

Section 7. Building Wire



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Specifications subject to change. For complete specifications and availability visit www.lapptannehill.com

MTW



Construction: Conductors: Stranded Bare Copper per ASTM B-3; Solid Bare Copper per ASTM B-3.
Insulation: Color-Coded Polyvinyl Chloride (PVC).

Part Number	Gauge	Stranding	Nominal Wall Inches	Nominal OD Inches	Weight lbs./mft
MTW22-7-X	22	7/.0076	0.030	0.091	5.5
MTW20-10-X	20	10/30	0.030	0.099	7.1
MTW18-16X	18	16/30	0.030	0.106	9.3
MTW22-1-X	22	Solid	0.030	0.087	5.5
MTW20-1-X	20	Solid	0.030	0.099	7.1
MTW18-1-X	18	Solid	0.030	0.102	9.3
MTW16-1-X	16	Solid	0.030	0.114	13.0
MTW14-1-X	14	Solid	0.030	0.124	18.5
MTW16-26-X	16	26/30	0.030	0.117	13.0
MTW14-19-X	14	19/.0147	0.030	0.132	22.2
MTW8-133-X	8	133/29	0.045	0.252	67.0
MTW14-41-X	14	41/30	0.030	0.132	18.5
MTW12-65-X	12	65/30	0.030	0.151	26.9
MTW10-105-X	10	105/30	0.030	0.175	40.6
MTW8-19-X	8	19/.0295	0.045	0.247	67.9
MTW12-19-X	12	19/.0185	0.045	0.184	32.0
MTW10-19-X	10	19/.0185	0.045	0.202	46.2
MTW12-1-X	12	Solid	0.030	0.145	26.9

Technical Data:

- Temperature:**
- UL 1015/1011/1028/BC-5W2: 105°C/600V
 - UL MTW: 90°C/300V
 - THHW: 14 AWG - 8 AWG
 - CSA AWM I A/B & TEW: 105°C/600V

- Rated Voltage:** 300V and 600V

- Color Code:**
- 0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow

- Approvals:**
- UL VW-1
 - CSA FT-1
 - UL Standard 758 - Styles 1011/1015/1028/1032/1230/1231/1335/1344
 - UL Standard 1063 - MTW
 - UL Standard 1426 - BC-5W2
 - CSA AWM I A/B & TEW
 - SAE J378

SPT-1, SPT-2, SPT-3 Lamp Cord



Construction: Conductors: Stranded Copper. **Insulation:** Color Coded PVC.

Applications/Key Features:

Lamp Cord is suitable for lamps, small appliances, radios, jukeboxes and other similar applications that do not exceed 300 volts. When used, temperatures not to exceed minimum -20°C or maximum 105°C.

SPT Lamp Cord is manufactured using sizes 18 AWG through 12 AWG fully annealed bunched stranded copper per UL 62.

Flexible premium grade PVC insulation/jacket material. Insulated Conductors are duplexed in a flat construction to promote easy tear-down during installation.

Part Number	Number of Conductors	Size (AWG)	Conductor Strand (#/AWG)	Nominal Insulation Thickness (inches)	Nominal Overall Diameter (inches)	Current (Amps)	Approx. Net Weight (lbs./1000 ft.)
TYPE SPT-1 300V 105°C UL/CSA							
SPT1-18/2-X	2	18	41/34 BC	0.030	.105 X .198	10	20
TYPE SPT-1.5 300V 105°C UL AWM STYLE 20288							
SPT1.5-18/2-X	2	18	41/34 BC	0.040	.130 X .245	10	25
TYPE SPT-2 300V 60°C UL/CSA							
SPT2-18/2-X	2	18	41/34	0.045	.135 X .260	10	30
SPT2-16/2-X	2	16	65/34	0.045	.145 X .285	13	39
TYPE SPT-2 300V 150°C UL/CSA							
SPT2-18/2-X	2	18	41/34	0.045	.135 X .260	10	28
SPT2-16/2-X	2	16	65/34	0.045	.145 X .285	13	39
TYPE SPT-3 300V 60°C UL/CSA							
SPT3-14/2-X	2	14	41/30 BC	0.080	.235 X .420	18	88
SPT3-12/2-X	2	12	65/30 BC	0.095	.285 X .490	25	110

Technical Data:

- Temperature:** 105°C or 60°C

- Rated Voltage:** 300V

- Color Code:** Black, White, Brown, Clear/Gold, and Crystal/Clear, and Ivory. All colors not available in all sizes.

