



300V SJOOW(UL) Flexible Cables

Scope

This specification covers flame retardant, water and ozone resistance, and flexible cables which shall be in accordance with UL 62 and cUL.

References standard

Unless otherwise specified, all cables shall be in accordance with all applicable section of the latest edition of the following Codes, Standards and regulations, and their current amendments.

- **Conductor resistance**

UL62 4.1.3.1 The conductor size shall be determined by both items (a) and (b):Table 4

- **Insulation resistance**

UL62 Insulation resistance for all "W" Type cords at 15°C Table 47

- **Insulation**

UL62 4.1.2 Insulation Table 8 class19 Thermoset EP

- **Jacket**

UL62 4.1.6 Jackets Table 11 class12 Thermoset CPE

- **Insulation thickness**

UL62 The classes, thickness, and required testing of insulation to be used on a particular type shall be as shown in Tables 14 to 17

- **Sparktest**

UL62 5.2.1 Spark test The following shall withstand a spark test using an ac test voltage as shown in Table 45 SJOOW

- **Jacket thickness**

UL62 4.2.7.1 The classes, thicknesses, and required testing of jackets to be used on a particular type shall be as shown in Tables 14 to 16. Table54 SJOOW

- **Physical properties**

UL62 5.1 Physical properties Table 12 1.12

- **Diameter**

UL62 4.1.5.5 The overall diameters of shielded cords shall comply with the overall diameters in Table 13, plus the additional increase due to the shield.

- **Internal voltage**

UL62 5.2.2 Dielectric strength for all finished types



Cable Type And Symbols

Cable Type	No. of core/units	Designation	Application
SJOW	2 or more	300V SOOW	Designed for hard usage with industrial equipment, heavy tools, battery chargers, portable lights and power extensions. SJOW is sunlight, water, oil and weather resistant and suitable for outdoor applications in the United States and in Canada.

Symbol	Description
S	means "Service." the voltage rating is 600 volts.
J	means "Junior" gives it a low rating.
OO	means the cable has oil resistant insulation and jacketing.
W	means the cable is weather and water resistant.

Application

SJOW flexible cords are designed for portable tools, equipment, small motors and associated machinery, industrial equipment, marine dockside power, appliances, equipment exposed to oils, solvents, flame, moisture and other electrical equipment where flexibility and durability are required. The rated voltage is 300V and volts and the temperature range is -40°C to 105°C.

Conductor

Flexible stranded bare copper in accordance with ASTM B-3 and UL 62

Insulation

• Material

Premium grade color coded Ethylene-Propylene Diene Monomer(EPDM) 105° C compound class 19, comply with table 8 of UL 62.

• Color Code Table

Core #	Color	Tracer	Core #	Color	Tracer	Core #	Color	Tracer
1	Black	-	8	Red	Black	15	Blue	White
2	White	-	9	Green	Black	16	Black	Red
3	Red	-	10	Orange	Black	17	White	Red
4	Green	-	11	Blue	Black	18	Orange	Red
5	Orange	-	12	Black	White	19	Blue	Red
6	Blue	-	13	Red	White	20	Red	Green
7	White	Black	14	Green	White	21	Orange	Green

*For more than 21 conductors the color sequence is repeated as necessary.

Jacket

Overall jacket of black Chlorinated Polyethylene (CPE), which is oil, solvents, ozone, weather, sunlight, and water resistant. CPE 105°C compound class 112, comply with Table 11 of UL 62.



Standard

UL 62, CSA C22.2 No.49, MSHA. NEC Table 400.5 Allowable Ampacity for Flexible Cords and Cables

Marking On Cable

The cable shall be marked with the following information at interval not exceeding 600mm(24inch).
The other information can be added in marking when purchaser required.

