



## Aluminum AlumaFlex® SIMpull THHN/THWN-2®

600 Volt Alumaflex® Brand Aluminum Alloy (AA-8176) Conductor. PVC Insulation/SIM Nylon Sheath, Heat, Moisture, Gasoline and Oil Sunlight Resistant. Also Rated THWN-2. SIM Technology® for Easier Pulling



Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- Conductor:** Class B compact stranded bare aluminum per ASTM B800 and ASTM B801 or Single Input Wire (SIW) Compact AL per ASTM B836
- Insulation:** Heat and moisture resistant PVC insulation in various colors
- Insulation:** Nylon jacket utilizing SIMpull® Technology

### APPLICATIONS AND FEATURES:

#### APPLICATION

Southwire SIMpull THHN® Aluminum Wire & Cable with Alumaflex® Brand conductors are primarily used in conduit and cable trays for services, feeders and branch circuits in commercial or industrial applications as specified in the 2011 National Electrical Code. When used as Type THHN or T90 Nylon conductor is suitable for use in dry locations at temperatures not to exceed 90°C. When used as Type THWN-2 or TWN75, conductor is suitable for use in wet or dry locations at temperatures not to exceed 90°C or not to exceed 75°C when exposed to oil or coolant. Voltage for all applications is 600 volts. This cable should be installed without application of pulling lubricant.

#### FEATURES

- Sunlight Resistant - Sizes #2 and larger
- Oil and Gasoline Resistant II
- CT - Sizes 1/0 AWG and larger
- VW-1 - All Sizes
- FT1 - All Sizes
- T90 Nylon – Sizes 4 AWG through 750 kcmil
- TWN 75 – Sizes 8 AWG through 750 kcmil
- National Electrical Code, NFPA 70, 2020 Edition
- NEMA WC-70 Construction Requirements
- RoHS Compliant

### SPECIFICATIONS:

- ASTM B800 8000 Series Aluminum Alloy Wire
- ASTM B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 83 Thermoplastic Insulated Wires and Cables





- CSA C22.2 No. 75 Thermoplastic Insulated Wires and Cables
- Federal Specification A-A-59544

**SAMPLE PRINT LEGEND:**

SOUTHWIRE SIMpull{TM} E23919 {UL} 600 VOLTS (XXX KCMIL) XXX{mm2} COMPACT AL. --- {ALUMAFLEX}® AA8176 TYPE THWN-2 OR THHN OR GASOLINE AND OIL RESISTANT II FOR CT USE SUNLIGHT RESISTANT VW-1 --- {CUL} T90 NYLON OR TWN75 600 VOLTS FT1 90°C --- RoHS SOUTHWIRE® {NOLUBE}® {900} {SIMpull} {THHN}® {SIMpull} {T90}{TM} {listed THWN-2} PAT www.patentSW.com

**Table 1 – Weights and Measurements**

| Cond. Size<br>AWG/Kcmil | Cond. Number | Strand Count<br>No. of Strands | Diameter Over Conductor<br>inch | Insul. Thickness<br>mil | Jacket Thickness<br>mil | Approx. OD<br>inch | Aluminum Weight<br>lb/1000ft | Approx. Weight<br>lb/1000ft |
|-------------------------|--------------|--------------------------------|---------------------------------|-------------------------|-------------------------|--------------------|------------------------------|-----------------------------|
| 3/0                     | 1            | 15                             | 0.422                           | 50                      | 8                       | 0.543              | 158                          | 213                         |

All dimensions are nominal and subject to normal manufacturing tolerances  
 ◊ Cable marked with this symbol is a standard stock item  
 \* Strand count meets minimum number per ASTM

**Table 2 – Electrical and Engineering Data**

| Cond. Size<br>AWG/<br>Kcmil | Cond. Number | Min Bending<br>Radius<br>inch | Max Pull<br>Tension<br>lb | DC Resistance @<br>25°C<br>Ω/1000ft | AC Resistance @<br>75°C<br>Ω/1000ft | Inductive Reactance<br>@ 60Hz<br>Ω/1000ft | Allowable Ampacity<br>At 75°C<br>Amp | Allowable Ampacity<br>At 90°C<br>Amp |
|-----------------------------|--------------|-------------------------------|---------------------------|-------------------------------------|-------------------------------------|---|--------------------------------------|--------------------------------------|
| 3/0                         | 1            | 2.2                           | 1006                      | 0.105                               | 0.126                               | 0.042                                     | 155                                  | 175                                  |

\* 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.  
 \* Inductive Reactance is based on non-ferrous conduit with one diameter spacing.





**Stock Code Colors**

| Size | Black  | Brown  | Orange | Yellow | Gray   | White  | Red    | Blue   | Purple | Green  |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      |        |        |        |        |        |        |        |        |        |        |
| 6    | 563768 |        |        |        |        | 578332 | 573834 | 573835 |        | 566358 |
| 4    | 563769 |        |        |        |        | 577628 | 573544 | 573833 |        | 562211 |
| 2    | 563770 | 587026 | 587027 | 587028 | 578329 | 563493 | 573541 | 573542 |        | 562745 |
| 1    | 563771 | 587023 | 587024 | 587025 | 578327 | 578328 | 583155 | 583156 |        | 562746 |
| 1/0  | 562747 | 562753 | 562754 | 562752 | 562755 | 562750 | 562748 | 562749 | 573380 | 562756 |
| 2/0  | 562212 | 562758 | 562759 | 562757 | 562760 | 562213 | 562214 | 562621 | 573370 | 562761 |
| 3/0  | 562663 | 562763 | 562764 | 562762 | 562765 | 562664 | 562665 | 562666 | 573371 | 562766 |
| 4/0  | 562671 | 561805 | 561806 | 561807 | 562767 | 562672 | 562673 | 562674 | 573372 | 562768 |
| 250  | 560444 | 561863 | 561864 | 561865 | 561866 | 562625 | 562626 | 562627 | 573373 | 561867 |
| 300  | 562667 | 562771 | 562772 | 562770 | 562773 | 562668 | 562669 | 562670 | 573374 | 562774 |
| 350  | 560443 | 561858 | 561859 | 561861 | 561862 | 562622 | 562623 | 562624 | 573375 | 562775 |
| 400  | 562677 | 562781 | 562782 | 562780 | 562783 | 562779 | 562776 | 562778 | 573376 | 562699 |
| 500  | 560442 | 561853 | 561854 | 561855 | 561856 | 562698 | 562696 | 562697 | 573377 | 561857 |
| 600  | 560441 | 561847 | 561848 | 561849 | 561850 | 562628 | 562630 | 562631 | 573379 | 561851 |
| 700  | 562689 | 561843 | 561844 | 561846 | 562693 | 562692 | 562690 | 562691 |        |        |
| 750  | 562632 | 561838 | 561839 | 561840 | 561841 | 562633 | 562634 | 562635 | 573481 | 561842 |
| 900  | 562679 | 561782 | 561783 | 561785 | 561786 | 562683 | 562681 | 562682 |        | 562684 |
| 1000 | 562680 | 564280 | 564281 | 564282 | 564283 |        |        |        |        |        |

