

## BUILDING WIRE AND CABLE

### SINGLE CONDUCTORS

Southwire single conductor types (except TFFN/TFN/MTW/AWM) are primarily used in conduit for branch circuits, feeders, or service entrance conductors as specified in the National Electrical Code (NEC). Voltage rating for all single conductor types is 600V. Consult the NEC for more detailed information regarding use.

#### SIMpull THHN® Copper THHN Wire & Cable & SIMpull THHN® Aluminum THHN Wire & Cable with Alumaflex® Brand Conductors



Southwire SIMpull THHN® wire & cable conductors are primarily used in conduit and cable trays for services, feeders, and branch circuits in commercial or industrial applications. 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 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. SIMpull THHN® wire & cable conductors are designed to be installed without application of a pulling lubricant. Available in copper (all sizes) or Alumaflex® Brand aluminum conductors (sizes 8 AWG and larger). Sizes 14, 12, and 10 AWG are available with SIMpull Solutions® technology only in SIMpull BARREL™ Cable Drums or SIMpull® CoilPAK™ Wire Payoff configurations.



#### SIMpull XHHW-2® Copper & Aluminum XHHW Wire & Cable with Alumaflex® Brand Conductors



Southwire SIMpull XHHW-2® wire & cable conductors are primarily used in conduit, cable tray or other recognized raceways for service, feeders, and branch circuit wiring, as specified in the National Electrical Code. SIMpull XHHW-2® wire & cable conductors may be used in wet or dry locations at temperatures not to exceed 90° C. Voltage rating for XHHW-2 conductors is 600 volts. Suitable for use in Health Care Facilities per Section 517.160 of the National Electrical Code where a dielectric constant of less than 3.5 may be specified. SIMpull Solutions® conductors are designed to be installed without application of a pulling lubricant.



#### Copper & Aluminum USE, RHH, RHW with Alumaflex® Brand Conductors



Southwire Type RHH or RHW-2 or USE-2 conductors are used with conduit as specified in the National Electrical Code. When used as Type USE-2, conductors are suitable for use as underground service entrance conductors for direct burial at conductor temperatures not to exceed 90°C. When used as RHW-2 or USE-2, conductor temperatures shall not exceed 90°C in wet or dry locations. Available in copper (all sizes) or aluminum conductors (sizes 6 AWG and larger).



#### Copper TFFN/TFN/MTW/AWM Fixture Wire



Southwire Type TFFN or TFN or MTW or AWM may be used as fixture wire in dry locations at conductor temperatures not to exceed 90°C. May be used as machine tool wiring in dry locations at temperatures not to exceed 90°C, and at 60°C in wet locations or when exposed to oil or coolant. May be used as appliance wiring material in dry location, conductor temperatures not to exceed 105°C. Available in copper only.

### MULTIPLE CONDUCTOR CABLES

Southwire multiple conductor cables are recommended for use as specified in the National Electrical Code (NEC). Voltage rating for all cables is 600V. Consult the NEC for more detailed information regarding use.

#### Romex® Brand SIMpull® Indoor Wire Copper NM-B Cable



Southwire Romex® Brand SIMpull® Type NM-B cable (nonmetallic-sheathed cable) may be used for both exposed and concealed work in normally dry locations at temperatures not to exceed 90°C (with ampacity limited to that for 60°C conductors). NM-B cable is primarily used in residential wiring as branch circuits for outlets, switches, lighting, and other loads. NM-B cable may be run in air voids of masonry block or tile walls where such walls are not wet or damp locations. Available in copper only. SIMpull Solutions® conductors are designed to be installed without application of a pulling lubricant.

#### Copper UF-B Cable



Southwire Type UF-B cable is generally used as underground feeder to outside post lamps, pumps, and other loads or apparatus fed from a distribution point in an existing building. UF-B cable is rated for direct burial. UF-B cable may be used for interior branch circuit wiring in residential or agricultural buildings at conductor temperatures not to exceed 90°C (with ampacity limited to that for 60°C conductors). UF-B cable can be used in applications permitted for Type NMC cable in Section 334.10(B) of the National Electrical Code. Available in copper only.

