

UL 1286

Office Furnishings

Underwriters Laboratories Inc. (UL)
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UL Standard for Safety for Office Furnishings, UL 1286

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SUMMARY OF TOPICS

The new edition dated August 28, 2008 was issued to update the Title Page to indicate the latest approval date as an American National Standard and to include the proposed changes dated November 24, 2006 and April 18, 2008.

The following table lists the future effective dates with the corresponding item.

Future Effective Date	References
February 28, 2013	2.4, 2.5, 2.11, 2.15, 2.17, 2.19 – 2.25, 2.30, 2.34, 2.35 – 2.37, 2.41 – 2.43, 5.1, 6.3 – 6.5, 11.2.11, 12.7, 12.8, 13.6, 14.1.9, 14.2.1, 14.2.4 – 14.2.6, Table 14.1, 14.4.1.4, 14.4.2.1, 18.1, 19.1.1, Section 19.2, Section 19.3, 19.7.1, 19.9.4 – 19.9.6, 21.3, Section 30, 32.2, 32.3, Section 33, and 39.8

The new and revised requirements are substantially in accordance with UL's Proposal(s) on this subject dated November 24, 2006 and April 18, 2008.

As indicated on the title page (page 1), this UL Standard for Safety is an American National Standard. Attention is directed to the note on the title page of this Standard outlining the procedures to be followed to retain the approved text of this ANSI/UL Standard.

The UL Foreword is no longer located within the UL Standard. For information concerning the use and application of the requirements contained in this Standard, the current version of the UL Foreword is located on ULStandardsInfoNet at: <http://ulstandardsinfo.net/ulforeword.html>

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New product submittals made prior to a specified future effective date will be judged under all of the requirements in this Standard including those requirements with a specified future effective date, unless the applicant specifically requests that the product be judged under the current requirements. However, if the applicant elects this option, it should be noted that compliance with all the requirements in this Standard will be required as a condition of continued Listing, Recognition, and Follow-Up Services after the effective date, and understanding of this should be signified in writing.

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This Standard consists of pages dated as shown in the following checklist:

Page	Date
1-58	August 28, 2008
A1-A2	August 28, 2008
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The most recent designation of ANSI/UL 1286 as an American National Standard (ANSI) occurred on August 28, 2008. The ANSI approval for this standard does not include the Cover Page, Transmittal Pages, or the Title Page.

This ANSI/UL Standard for Safety, which consists of the Fifth Edition, is under continuous maintenance, whereby each revision is ANSI approved upon publication.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

Revisions of this Standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements. Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover office furnishing panels, study carrels, work stations, and pedestal-style systems that are mechanically interconnected to form an office furnishing system in accordance with the National Electrical Code, ANSI/NFPA 70. These are able to be provided with an electrical distribution system, including switches, and receptacles, and channels for routing communication cables within system components separate from electrical raceways. Office furnishing systems include filing cabinets, desks, work surfaces, shelves, storage units, and similar items that have a particular electrical or mechanical function unique to an office furnishing system.

1.2 These requirements also cover lighting units intended to be mechanically attached to particular components within an individual device or office furnishing system.

1.3 These requirements do not cover panels that are intended to penetrate the ceiling, or that are used to support the building structure.

2 Glossary

2.1 For the purposes of this Standard the following definitions apply.

2.2 **ACCESSIBLE PART** – A part located so that it is capable of being contacted by a person, either directly or as determined using the probe illustrated in Figure 10.1.

2.3 **ACCESSORY** – An electrical component that is intended to be attached in the field or to be shipped separately; for example, a raceway, a top- or base-feed, a fixture, or similar component.

2.4 **BRANCH CIRCUIT** – The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s).

Added 2.4 effective February 28, 2013

2.5 **BRANCH CIRCUIT, MULTIWIRE** – A branch circuit that consists of two or more ungrounded conductors that have a voltage between them, and a grounded conductor that has equal voltage between it and each ungrounded conductor of the circuit and that is connected to the neutral or grounded conductor of the system.

Added 2.5 effective February 28, 2013

2.6 **CHANNEL** – A passage intended for the routing and holding of communication wiring, low-voltage wiring, and wiring having functional insulation plus a layer of supplementary insulation. A channel is not required to provide mechanical protection, and is not evaluated as a raceway.

2.7 **CLASS 2 CIRCUIT** – A circuit having power and voltage limitations as defined in the National Electrical Code, ANSI/NFPA 70, Article 725. To determine whether a circuit is within Class 2 limits, measurements shall be made in accordance with the Standard for Class 2 and Class 3 Transformers, UL 1585, or the Standard for Class 2 Power Units, UL 1310.