- Approvals:**
- UL 62
 - CSA Certified
 - Meets requirements of the NEC

THHN



Construction: Conductors: Copper conductors are annealed (soft) copper.

Insulation: Thermoplastic/Nylon Sheath (PVC). **Jacket:** Nylon or UL-listed equal jacket is applied.

Features:

- THHN or THWN-2 or MTW (also AWM) meets or exceeds all applicable ASTM specifications, UL Standard 83, UL Standard 1063 (MTW), CSA, NOM-ANCE 90(D)C, Federal Specification A-A-59544, and requirements of the National Electrical Code.
- Solid construction available in sizes 14 through 10 AWG as Types THHN or THWN or AWM only.
- Sizes 14 through 6 AWG also suitable for 105°C appliance wiring material (AWM).
- 60°C - When terminated to equipment for circuits rated 100 amperes or less or marked for size 14 through 1 AWG conductors. MTW wet locations or when exposed to oil or coolant.
- 75°C - When terminated to equipment for circuits rated over 100 amperes or marked for conductors larger than size 1 AWG. THWN-2 when exposed to oil or coolant. MTW dry locations.
- 90°C - THHN dry locations. THWN-2 wet or dry locations. For ampacity derating purposes.

Technical Data:



Temperature:

- 60°C
- 75°C
- 90°C



Rated Voltage: 600V



Color Code:

0-Black, 1-Brown, 2-Red, 3-Orange,
4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray,
9-White, 54-Green/Yellow



Approvals:

- Heat, Moisture, Gasoline, and Oil Resistant.
- Sizes 8 AWG and Larger Rated THWN-2.
- All Stranded Sizes Rated MTW and THWN.
- Sizes 14 Through 6 AWG Rated AWM (105 °C).
- Sizes 14 AWG through 500 kcmil Listed T90 Nylon or TWN 75.
- Sizes 14 through 10 solid and stranded, Sizes 14 AWG through 500 kcmil Listed FT1.
- Sizes 14 Through 1 AWG Rated VW-1.
- Size 1/0 AWG and Larger Listed for CT Use.
- Black Size 2 AWG and Larger Listed Sunlight Resistant.
- NOM-ANCE 90(D)C

Part Number	AWG	Number Strands	Insulation Thickness (mils)	Jacket Thickness (mils)	Nominal O.D. (mils)		Approx. Net Weight Per 1000 ft. (lbs.)		Allowable Ampacities		
					Sol.	Str.	Sol.	Str.	60 °C	75 °C	90 °C
THHN14-19-X	14	19	15	4	102	109	15	16	15	15	15
THHN12-19-X	12	19	15	4	119	128	23	24	20	20	20
THHN10-19-X	10	19	20	4	150	161	36	38	30	30	30
THHN8-19-X	8	19	30	5	—	213	—	62	40	50	55
THHN6-19-X	6	19	30	5	—	249	—	95	55	65	75
THHN4-19-X	4	19	40	6	—	318	—	152	70	85	95
THHN3-19-X	3	19	40	6	—	346	—	188	85	100	110
THHN2-19-X	2	19	40	6	—	378	—	234	95	115	130
THHN1-19-X	1	19	50	7	—	435	—	299	110	130	150
THHN1/0-19-X	1/0	19	50	7	—	474	—	371	125	150	170
THHN2/0-19-X	2/0	19	50	7	—	518	—	461	145	175	195
THHN3/0-19-X	3/0	19	50	7	—	568	—	574	165	200	225
THHN4/0-19-X	4/0	19	50	7	—	624	—	717	195	230	260
THHN250-37-X	250	37	60	8	—	694	—	850	215	255	290
THHN300-37-X	300	37	60	8	—	747	—	1011	240	285	320
THHN350-37-X	350	37	60	8	—	797	—	1173	260	310	350
THHN400-37-X	400	37	60	8	—	842	—	1333	280	335	380
THHN500-37-X	500	37	60	8	—	926	—	1653	320	380	430
THHN600-37-X	600	61	70	9	—	1024	—	1985	355	420	475
THHN750-37-X	750	61	70	9	—	1126	—	2462	400	475	535
THHN1000-61-X	1000	61	70	9	—	1275	—	3254	455	545	615

