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Standard Guide for the Safe Use of Table Saws¹

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1. Scope

1.1 This guide provides information promoting the safe use of table saws based on recommended practices in the United States, but may not reflect practices outside of the U.S. This guide includes the following activities:

- 1.1.1 Installation;
- 1.1.2 Setup;
- 1.1.3 Operation; and
- 1.1.4 Maintenance.

1.2 This guide is intended to be used by table saw operators as well as employers who utilize table saws in their operations.

1.3 This guide applies to the use of electric motor-operated, cord-connected, or permanently connected table saws intended for cutting wood and analogous materials, plastics, and non-ferrous metals except magnesium, used in the following applications:

- 1.3.1 Consumer;
- 1.3.2 Industrial; and
- 1.3.3 Commercial (for example, governmental, educational, or business).

1.4 This guide does not apply to:

- 1.4.1 Handheld tools;
- 1.4.2 Table saws with an automatic feeding device;
- 1.4.3 Table saws fitted with abrasive wheels for cutting or surface finishing;
- 1.4.4 Table saws intended to cut ferrous metals, magnesium, or both;
- 1.4.5 Table saws with more than one spindle such as for a scoring blade; and
- 1.4.6 Sawmills.

1.5 *Units*—The values stated in inch-pound units are to be regarded as the standard. No other units of measurement are included in this standard.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appro-*

priate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards*:²

E1542 Terminology Relating to Occupational Health and Safety

2.2 *OSHA Standards*:³

29 CFR 1910.213 Woodworking Machinery Requirements
OSHA Publication No. 3157 A Guide for Protecting Workers from Woodworking Hazards

2.3 *ANSI Standards*:⁴

ANSI/ISEA Z87.1 American National Standard for Occupational and Educational Personal Eye and Face Protection Devices

ANSI/UL 62841-3-1 Electric Motor-Operated Hand-Held Tools, Transportable Tools and Lawn and Garden Machinery—Safety—Part 3-1: Particular Requirements for Transportable Table Saws

ANSI/UL 987 Standard for Stationary and Fixed Electric Tools

3. Terminology

3.1 *Definitions*:

3.1.1 For definitions of terms used in this guide, refer to Terminology E1542.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *anti-kickback device, n*—a device that allows the movement of the workpiece in the cutting direction but reduces

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210, <http://www.osha.gov>.

⁴ For referenced ANSI standards, visit the ANSI website, <https://webstore.ansi.org>, and the UL Standards Sales Site <https://www.shopulstandards.com>.

the likelihood of the rapid movement of the workpiece in the direction opposite of feed.

Discussion—Definitions of specific types of anti-kickback devices are given in 3.2.1.1 – 3.2.1.8.

3.2.1.1 *featherboard*, *n*—spring-like fingers that are in contact with the workpiece.

Discussion—The fingers are designed to allow unobstructed movement of the workpiece in the feed direction and to provide a restraining force on the workpiece in the opposite direction.

3.2.1.2 *kickback pawls*, *n*—an anti-kickback device attached to a splitter/spreader or an extended riving knife.

3.2.1.3 *one-directional roller*, *n*—an anti-kickback device typically attached to a rip fence.

3.2.1.4 *riding knife*, *n*—a device located behind and in the plane of the saw blade, within the cutting capacity of the saw blade and in a fixed proximity to the saw blade through an entire depth of cut and bevel angle operating range of the saw blade, with an intended function to reduce the risk of saw blade pinching and binding.

Discussion—Definitions of specific types of riding knives are given in 3.2.1.5 – 3.2.1.7.

3.2.1.5 *adjustable extended riding knife*, *n*—a device designed to function at least in one position as an extended riding knife and in a second position as a riding knife.

3.2.1.6 *extended riding knife*, *n*—a device in all aspects identical to a riding knife, except it extends above the maximum cutting capacity of the saw blade to allow the mounting of a saw blade guard or an anti-kickback device, or both.

