UL 775

STANDARD FOR SAFETY

Graphic Arts Equipment

UL Standard for Safety for Graphic Arts Equipment, UL 775

Third Edition, Dated February 27, 1998

Summary of Topics

This revision to UL 775 is being issued to remove the reference to the withdrawal date of UL 873 and to address universal upkeep of UL Standards for Safety. These revisions are considered to be non-substantive and not subject to UL's STP process.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin. Changes in requirements are marked with a vertical line in the margin and are followed by an effective date note indicating the date of publication or the date on which the changed requirement becomes effective.

The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a ″SUPERSEDED REQUIREMENTS″ notice.

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UL 775

Standard for Graphic Arts Equipment

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February 27, 1998

This UL Standard for Safety consists of the Third Edition including revisions through November 19, 2013.

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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Standards for Components A1

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INTRODUCTION

1 Scope

1.1 These requirements cover products that are intended for use in printing establishments. Included are such products as sheet–fed, web–fed, and offset presses and controls, composing and typesetting machines, cutting and folding machines, and other products that are used in the preparation of mats. The products covered are for connection to interior wiring systems in accordance with the National Electrical Code, and are rated at 600 V or less.

1.2 These requirements do not cover white printers, photocopy machines, typewriters, or any other product that is covered by individual requirements that are separate from this Standard.

1.3 Products that generally would be covered by the requirements in this Standard, such as duplicating equipment, are covered by the requirements in the Standard for Information Technology Equipment Safety – Part 1: General Requirements, UL 60950-1, when the product is not intended for use in printing establishments.

1.3 revised April 29, 2010

1.4 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this Standard, and that involves a risk of fire, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the acceptable level of safety as originally anticipated by the intent of this Standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this Standard, cannot be judged to comply with this Standard. Where considered appropriate, revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this Standard.

1.4 added February 27, 1998

2 Glossary

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

2.2 AUTOMATICALLY CONTROLLED PRODUCT – A product is considered to be automatically controlled when one or more of the following conditions occur:

a) The repeated starting of the product, beyond one complete predetermined cycle of operation to the point where some form of limit switch opens the circuit, is independent of any manual control.

b) During any single predetermined cycle of operation, a motor stops and restarts one or more times.

c) Upon energizing the product, the initial starting of a motor is intentionally delayed beyond intended, conventional starting.

d) During any single predetermined cycle of operation, changing of the mechanical load reduces the motor speed to reestablish starting–winding connections to the supply circuit.

2.3 CONTINUOUS-DUTY MOTOR – A motor is considered to be subjected to continuous duty when, under any intended condition of use, it is capable of operating unattended and under load for a period of 3 hours or more.

2.4 FIELD-WIRING TERMINAL – Any terminal to which a supply or other wire is capable of being connected by an installer in the field is a field-wiring terminal unless the wire is provided as part of the product and a pressure terminal connector, soldering lug, soldered loop, crimped eyelet, or other means for making the connection is factory-assembled to the wire.

2.5 LINE-VOLTAGE CIRCUIT – A circuit involving a potential of not more than 600 V, and having circuit characteristics in excess of those of a low-voltage circuit.

2.6 LOW-VOLTAGE CIRCUIT – A circuit involving a peak open-circuit potential of not more than 42.4 V supplied by a primary battery, by a Class 2 transformer, or by a combination of a transformer and a fixed impedance that as a unit complies with all of the performance requirements for a Class 2 transformer. A circuit that is derived from a line-voltage circuit by connecting a resistance in series with the supply circuit as a means of limiting the voltage and current is not considered to be a low-voltage circuit.

2.7 OPERATING SERVICING – Any form of servicing that is able to be performed by personnel other than those who are trained to maintain the particular product is operator servicing. Some examples of operator servicing are as follows:

a) The attachment of accessories by means of attachment plugs and receptacles or by means of other separable connectors,

b) The changing of tapes or ribbons that do not involve complicated operations (see 2.8),

c) The replacement of recording tapes, disks, program boards, punched cards, or paper forms, and

d) Resetting or replacement of circuit breakers, fuses, and lamps that are accessible without the use of tools; also, replacement of lamps that require frequent replacement – such as lamps of the projector type – whether or not the operation requires the use of tools.

2.8 Changing ribbons is considered to be a function of service personnel rather than operator servicing when the act involves extensive disassembly of the product.

