667 | 472084 | |
| 10 | 1 (solid) | 507731 | 484626 | 507749 | | | 507756 | | 672683 | |
| 10 | 19 | 472100 | 472126 | 472118 | 552663 | 610486 | 472142 | 552662 | 472134 | |
| 8 | 19 | 472159 | 611462 or 472175 | 472167 | | | 472191 | | 472183 | |
| 6 | 19 | 472209 | 472225 | 472217 | | | 472241 | | 472233 | |
| 4 | 19 | 472258 | | | | | | | 472282 | |
| 3 | 19 | 484675 | | 484667 | | | | | 684068 | |
| 2 | 19 | 672386 | | 672394 | | | | | 684076 | |
| 1 | 19 | 684084 | | | | | | | | |
| 1/0 | 19 | 471979 | | | | | | | | |
| 2/0 | 19 | 672402 | | | | | | | 688051 | |
| 3/0 | 19 | 471995 | | 471987 | | | | | | |
| 4/0 | 19 | | | 677820 | | | | | | |



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