2.8 **CONNECTING ASSEMBLY, UNIT-TO-UNIT ELECTRICAL** – A component that is used to electrically connect unit raceways of two or more adjacent, mechanically connected units.

2.9 **CONNECTOR, UNIT-TO-UNIT MECHANICAL** – An assembly that is used to connect two or more adjacent units for the purpose of providing mechanical support between the units.

2.10 CORE – That portion of an office furnishing structural unit from one outside surface to its opposite outside surface, excluding decorative trim, electrical hardware, and mechanical supporting feet or glides.

2.11 FABRIC PARTITIONS – A partition consisting of fabric without a rigid backing that is attached to a framing system.

Added 2.11 effective February 28, 2013

2.12 FEED, BASE – A raceway that contains or routes the supply conductors from a branch-circuit supply located in the ceiling, floor, or a wall to the base of the starter unit.

2.13 FEED, TOP – A raceway that contains or routes the supply conductors from a branch-circuit supply located in the ceiling or a wall to the upper portion of the starter unit.

2.14 FIELD-WIRING TERMINAL – A terminal to which a conductor is intended to be connected in the field.

2.15 FUNCTIONAL LOAD^a – The level of loading or force typical of hard use.

Added 2.15 effective February 28, 2013

2.16 FURNISHING SYSTEM – An arrangement of interconnected or individual units, work stations, study carrels, and similar types of products. A furnishing system is defined as being of one of the following three types:

Type I – A system that provides all required parts and employs prewired modular raceways and accessories requiring only quick connect and disconnect means for electrical connections, other than the permanent connection to the branch-circuit supply. A Type I system is not prohibited from being shipped with accessories:

a) Installed in the panel; or

b) Installed in the field when the accessories are marked for use in the system.

Type II – A system that provides raceways for the routing and termination of wiring in the field. Wiring assemblies, when provided, are not always complete. This type of system requires inspection of the wiring by the local authorities.

Type III – A system that is not intended to be wired and has no provision for the routing and termination of wiring.

2.17 INSULATION, BASIC – Insulation applied to live parts to provide basic protection against electric shock.

Added 2.17 effective February 28, 2013

2.18 INSULATION, SUPPLEMENTARY – A separate layer of insulation that is provided in addition to the basic insulation to reduce the risk of electric shock in the event of breakdown of the basic insulation.

2.19 LOSS OF SERVICEABILITY^a – The failure of any component to carry its intended load or to perform its normal function or adjustments.

Added 2.19 effective February 28, 2013

2.20 PANEL^a – A flat or curved surface that controls and/or defines space; provides privacy and a means for hanging components.

Added 2.20 effective February 28, 2013

2.21 PANEL MOUNTED COMPONENT^a – A product intended to be supported wholly by a panel system.

Added 2.21 effective February 28, 2013

2.22 PANEL RUN^a – Two or more panels connected in a straight line.

Added 2.22 effective February 28, 2013

2.23 PANEL-SUPPORTED^a – Individually connected panels and work surface, filing, storage, and shelving components and accessories that receive their primary support from the panels and that, when combined, form complete workstations.

Added 2.23 effective February 28, 2013

2.24 PANEL SYSTEMS PRODUCTS^a – The panels, screens, and various panel-mounted components used in conjunction with panel systems.