2.9 REMOTELY CONTROLLED PRODUCT – A product that is out of sight of the operator.

2.10 SAFETY CIRCUIT – Any primary or secondary circuit that is relied upon to reduce the risk of fire, electric shock, or injury to persons. An interlock circuit, for example, is considered to be a safety circuit.

2.11 SECONDARY CIRCUITS – Secondary circuits are those circuits supplied from the secondary windings of isolating transformers. See 33.1 – 33.3.

2.12 TRANSFER SWITCH – A switch so located in a circuit that it is unable to make or break current during normal or abnormal conditions. A voltage selector is an example of a transfer switch.

3 Components

3.1 Except 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 generally used in the products covered by this Standard.

3.1 revised February 27, 1998

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.

3.2 added February 27, 1998

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

3.3 added February 27, 1998

3.4 Specific components are recognized as being 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 for which they have been recognized.

3.4 added February 27, 1998

4 Units of Measurement

4.1 When a value for measurement is followed by a value in other units in parentheses, the second value may be only approximate. The first stated value is the requirement.

4.2 Unless indicated otherwise, all voltage and current values mentioned in this Standard are root-mean-square (rms).

CONSTRUCTION

5 General

5.1 A product shall employ materials that are acceptable for the particular use, as determined by the performance requirements of this Standard.

5.2 When metals are depended upon to meet the requirements of this Standard, they shall not be used in such combination as to cause galvanic action that affects any part of the product.

6 Frame and Enclosure

6.1 A product shall be formed and assembled so that it has the strength and rigidity required to resist the abuses to which it is likely to be subjected, without presenting a risk of fire, electric shock, or injury to persons due to total or partial collapse with resulting reduction of spacings, loosening or displacement of parts, or other defects.

6.2 For unreinforced flat surfaces, cast metal shall not be less than 1/8 inch (3.2 mm) thick, malleable iron shall not be less than 3/32 inch (2.4 mm) thick, and die-cast metal shall not be less than 5/64 inch (2.0 mm) thick. Corresponding thicknesses of not less than 3/32 inch (2.4 mm), 1/16 inch (1.6 mm) and 3/64 inch (1.2 mm), respectively, are not prohibited when the surface under consideration is curved, ribbed, or otherwise reinforced, or when the shape, size of the surface, or both are such that acceptable mechanical strength is provided.

6.3 The enclosure of a product shall be complete. Dependence shall not be placed on adjacent walls or adjacent equipment to complete an enclosure.

6.4 An enclosure of sheet metal shall be evaluated with respect to its size and shape, the thickness of metal, and the particular application, considering the intended use of the product. Sheet steel having a thickness less than 0.026 inch (0.66 mm) when uncoated, or 0.029 inch (0.74 mm) when galvanized, or of nonferrous sheet metal having a thickness less than 0.036 inch (0.91 mm) shall only be used for relatively small areas or for surfaces that are curved or otherwise reinforced. See also 10.2.1.2, in which the thickness requirement is given for metal to which a wiring system is to be attached in the field.

6.5 Among the factors taken into account for an enclosure other than that as described in 6.2 or 6.4 are its relative:

a) Physical strength,

b) Resistance to impact,

c) Moisture-absorptive properties,

d) Combustibility,

e) Resistance to corrosion, and

f) Resistance to distortion at the temperatures to which the enclosure is subjected under conditions of intended and unintended use. For a nonmetallic enclosure, all of these factors are also taken into account with respect to thermal aging.

6.6 Polymeric materials used for the enclosure to render inaccessible parts that present a risk of electric shock or injury to persons or reduce the risk of propagation of flame, shall comply with the requirements of the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C.

6.7 The bottom shall be complete to protect all electrical parts. For the bottom of movable products, consideration shall be given to the possibility of the products being placed on objects that are able to damage wiring or other components.

6.8 The enclosure of a product shall be constructed so that molten metal, burning insulation, flaming particles, or other similar debris, are unable to fall upon combustible materials, including the surface that supports the product.

6.9 The requirement in 6.8 requires the use of noncombustible barriers, bottom panels, or protective pans under:

a) Wire unless it is of the flame-retardant type. Thermoplastic- and neoprene-insulated wires are examples of this type.

b) A switch, relay, solenoid, transformer, motor, or other component, unless it is shown that malfunction of the component does not result in a risk of fire.

c) Printed-circuit boards.