- Manufacture name
- Maximum temperature rating
- Temperature rating
- Voltage rating
- Flame test marking : ex. FT-1
- Week and Year of manufacture ; ex. 2016(10)
- Number of conductors and size : ex. 3 x 12AWG(3.31mm²) or 3/c x 12AWG(3.31mm²)
- Cable type designations
- UL Number
- SUN & WATER resistance
- Low temperature rating
- Oil resistance marking
- Length of cable in feet

Ex. of print : APOLLON CABLE 3/C 18 AWG (0.824MM²) UL c(UL) E537089 SJOOW 105°C SUN & WATER
RES. 600V -40°C FT1 FT2 07-KA240001-MSHA (WEEK)2024 0000FT

Approvals

UL 62, CSA C22.2 No.49, MSHA

Standard Print Legend

The cables shall be marked with the following information through the length of cables
The marking shall be repeated at least every 2 feet.

Marking on drum

On a flange of the drum, necessary information such as manufacturer's name, cable type, size, rated voltage, length of cable, drum no, gross weight, net weight, etc. shall be printed.

An arrow shall be printed on the drum with suitable instructions to show the direction of rotation of the drum.

Construction

• Conductor

Flexible stranded bare copper in accordance with ASTM B-3 and UL 62
Option : A Suitable Tape may be applied on the conductor

• Insulation

EPDM 105°C Compound class 19, table 8, UL 62
Color Code : ICEAS-58-679, Method1 Tab.1 90% of min avg.

• Cabling

Insulated cores shall be cabled
Option : Flame retardant & non-hygroscopic fillers may be used.
Option : Suitable tape(s) may be applied on the cabled core.

• Jacket

aCPE 105°C Compound class 1.12, table 11, UL 62 80% of min avg.



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Conductor Size AWG	Number of Core	Number of wires No./AWG	Insulation Thickness in/mm	Jacket Thickness in/mm	Overall Diameter in/mm	tolerance in/mm	Weight lbs/kft	Rated Ampacity (AMPS)
18AWG	2	16/0.254	0.03/0.762	0.03/0.762	0.28/7.11	0.02/0.5	74.4	10
18AWG	3	16/0.254	0.03/0.762	0.03/0.762	0.3/7.62	0.02/0.5	89.3	10
18AWG	4	16/0.254	0.03/0.762	0.03/0.762	0.33/8.38	0.02/0.6	105.7	7
18AWG	5	16/0.254	0.03/0.762	0.03/0.762	0.36/9.14	0.02/0.6	119.6	5.6
16AWG	2	26/0.254	0.03/0.762	0.03/0.762	0.31/7.87	0.02/0.6	78.9	13
16AWG	3	26/0.254	0.03/0.762	0.03/0.762	0.33/8.38	0.02/0.6	98.2	13
16AWG	4	26/0.254	0.03/0.762	0.03/0.762	0.36/9.14	0.02/0.6	123.5	10
16AWG	5	26/0.254	0.03/0.762	0.03/0.762	0.39/9.91	0.03/0.7	131.0	8
14AWG	2	41/0.254	0.03/0.762	0.03/0.762	0.34/8.64	0.02/0.6	119.1	18
14AWG	3	41/0.254	0.03/0.762	0.03/0.762	0.36/9.14	0.02/0.6	131.0	18
14AWG	4	41/0.254	0.03/0.762	0.03/0.762	0.4/10.16	0.03/0.7	163.7	15
14AWG	5	41/0.254	0.03/0.762	0.03/0.762	0.44/11.18	0.03/0.8	199.3	12
12AWG	2	65/0.254	0.03/0.762	0.05/1.143	0.41/10.41	0.03/0.7	154.8	25
12AWG	3	65/0.254	0.03/0.762	0.05/1.143	0.43/10.92	0.03/0.8	194.9	25
12AWG	4	65/0.254	0.03/0.762	0.05/1.143	0.47/11.94	0.03/0.8	242.6	20
12AWG	5	65/0.254	0.03/0.762	0.05/1.143	0.51/12.95	0.04/0.9	308.2	16
10AWG	2	104/0.254	0.03/0.762	0.05/1.143	0.54/13.71	0.04/1.0	263.4	30
10AWG	3	104/0.254	0.05/1.143	0.06/1.52	0.58/14.73	0.04/1.0	334.8	30
10AWG	4	104/0.254	0.05/1.143	0.06/1.52	0.63/16.0	0.04/1.1	415.2	25
10AWG	5	104/0.254	0.05/1.143	0.06/1.52	0.68/17.27	0.05/1.2	496.9	20