Specifications subject to change. For complete specifications and availability visit www.lapptannehill.com



TFFN



Construction: **Conductors:** Copper conductors are annealed (soft) copper. **Insulation:** Thermoplastic/Nylon Sheath.

Applications/Key Features:

- TFFN or MTW or AWM may be used as fixture wire, machine tool wiring, or appliance wiring material as specified in the 2008 National Electrical Code.

Technical Data:



Temperature:

Not to exceed 90°C



Rated Voltage: 600V



Color Code:

Black, White, Red, Blue, Green, Yellow,
Orange, Brown, Purple, Gray, Pink



Approvals:

- Heat, Moisture, Oil, and Gasoline Resistant.
- Rated MTW and 105°C AWM.
- Available TFFN and TEWN.
- Southwire Type TFFN or MTW or AWM meets or exceeds UL Standard 66 and requirements of the National Electrical Code. RoHS Compliant

Part Number	Size AWG	Number Strands	Vinyl Insulation (mils)	Nylon Jacket (mils)	Nominal O.D. (mils)	Approx Weight 1000'	Allowable Ampacities	
							TFFN	MTW
TFFN18-16-X	18	16	15	4	85	7	6	7
TFFN16-26-X	16	26	15	4	99	11	8	10

TFN/TEWN



Construction: **Conductors:** Solid bare, soft annealed copper per ASTM B-3.

Insulation: High dielectric polyvinyl chloride (PVC). **Jacket:** Clear nylon.

Technical Data:



Temperature:

- Not to exceed 90°C or 105°C when used as AWM



Rated Voltage:

- UL-1316, 105°C dry, 80°C in oil, 600 volts
- UL-1408, 90°C dry, 60°C wet or in oil, 600 volts
- UL-1452, 90°C dry, 80°C in oil, 1000 volts



Color Code:

Size 18: Black, White, Red, Purple, Blue,
Gray, Yellow, Brown
Size 16: Black, White, Red, Green, Orange,
Blue, Yellow, Brown



Approvals:

- UL-1316, 105°C dry, 80°C in oil, 600 volts
- UL-1408, 90°C dry, 60°C wet or in oil, 600 volts
- UL-1452, 90°C dry, 80°C in oil, 1000 volts

Part Number	Size AWG	Number Strands	Vinyl Insulation (mils)	Nylon Jacket (mils)	Nominal O.D. (mils)	Approx Weight 1000'	Allowable Ampacity	
TFN18-1-X	18	1	15	4	78	7	6	
TFN18-7-X	18	7	15	4	83	7	6	
TFN16-1-X	16	1	15	4	89	10	8	
TFN16-7-X	16	7	15	4	94	11	8	

XHHW



Construction: **Conductors:** Copper. **Insulation:** Cross-Linked Polyethylene (XLP). High-Heat and Moisture Resistant.

Application:

XHHW-2 conductors are primarily used in conduit or other recognized raceways for services, feeders, and branch circuit wiring, as specified in the National Electrical Code. XHHW-2 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.

Features:

- Sizes 14 through 8 AWG also Rated SIS.
- Black Sizes 2 AWG and Larger Sunlight Resistant.
- XHHW-2 conductors meet or exceed UL Standard 44, Federal Specification A-A-59544, and requirements of the National Electrical Code.