Added 2.24 effective February 28, 2013

2.25 PROOF LOAD^a – The level of loading or force in excess of hard use.

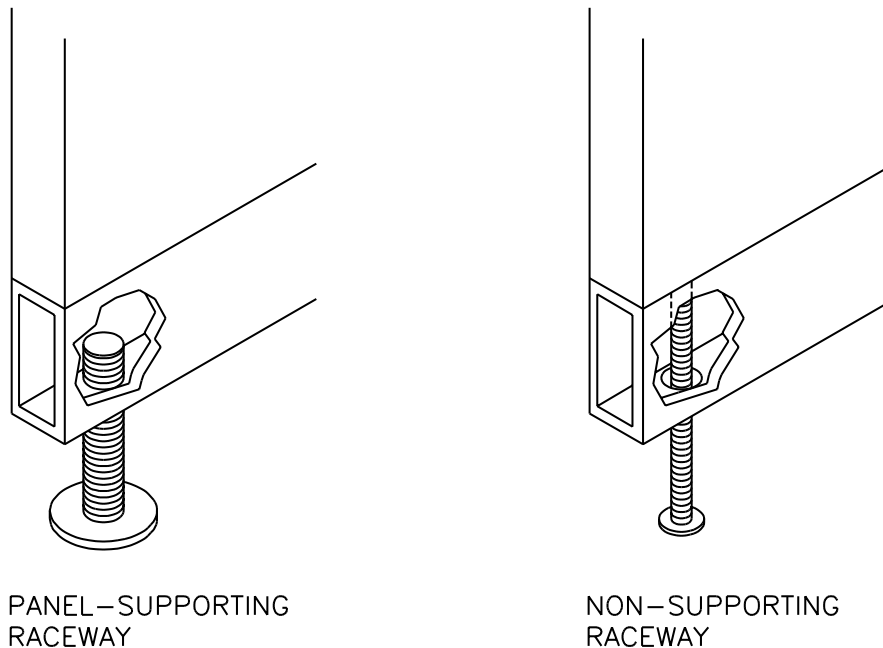
Added 2.25 effective February 28, 2013

2.26 RACEWAY – A completely enclosed channel intended specifically for the holding and routing of system wiring, where the conductors of electric light and power systems are separate from the conductors of Class 2 circuit systems. A raceway provides mechanical protection to the internal system wiring.

2.27 RACEWAY, FURNISHING – A raceway that is physically supported by a furnishing after installation or is integral to a furnishing.

2.28 RACEWAY, FURNISHING-SUPPORTING – A raceway that the furnishing rests directly upon, or to which supporting feet or glides are mechanically connected. See Figure 2.1.

Figure 2.1
Furnishing-supporting raceway



S3155A

2.29 RACEWAY, PASS-THROUGH FURNISHING – A raceway that is electrically connected between other raceways and does not have provisions for convenience receptacles or other means for drawing power from the supply source.

2.30 SCREEN^a – Non-load-carrying space divider that is less than ceiling height.

Added 2.30 effective February 28, 2013

2.31 STARTER UNIT – The unit that is connected to the external supply source and that sometimes has provision for electrical connection of additional portions of an office furnishing system. The physical location of the starter unit within the system is not specified, however, a series of electrically interconnected units forming a wall has a single starter unit.

2.32 STARTER UNIT, FIXED – A starter unit that is intended for permanent attachment to the building structure. A unit is permanently attached when the unit is secured and supported by mechanical fastening to the building structure. A bracket or similar arrangement that has no positive fastening means, such as a bolt or screw, to secure the unit is not permanent attachment, nor is an arrangement that serves only to stabilize the unit.

2.33 STARTER UNIT, FREESTANDING – A starter unit that is not intended for permanent attachment to the building structure and is not provided with means for such attachment.

2.34 SURFACE CLASSIFICATIONS^a:

ADJUSTABLE KEYBOARD SURFACE – An adjustable surface that is intended for placement of the keyboard, and/or other computer input devices.

DISPLAY SHELF – A shelf with a sloping surface and retaining flange or edge.

PRIMARY SURFACE – A surface that has the apparent potential for the highest loading within a workstation or a surface on which a person may sit. In cases where more than one horizontal surface exists, there may be more than one primary surface.

SECONDARY SURFACE – A surface that is used for storage (i.e., a shelf) or occupied exclusively by the equipment placed on the surface.

TRANSACTION SURFACE – A surface that is less than 16 in (406 mm) deep and is not enclosed. It is primarily used as a temporary work surface and not as a shelf.

WRITING SHELF – A moveable, typically stowable surface that is not intended to carry loads greater than 25 lb (11 kg), whose primary function is to support ancillary office tasks, such as writing and short-term reference material handling.

Added 2.34 effective February 28, 2013

2.35 SYSTEMS JUMPER – An electrical connection assembly that is used for interconnection of office furnishings electrical systems and manufactured wiring systems.

Added 2.35 effective February 28, 2013

2.36 TEST LOAD^a – A particular load/force placed in or on a component specified by a test procedure and not included in the dead weight of the component.

Added 2.36 effective February 28, 2013

2.37 TIP OVER^a – The condition where the unrestricted unit will not return to its normal upright position.

Added 2.37 effective February 28, 2013

2.38 UNIT – A component, the primary purpose of which is to form an office furnishing system or a portion of a system.

2.39 UNIT INSERT – A separable portion of a panel (excluding decorative trim, electrical components, and structural elements of the unit) that is intended to be removed or replaced in the field, with or without the use of tools.

