



UL 6288

STANDARD FOR SAFETY

Decorative Lighting Cords

UL Standard for Safety for Decorative Lighting Cords, UL 6288

First Edition, Dated March 20, 2024

Summary of Topics

First Edition ANSI/UL 6288, Standard for Decorative Lighting Cords, dated March 20, 2024 applies to thermoplastic insulated wires and jacketed cords intended for use in or with decorative lighting products and are rated 300 V maximum.

The new requirements are substantially in accordance with Proposal(s) on this subject dated September 22, 2023 and January 5, 2024.

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UL 6288

Standard for Decorative Lighting Cords

First Edition

March 20, 2024

This ANSI/UL Standard for Safety consists of the First Edition.

The most recent designation of ANSI/UL 6288 as an American National Standard (ANSI) occurred on March 20, 2024. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

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INTRODUCTION

1 Scope

1.1 These requirements apply to thermoplastic insulated wires and jacketed cords intended for use in or with decorative lighting products and are rated 300 V maximum.

1.2 The products in this Standard are not oil rated. Products with Type designations ending in "W" are sunlight resistant.

2 Referenced Publications

2.1 Any undated reference to a code or standard appearing in the requirements of this Standard shall be interpreted as referring to the latest edition of that code or standard.

2.2 The following publications are referenced in this Standard.

ASTM B3, *Standard Specification for Soft or Annealed Copper Wire*

ASTM B33, *Standard Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes*

NFPA 70, *National Electrical Code*

UL 588, *Seasonal and Holiday Decorative Products*

UL 2556, *Wire and Cable Test Methods*

3 Glossary

3.1 The following definitions apply in this Standard.

3.2 BUNCH STRANDING – A group of wires twisted together without a predetermined pattern.

3.3 DIAMETER TAPE – A measuring tape that is graduated so that the circumference of a cylindrical object is measured and the reading results in the diameter of the object.

3.4 DIRECTION OF LAY – The longitudinal direction, designated as left-hand (counterclockwise) or right-hand (clockwise), in which the wires of a member or units of a conductor run over the top of the member or conductor as they recede from an observer looking along the axis of the member or conductor.

3.5 GROUNDED CONDUCTOR – A system or circuit conductor that is intentionally grounded.

3.6 GROUNDING CONDUCTOR – A conductor that is defined in the NEC, as "Grounding Conductor, Equipment".

3.7 NEUTRAL CONDUCTOR – A circuit conductor that normally carries current and is connected to ground (earth) at the main electrical panel. The conductor of a 2-wire circuit connected to the supply neutral point and earth ground is referred to as the "neutral".

3.8 NORMAL VISION – Vision without any aid other than the examiner's normal corrective lenses, if any.

3.9 ROOM TEMPERATURE – 25 ± 10 °C (77 ± 18 °F).

3.10 THERMOPLASTIC – A polymeric-based material that can be repeatedly softened by heating and hardened by cooling, and that in the softened state can be shaped through the application of force.

3.11 Ungrounded Conductor – circuit conductor that is not connected to ground.

4 Units of Measurement

4.1 The values given in SI (metric) units shall be normative. Any other values are for information only and put in parentheses.

CONSTRUCTION

5 General

5.1 Sections [6](#) – [27](#) set out specific requirements for these cords (see [Table 5.1](#) – [Table 5.3](#)).

Table 5.1
Dimensions of Parallel Cord Types

		Type	
		XTW	DPTW, DPT
Size, mm ² (AWG)		0.325 (22)	–
		0.519 (20)	0.519 (20)
		0.824 (18)	–
Insulation thickness, mm (mils)	Nominal (not a requirement)	0.76 (30)	1.14 (45)
	Minimum thickness at any point before separation Figure 23.1 (Dimension A)	0.69 (27)	1.02 (40)
	Minimum thickness at any point after separation Figure 23.1 (Dimension B)	0.33 (13)	0.69 (27)
Minimum thickness of web, mm (mils) Figure 23.1 (Dimension C)		1.14 (45)	2.03 (80)

Table 5.2
Round and Integral Parallel Cords

	Type				
	DPT	DPTW	XTW	DJT	DJTW
Temperature ratings, °C	105	105	105	105	105
Maximum voltage, V	300	300	300	300	300
Size of conductors, mm ² (AWG)	0.519	0.519	0.325, 0.519 and 0.824	0.519	0.519
	(20)	(20)	(22, 20, and 18)	(20)	(20)
Number of conductors	2	2	2 – 6	2 or 3	2 or 3
Grounding conductor	Section 13	Section 13	Section 13	Section 13	Section 13
Conductor:					
Material	Soft, annealed copper (Section 7)				