Part Number	Conductor		Insulation Thickness (mils)	Nominal O.D. (mils)	Allowable Ampacities			Approx. Net Weight Per 1000' (lbs)
	Size (AWG or kcmil)	No. Strands			60 °C	75 °C	90 °C	
XHHW14-7-X	14	7	30	130	15	15	15	18
XHHW12-7-X	12	7	30	147	20	20	20	26
XHHW10-7-X	10	7	30	171	30	30	30	40
XHHW8-7-X	8	7	45	232	40	50	55	66
XHHW6-7-X	6	7	45	267	55	65	75	99
XHHW4-7-X	4	7	45	314	70	85	95	149
XHHW2-7-X	2	7	45	370	95	115	130	230
XHHW1-19-X	1	19	55	434	110	130	150	292
XHHW1/0-19-X	1/0	19	55	473	125	150	170	363
XHHW2/0-19-X	2/0	19	55	517	145	175	195	452
XHHW3/0-19-X	3/0	19	55	567	165	200	225	565
XHHW4/0-19-X	4/0	19	55	623	195	230	260	705
XHHW250-37-X	250	37	65	691	215	255	290	835
XHHW300-37-X	300	37	65	744	240	285	320	995
XHHW350-37-X	350	37	65	794	260	310	350	1155
XHHW400-37-X	400	37	65	839	280	335	380	1314
XHHW500-37-X	500	37	65	923	320	380	430	1633
XHHW600-61-X	600	61	80	1029	355	420	475	1966
XHHW700-61-X	700	61	80	1098	385	460	520	2283
XHHW750-61-X	750	61	80	1131	400	475	535	2441
XHHW1000-61-X	1000	61	80	1280	455	545	615	3230

Technical Data:

Temperature:
not to exceed 90°C

Rated Voltage: 600V

Color Code:
 Sizes: 14, 12, 10 AWG available in black, white, red, blue, yellow, green, orange, brown, purple and gray.
 Sizes: 2 AWG and larger listed and marked sunlight resistant in black only.
 Colors available in sizes 8 awg and larger.

RHH or RHW or USE



Construction: **Conductors:** Copper. **Insulation:** Cross-Linked Polyethylene (XLP). High-Heat, Moisture and Sunlight Resistant.

Application:

When used as Type USE-2, conductor is suitable for use as underground service entrance cable for direct burial at conductor temperatures not to exceed 90° C. When used as RHH, conductor temperatures shall not exceed 90°C in dry locations. When used as RHW-2 or USE-2, conductor temperatures shall not exceed 90°C in wet or dry locations. Voltage rating for RHH or RHW-2 or USE-2 conductors is 600 volts.

Features:

- Sizes 6 through 4/0 AWG also Rated SIS.

Part Number	Conductor		Insulation Thickness (mils)	Nominal O.D. (mils)	Allowable Ampacities			Approx. Net Weight Per 1000' (lbs)
	Size (AWG or kcmil)	No. Strands			60 °C	75 °C	90 °C	
RHHW14-7-X	14	7	45	160	15	15	15	21
RHHW12-7-X	12	7	45	177	20	20	20	30
RHHW10-7-X	10	7	45	201	30	30	30	44
RHHW8-7-X	8	7	60	262	40	50	55	72
RHHW6-7-X	6	7	60	297	55	65	75	106
RHHW4-7-X	4	7	60	344	70	85	95	156
RHHW2-7-X	2	7	60	400	95	115	130	238
RHHW1-19-X	1	19	80	484	110	130	150	309
RHHW1/0-19-X	1/0	19	80	523	125	150	170	381
RHHW2/0-19-X	2/0	19	80	567	145	175	195	472
RHHW3/0-19-X	3/0	19	80	617	165	200	225	586
RHHW4/0-19-X	4/0	19	80	673	195	230	260	729
RHHW250-37-X	250	37	95	751	215	255	290	867
RHHW300-37-X	300	37	95	804	240	285	320	1029
RHHW350-37-X	350	37	95	854	260	310	350	1191
RHHW400-37-X	400	37	95	899	280	335	380	1352
RHHW500-37-X	500	37	95	983	320	380	430	1674
RHHW600-61-X	600	61	110	1089	355	420	475	2012
RHHW700-61-X	700	61	110	1158	385	460	520	2332
RHHW750-61-X	750	61	110	1191	400	475	535	2492
RHHW800-61-X	800	61	110	1223	410	490	555	2652
RHHW900-61-X	900	61	110	1283	435	520	585	2970
RHHW1000-61-X	1000	61	110	1340	455	545	615	3288