2.40 USER SERVICING – Any form of servicing that is intended to be performed by personnel other than qualified service personnel. Some examples of user servicing are:

a) The attachment of accessories by means of attachment plugs and receptacles or by means of other separable connections.

b) The replacement of:

1) Fuses and lamps that are accessible without the use of tools, and

2) Lamps such as those employed for ambient lighting and that require frequent replacement, whether or not the operation requires the use of tools.

c) The disconnection or connection of a unit, excluding a permanently connected starter unit, constructed so that the user is not exposed to basic insulated or uninsulated live parts.

- d) The laying in of communication-type cables or telephone cord in a cord-management trough or a designated communication channel.

2.41 USER ADJUSTABLE SURFACES^a – A surface that is intended to be adjusted by the user while under normal use.

Added 2.41 effective February 28, 2013

2.42 WORKING EDGE^a – The side of the surface at which the primary user sits. (Note: Some surfaces may have more than one working edge; for example, conference tables.)

Added 2.42 effective February 28, 2013

2.43 WORK SURFACE^a – A horizontal surface used to perform tasks and/or for storage space.

^aWith the permission of BIFMA, this definition is reproduced from the BIFMA/ANSI Standard for Office Furnishings - Panel Systems, ANSI/BIFMA X 5.6-2003. BIFMA shall not be responsible for the manner in which the information is presented, used, nor for any interpretations thereof.

Added 2.43 effective February 28, 2013

3 Components

3.1 Other than as indicated in 3.2, a component of a product covered by this Standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this Standard.

3.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

3.3 A component shall be used in accordance with its rating established for the intended conditions of use.

3.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3.5 Electromagnetic-interference filters, relocatable power taps, and transient voltage surge suppressors that are used in office furnishing systems to operate on 50 to 60 Hz power circuits shall comply, in addition to the applicable requirements in this Standard, with the applicable requirements in the Standards for Electromagnetic-Interference Filters, UL 1283; Relocatable Power Taps, UL 1363; and Transient Voltage Surge Suppressors, UL 1449; respectively.

3.6 Relays and similar non-manually controlled devices which are used to switch entire supply circuits on and off on a regular basis, such as with an energy management system, shall comply with Overload and Endurance Test, Section 23.

4 General

4.1 Units of measurement

4.1.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

4.2 References

4.2.1 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.

CONSTRUCTION

5 General

5.1 An office furnishing system shall be formed and assembled so that it has the strength, stability, and rigidity to resist the abuses to which it is subjected without resulting in a risk of fire, electric shock, or injury to persons. See the Structural Performance requirements of Sections 32 – 37.

Revised 5.1 effective February 28, 2013

5.2 A frame, a guard, a handle, or similar part, or an exposed portion of an enclosure, such as an edge, projection, or corner, shall be smooth and rounded, and not be so sharp as to result in a risk of injury to persons during intended use and maintenance of the product. Compliance shall be determined in accordance with the requirements in the Standard for Tests for Sharpness of Edges on Equipment, UL 1439.

5.3 A top- or base-electrical feed for a panel assembly shall not be used to provide support to the panel system.

6 Accessibility of Electrical Component Parts

6.1 Live parts of an office furnishing system shall be enclosed to reduce the risk of fire, electric shock, and injury to persons. See 19.5.2.

Exception No. 1: A part in a Class 2 circuit is not required to be enclosed. See 2.7.

Exception No. 2: A unit-to-unit electrical connecting assembly complying with the requirements in 14.1.4 – 14.1.6 and a contact opening of a receptacle that complies with the requirement in 10.1 are not required to be further enclosed.

6.2 A raceway enclosing uninsulated live parts shall be complete and shall require the use of a tool or tools to gain access to those parts. See 19.5.2.

6.3 A raceway enclosing basic insulated live parts shall be complete and reliably secured in place. See 19.5.2.

Revised 6.3 effective February 28, 2013

6.4 A snap-fit cover, a cover secured by 1/4-turn screws, or a similar cover, that is secured to a rigidly-supported raceway member is able to be used as the enclosure of basic insulated wiring when:

- a) The cover complies with the applicable snap-fit cover tests specified in Strength of Enclosure Tests, Section 24,
- b) Where metallic, the cover is reliably connected to the ground return path by means other than simple friction between surfaces.

Revised 6.4 effective February 28, 2013

6.5 With reference to 6.4, the system shall comply with one of the following:

- a) The installation of communication or low-voltage cable or wiring does not require access to the enclosed basic insulated parts, or
- b) Basic insulated wiring that is accessible when installing communication or low-voltage wiring is reliably held in place so that it is not unintentionally displaced or requires handling during the installation of the communication or low-voltage wiring.