3.2.1.7 *fixed extended riding knife*, *n*—an extended riding knife that is fixed in position.

3.2.1.8 *splitter/spreader*, *n*—a device located behind and in the plane of the saw blade, extending above the cutting capacity of the saw blade through the entire depth of cut and bevel operating range of the saw blade.

Discussion—This device is also commonly known as a spreader.

3.2.2 *blade guarding system*, *n*—a system of safety devices that jointly function to provide barrier protection, as well as chip and other debris deflection at or near the saw blade area and kerf separation and help maintain workpiece alignment, and restraint in the event of kickback.

Discussion—Definitions of specific types of guarding systems are given in 3.2.2.1 – 3.2.2.4.

3.2.2.1 *3-in-1 blade guard*, *n*—an assembly that consists of a hood-type barrier which encloses the sides and top of the saw blade, a splitter/spreader, and an anti-kickback device.

3.2.2.2 *manually adjustable blade guard*, *n*—a blade guard that does not open in response to the advancing workpiece and requires manual adjustment for the material thickness being cut.

3.2.2.3 *modular blade guard*—consists of an extended riding knife, self-adjusting sides of the saw blade barriers, a fixed top of the saw blade barrier, and an anti-kickback device.

Discussion—The saw blade barriers and the anti-kickback device are independently secured (removable) to/from an

adjustable extended riding knife. The extended riding knife can be adjusted to a non-through cutting position.

3.2.2.4 *overhead blade guard*, *n*—a hood-type barrier enclosing the saw blade.

Discussion—The hood barrier is not attached to a splitter/spreader or an extended riding knife, but can be suspended from the ceiling or held by a supporting arm or a stand-alone device.

Discussion—The riding knife and the anti-kickback devices are mounted to the table saw under the table top.

Discussion—An overhead blade guard is also known as an overarm blade guard.

3.2.3 *cutting capacity*, *n*—the height of the highest saw blade tooth tip above the table top for the particular depth setting of the saw blade at 0° bevel position.

3.2.4 *fence*, *n*—a device to locate/guide the workpiece during the cutting process.

Discussion—Definitions of specific types of fences are given in 3.2.4.1 – 3.2.4.6.

3.2.4.1 *auxiliary fence*, *n*—a stationary spacer used in conjunction with a rip fence to help avoid the interference between a blade guard and the rip fence.

3.2.4.2 *cross cutting fence*, *n*—a fence with the workpiece guiding surface perpendicular to the cutting device or set to a miter angle with respect to the cutting device and designed to move parallel with the plane of the saw blade during the cutting process or to position the workpiece for a table saw with sliding function.

3.2.4.3 *rip fence*, *n*—a fence that has the workpiece guiding face parallel with the plane of the saw blade and can be set to a desired distance from the saw blade.

3.2.4.4 *sacrificial fence*, *n*—any fence, except for the fence supplied with the table saw, that may be cut by the cutting device during the desired operation.

3.2.4.5 *tall auxiliary fence*, *n*—an additional guiding surface which is attached to the rip fence and provides additional guidance and stability to the workpiece standing on its edge during “resawing” and “raised panel” cutting operations.

3.2.4.6 *temporary fence*, *n*—a fence-like workpiece guiding device, typically used for cove cutting, that is temporarily fastened to the table top such that the workpiece guiding face of this fence is not parallel with the plane of the saw blade.

3.2.5 *fixture*, *n*—a fixed device to locate and hold the workpiece in the desired position so operations can be performed without guiding or supporting the workpiece by hand.

Discussion—The fixture’s design is typically dependent upon the shape of the workpiece, the operation being performed, or both.

3.2.6 *freeland cut*, *n*—any through cut or non-through cut performed where the workpiece is guided through the saw blade only by the operator’s hands, without any guiding devices (for example, a cross cutting fence, rip fence, fixture, or hold-down device) to keep the workpiece from twisting during the cut.

3.2.7 *jig*, *n*—a moveable device to locate, hold, and guide the workpiece in the desired position so operations can be