Technical Data:

Temperature:
 • RHH not to exceed 90°C in dry locations
 • RHH-2 or USE-2 not to exceed 90°C in wet or dry locations

Rated Voltage: 600V

Color Code:
Black



Trailer Cables



Construction: **Conductors:** Bare or tinned copper. **Insulation:** PVC, Rubber or TPR insulation twisted with overall jacket.

Applications/Key Features:

- Trailer cable is used for electrical connections between tractor and trailer unit.
- Conductors cabled together with polypropylene or paper fillers. Paper separator applied over cabled assembly for easy removal of overall jacket. Overall oil-resistant PVC or CPE (Chlorinated Polyethylene) jacket applied over assembly. Various colors and configurations available.

Technical Data:



Temperature:

60°C
90°C
105°C
-40°C
-65°C



Stranded Color Code:

4 Conductor: Red, Yellow, Green, Brown
6 Conductor: Red, Yellow, Black, White, Green, Brown
7 Conductor: Red, Yellow, Black, White, Green, Brown, Blue

Part Number	No. of Conds	Cable Style	Indiv. Conductor	Insul. Thickness	Jacket Thickness	Nominal O.D.r
TRAILER-20/2-X	2	20	19	.036	.235	29.58
TRAILER-20/3-X	3	20	19	.034	.245	34.59
TRAILER-20/7-X	7	20	10	.08	.406	89.58
TRAILER-18/2-X	2	18	16	0	.26	35.86
TRAILER-18/6-X	6	18	16	.25	.355	81.01
TRAILER-16/4-X	4	16	19	0	.33	74.44
TRAILER-16/4-X	4	16	26	0	.435	116.15
TRAILER-16/5-X	5	16	19	.023	.355	87.61
TRAILER-16/6-X	6	16	19	.055	.4	109.86
TRAILER-16/6-X	6	16	19	.023	.36	95.78
TRAILER-14/2-X	2	14	19	.03	.312	56.89
TRAILER-14/4-X	4	14	19	.03	.375	102.86
TRAILER-14/4-X	4	14	19	.079	.445	130.6
TRAILER-14/4-X	4	14	41	0	.45	136.38
TRAILER-14/5-X	5	14	19	0	.5	161.78
TRAILER-14/5-X	5	14	19	.044	.445	142.1
TRAILER-14/6-X	6	14	19	.055	.5	173.4
TRAILER-14/7-X	7	14	19	0	.64	251.22
TRAILER-12/3-X	3	12	19	0	.5	150.99
TRAILER-12/4-X	4	12	19	.043	.47	157.91
TRAILER-12/5-X	5	12	19	0	.5	193.3
TRAILER-12/7-X	7	12	19	.055	.58	263.72
TRAILER-12/7-X	7	12	65	.075	.543	204.02
TRAILER-12/7-X	7	12	65	.07	.543	215.16
TRAILER-12/7-X	7	12	65	.075	.543	203.5
TRAILER-10/6-X	6	10	19	.038	.55	221.19
TRAILER-10/7-X	7	10	19	.092	.685	309.26
TRAILER-10/7-X	7	10	19	.042	.55	230.85
TRAILER-10/7-X	7	10	104	.075	.584	264.52
TRAILER-8/7-X	7	8	161	.06	.68	343.5
TRAILER-8/7-X	7	8	161	.07	.7	356.46
TRAILER-8/7-X	7	8	168	.09	.68	331.6

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