Revised 6.5 effective February 28, 2013

7 Accessories

7.1 The requirements in this Section apply to accessories other than raceways, top- or base-feeds, and other components explicitly covered by other sections of this Standard.

7.2 A system having provision for the use of electrical accessories to be attached in the field shall be constructed so that the use of such accessories does not introduce a risk of fire, electric shock, or injury to persons.

7.3 A system shall comply with the requirements in this Standard with or without the accessory installed.

7.4 Installation of an electrical accessory by the user shall be restricted to an arrangement by which the electrical connections are accomplished by means of mating connectors or attachment plugs and receptacles.

7.5 Installation of an accessory intended to be made by service personnel shall be by means of mating connectors, attachment plugs and receptacles, plug-in connectors, insulated wire connectors, or by connection to existing wiring terminals.

7.6 With reference to 7.5, any installation that requires the cutting of wiring or the soldering of connections by the installer is not in compliance with the requirement unless the office furnishing system is Type II (see 2.16). An installation that requires cutting, drilling, or welding is not in compliance with the requirement in electrical enclosures and in other areas where such operations have the potential to damage existing electrical or mechanical components and wiring within the enclosures.

7.7 Strain-relief means shall be provided for the wiring in an accessory where stress is otherwise transmitted to terminal connections that are not visible during or after installation.

7.8 The mounting location of an accessory shall be indicated on the furnishing, unless:

- a) The mounting location is obvious due to the function of the accessory and arrangement of the basic products, and
- b) Instructions are provided covering the installation and location for the accessory.

7.9 An accessory shall be trial-installed to determine that the installation is applicable, that the instructions are detailed and accurate, and that the use of the accessory does not introduce a risk of fire, electric shock, or injury to persons.

ELECTRICAL CONSTRUCTION

8 Raceways of Metallic Materials

8.1 A metal raceway employed as the enclosure for live parts and as the only means of protecting electrical components against mechanical abuse shall be of sheet metal complying with the dimensions specified in Table 8.1, or of other sheet metal providing protection for wiring equivalent to that afforded by the steel or iron sheet covered in Table 8.1 as determined by the equivalence of thickness tests described in Strength of Enclosure Tests, Section 24.

Exception: For a sheet-metal raceway that is recessed or otherwise protected from mechanical abuse so that a 2-in (51-mm) diameter sphere is not able to contact the raceway, having a minimum wall thickness as specified in Table 8.2 complies with the requirement. For the purpose of this exception, a knockout or an area for unit-to-unit or unit-to-branch circuit electrical connection is not recessed or protected from mechanical abuse.

Table 8.1
Dimensions of sheet-metal raceway

Material	Minimum thickness, in (mm)						Maximum width of break-off areas,	
	Break-off areas		Knockouts and other points of connection for a wiring system		Elsewhere than at break-off areas of points of connection for a wiring system		in	(mm)
Steel or iron sheet or coil	0.017	(0.43)	0.036	(0.91)	0.025	(0.64)	1/32	(0.8)
Sheet aluminum	0.024	(0.61)	0.050	(1.27)	0.035	(0.89)	1/32	(0.8)

Table 8.2
Thickness of recessed metal raceway

Material	Minimum thickness	
	in	(mm)
Uncoated sheet steel	0.023	(0.58)
Sheet aluminum	0.029	(0.74)

8.2 A raceway or fitting base shall have a uniform wall thickness throughout its entire length, other than at points of reduced thickness that facilitate removal of knockouts. Both inside and outside surfaces of each length of an iron or steel raceway or fitting base shall be free of scale and rust and shall be in a condition that enables the protective coating to adhere firmly and have a smooth surface.

8.3 A metal cap or cover for a raceway or fitting base shall be at least as thick as specified in Table 8.1 and shall comply with the applicable requirements in this section.

8.4 The thickness of the finished product is to be measured with a machinist's micrometer caliper calibrated and read directly to at least 0.001 in or 0.01 mm. Measurements are to be made at five different locations on each sample examined.

8.5 A cast metal part shall be at least as thick as specified in Table 8.3.

Table 8.3
Thickness of cast metal parts

Material	Minimum thickness,	
	in	(mm)
Malleable iron	3/32	(2.4)
Iron other than malleable iron	1/8	(3.2)
Die-cast nonferrous:		
Part is ribbed or otherwise reinforced	1/16	(1.6)
Part is not ribbed or otherwise reinforced	3/32	(2.4)
Cast nonferrous other than die-cast	3/32	(2.4)