Table 5.2 Continued on Next Page

Table 5.2 Continued

	Type				
	DPT	DPTW	XTW	DJT	DJTW
Size	Cross-sectional area and DC resistance (8.1)				
Stranding	Size of wires (12.1), lay of wires (12.2)				
General	Joints, coatings, separators (Sections 9 , 10 , and 11)				
Insulation class	Section 14	Section 14	Section 14	Section 14	Section 14
Circuit conductor, class:					
105 °C	7	7	7	7	7
Grounding conductor:					
105 °C	N/A	N/A	7	7	7
Minimum average thickness, mm (mils)	Table 5.1	Table 5.1	Table 5.1	0.76 (30)	0.76 (30)
Minimum thickness at any point	Table 5.1	Table 5.1	Table 5.1	90 percent of min. avg.	90 percent of min. avg.
Minimum thickness at point of contact	N/A	N/A	N/A	80 percent of min. avg.	80 percent of min. avg.
Covering on individual conductors (optional)	N/A	N/A	N/A	Section 16	Section 16
Assembly	Parallel	Parallel	Parallel	Section 17	Section 17
Jacket class:					
105 °C	N/A	N/A	N/A	1.8	1.8
Minimum average thickness of jacket	N/A	N/A	N/A	0.76 (30)	0.76 (30)
Minimum thickness at any point of jacket	N/A	N/A	N/A	0.61 (24)	0.61 (24)
General	N/A	N/A	N/A	18.1	18.1
Overall braid	N/A	N/A	N/A	Cords with "-B" suffix only, Section 22	
Overall diameter	N/A	N/A	N/A	Section 19	Section 19
Conductor identification	Section 20	Section 20	Section 20	Section 20	Section 20
Tests, Clause:					
Insulation resistance	Section 46	Section 46	Section 46	Section 46	Section 46
Cold bend	Section 32	Section 32	Section 32	Section 32	Section 32
Heat-shock resistance	Section 34	Section 34	Section 34	Section 34	Section 34
Spark	Section 44	Section 44	Section 44	Section 44	Section 44
Dielectric strength	Section 45	Section 45	Section 45	Section 45	Section 45
Continuity	Section 48	Section 48	Section 48	Section 48	Section 48
Mechanical strength	N/A	N/A	N/A	Section 30	Section 30
Jacket resistance	N/A	N/A	N/A	Section 50	Section 50
Durability of ink printing	Section 36	Section 36	Section 36	Section 36	Section 36
Laser printing	Section 43	Section 43	Section 43	Section 43	Section 43
Copper corrosion	Section 49	Section 49	Section 49	Section 49	Section 49
Deformation	29.3	29.3	29.3	29.3	29.3
Tightness of insulation	Section 35	Section 35	Section 35	N/A	N/A

Table 5.2 Continued on Next Page

Table 5.2 Continued

	Type				
	DPT	DPTW	XTW	DJT	DJTW
Flame (VW-1)	Section 31	Section 31	Section 31	Section 31	Section 31
Physical properties, Table:					
Insulation	Table 29.1 and Table 29.2	Table 29.1 and Table 29.2	Table 29.1 and Table 29.2	Table 29.1 and Table 29.2	Table 29.1 and Table 29.2
Jacket	N/A	N/A	N/A	Table 29.3 and Table 29.4	Table 29.3 and Table 29.4
Additional tests for cords suffixed "-B":					
Flexibility of braid	N/A	N/A	N/A	Section 42	Section 42
Water Absorption	N/A	N/A	N/A	N/A	Section 41
Additional tests for "W" type cords:					
Weather resistance	N/A	Section 33	Section 33	N/A	Section 33
Insulation resistance	N/A	46.1	46.1	N/A	46.1
Permittivity and stability factor	N/A	Section 47	Section 47	N/A	Section 47
Application	Indoor	Outdoor	Outdoor	Indoor	Outdoor

Table 5.3
Insulated Single and Twisted Pair Decorative Cords

	Type						ATXW
	CXTW	CXTW	YXTW	LXTW	LXT	LVXT	
Maximum temperature, °C	105	105	105	60	60	60	60
Maximum voltage, V	300	300	300	300	300	60	60
Size of conductors, mm ² (AWG)	–	0.162, 0.205, and 0.259 (25, 24, 23) ^a	–	0.162, 0.205, and 0.259 (25, 24, 23) ^a	0.162, 0.205, and 0.259 (25, 24, 23) ^a	–	–
	0.325, 0.519 and 0.824 (22, 20, and 18)	0.325, 0.519 and 0.824 (22, 20, and 18)	0.519 (20) and 0.824 (18)	0.325, 0.519 and 0.824 (22, 20, and 18)	0.325, 0.519 and 0.824 (22, 20, and 18)	0.0507 – 0.205 (30 – 24)	0.0507 – 0.205 (30 – 24)
Number of conductors	2	1	1	1	1	1 or 2 ^c	1 – 4 _c
Conductor:							
Material	Soft annealed copper (Section 7)						
Size	Cross-sectional area and DC resistance (8.1)						
Stranding	Size of wires (12.1), lay of wires (12.2)						
General	Joints, coatings, separators (Sections 9 , 10 , and 11)						
Conductor identification	Section 20	Section 20	N/A	N/A	N/A	N/A	N/A
Maximum lay of conductors	Section 17	Section 17	N/A	N/A	N/A	N/A	N/A
Insulation class	7	7	7	7	7	4	N/A

Table 5.3 Continued on Next Page