#### Copper Service Entrance (SE) Cable



Southwire Type SE service entrance cable is used to convey power from the service drop to the meter base and from the meter base to the distribution panelboard—however it may be used in all applications where Type SE cable is permitted (per NEC Article 338). SE cable may be used in wet or dry above ground locations at temperatures not to exceed 90°C. SE cable cannot be installed underground, even in conduit. Available with copper or aluminum conductors.

#### Aluminum Mobile Home Feeder with Alumaflex® Brand Conductors

*(Also suitable for separate secondary buildings)*



Southwire mobile home feeder is intended for the connection of mobile homes to a supply of electricity where permanent wiring is required. Suitable for direct burial in earth at conductor temperatures not to exceed 90°C. Can be used (with protection) inside buildings. Available with aluminum Alumaflex® Brand conductors only. Mobile Home Feeder is also a good solution for underground wiring to separate secondary buildings with sub-panels such as a separate garage, shed, pump house, etc. It is available for larger circuits than Type UF-B cable.



AMPERAGE						
COPPER				ALUMINUM		
Size (AWG OR kcmil)	TW, UF-B, NM-B (60°C)	RHH, THW, THWN, XHHW, SE (75°C)	RHH, THHN, THWN-2, XHHW-2, RHW-2, USE-2 (90°C)	(60°C)	THW, RHH, THWN, XHHW, SE (75°C)	THHN, THWN-2, XHHW-2, RHW-2, USE-2 (90°C)
14	15	15	15	-	-	-
12	20	20	20	-	-	-
10	30	30	30	-	-	-
8	40	50	55	35	40	45
6	55	65	75	40	50	55
4	70	85	95	55	65	75
3	85	100	110	65	75	85
2	95	115	130	75	90	100
1	110	130	145	85	100	115
1/0	125	150	170	100	120	135
2/0	145	175	195	115	135	150
3/0	165	200	225	130	155	175
4/0	195	230	260	150	180	205
250	215	255	290	170	205	230
300	240	285	320	195	230	260
350	260	310	350	210	250	280
400	280	335	380	225	270	305
500	320	380	430	260	310	350
600	350	420	475	285	340	385
-	385	460	520	315	375	425
750	400	475	535	320	385	435
-	410	490	555	330	395	445
-	435	520	585	355	425	480
1,000	455	545	615	375	445	500

Note: Ampacities for insulated wires or cables rated 0-2000 volts and not more than three current carrying conductors in raceway or cable or earth. Based on 30°C (86°F) ambient. Ampacity is based upon the National Electrical Code

RECOMMENDED CIRCUIT LENGTHS FOR VOLTAGE DROP**											
	WIRE SIZE (AWG)	RATING OF CIRCUIT BREAKER OR FUSE IN AMPERES									
		15	20	30	40	50	60	70	80	90	100
COPPER	14	40									
	12	65	50								
	10	105	80	55							
	8	160	120	80	60	50*					
	6	260	195	130	100	80	60*				
	4	420	305	205	155	120	100	85	70*		
	2	665	500	330	250	200	165	140	125	110	95*
ALU	6	155	115	80	60	50					
	4	245	185	125	95	75	60				
	2	295	295	200	150	120	100	85	75	65	

\*\*For single conductors (THHN/THWN(-2), XHHW-2, etc.) only. This ampereage not allowed for types NM-B and UF-B cable. Recommended maximum circuit lengths in feet for voltage system of 120 volts. For 240-volt systems, circuit lengths may be doubled. Note: Extremely long circuits can produce voltage losses whereby some electrical equipment may not operate properly. Following these recommended values should provide reasonable efficiency of operation.

AMPERAGE ALLOWANCE FOR 3-WIRE SINGLE PHASE DWELLING SERVICES		
SERVICE RATING (AMPS)	COPPER SIZE (AWG) OR KCMIL	ALUMINUM SIZE (AWG) OR KCMIL
100	4	2
125	2	1/0
150	1	2/0
200	2/0	4/0
225	3/0	250
250	4/0	300
300	250	350
350	350	500
400	400	600