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.

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# Standard Terminology of Railing Systems and Rails for Buildings[1]

This standard is issued under the fixed designation E1481; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This terminology consists of terms and definitions pertaining to railing systems and rails for buildings, and in particular, terms related to the standards generated by ASTM Committee E06 on Performance of Building Constructions.

1.2 The purpose of this terminology is to provide meanings and explanations of technical terms, written for both the technical expert and the non-expert user.

1.3 This terminology is one of a group of special terminologies subsidiary to the comprehensive Terminology E631.

1.4 Terms are listed in alphabetical sequence. Compound terms appear in the natural spoken order. Where definitions herein are adopted from other sources, they are exact copies. The source is identified at the right margin following the definition and is listed in Section 2.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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]

E631 Terminology of Building Constructions

E935 Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings

E985 Specification for Permanent Metal Railing Systems and Rails for Buildings (Withdrawn 2015)[3]

2.2 *ANSI/ASSE Standard:*[4]

A1264.1 Safety Requirements for Workplace Floor and Wall Openings, Stairs, and Railing Systems

## 3. Terminology

3.1 *Definitions:*

**baluster, baluster bar,** *n*—one of a series of closely spaced, upright, and parallel infill members of a balustrade, located between top rail or handrail and bottom rail or tread or floor beneath balustrade. (Synonym for **picket**.)

**baluster casting—**an ornamental cast element attached to a baluster. Also, cast element designed to attach baluster to top and bottom rails.

**baluster railing system—**a system consisting of posts, balusters, top rail, and bottom rail.

**balustrade,** *n*—a railing system consisting of a row of balusters capped by a rail or handrail.

**bottom rail—**the lowest member of a railing system, supporting balusters or panels, if any.

**building,** *n*—a structure comprising a partially or totally enclosed space, erected by means of a planned process of forming and combining materials. **E631**

**cap,** *n*—a fitting or plug used to close the end of a pipe, tubular post, newel, or rail.

**cap rail—**a secondary railing element, often a handrail, fastened to the top rail of a railing system. (Synonym for *rail cap*.)

*collar*, *n*—Synonym for **escutcheon**. **E631**

*cover flange*—Synonym for **escutcheon**. **E631**

*cover plate*—Synonym for **escutcheon**.

*cover ring*—Synonym for **escutcheon**.

[1] This terminology is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.56 on Performance of Railing Systems and Glass for Floors and Stairs.

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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] The last approved version of this historical standard is referenced on www.astm.org.

[4] Available from American Society of Safety Engineers (ASSE), 520 N. Northwest Hwy., Park Ridge, IL 60068, http://www.asse.org.

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**drop cap—**the cover of a railing post or newel that is exposed to view, usually below the stair stringer or floor. **E631**

**easement,** *n*—the curved portion of a rail and handrail forming a transition in the vertical plane between the horizontal and inclined sections of a handrail.

**escutcheon,** *n*—a protective or ornamental cover located at the termination of a post, baluster, or rail against a tread, floor, or wall. (Synonym for *collar, cover flange, cover plate*, or *cover ring*.)

*expanded metal*—See **screen**.

**finial,** *n*—an ornamental piece on the top of a post, newel, or railing; frequently in the form of an urn or pineapple, and so named. **E631**

**flange,** *n*—a flat plate or formed piece at the end of a railing or rail element for attachment to the adjoining construction or supporting member.

*grab bar*—Synonym for **grab rail**. **E631**

**grab rail—**a short length of rail located for safety or convenience to assist a person in movement at a specific location. (Synonym for *grab bar*.) **E631**

**guardrail system—**a railing system, providing protection for building users against accidental fall and injury, located at or near the outer edge of a stair, ramp, landing, platform, deck, balcony, hatchway, manhole, floor opening, porch, or accessible roof; at the perimeter of an opening or accessible surface, such as the opening of a stair; or at a location at which an operating condition requires access limitation to a designated area. (Compare **railing system**.)

**handgrip,** *n*—the part of a handrail designed to provide a secure grasp. **E631**

**handrail,** *n*—a horizontal, sloping, or vertical member normally grasped by hand for guidance or support.

Discussion—This member may be part of a railing system and is often, but not necessarily, a top member (top rail), or may be mounted on a wall or other building element. When part of a stair-rail system, it is a member paralleling pitch of stair flight and is often, but not necessarily, a top member. (Compare **wall handrail**.)

**handrail bracket—**a device attached to a wall, post, or other surface to support the handrail. **E631**

**handrail height—**the vertical distance from the top surface of the top rail to the surface of the finished floor, top of a ramp, or the nosing line of stair treads. **E631**

**infill,** *n*—a series of balusters of a baluster railing system and the structural as well as the decorative elements, including the panels, mesh, or similar elements, of a panel railing system; located between top and bottom rails and posts; to serve the twofold purpose of (*a*) protecting bodies from penetrating and falling through the baluster and panel infill areas and (*b*) providing a specified resistance to horizontal thrusts as are potentially encountered within the infill area.

Discussion—Infills should be designed in such a way as to deter climbing of the railing system.

**infill area—**the field of baluster and panel railing systems, bordered by top and bottom rails and posts. **E935**

**intermediate rail—**one of two or more rails between the top rail and floor.

*kick plate*—Synonym for **toe board**. **E631**

**lamb's tongue—**an ornamental curved or tapered fitting terminating a handrail, usually tapered to the tip.

**lateral scroll—**a fitting that curves in a horizontal plane, used to terminate a handrail; often ending as a round plate covering the top of a post. **E631**

**mid rail,** *n*—a rail located between top rail and bottom rail or between top rail and floor if there is no bottom rail.

**miter ending—**an angular or dovetailed member end, designed to fit an adjacent matching member, thereby providing continuity of profile at the connection.

**newel,** *n*—a decorative or structural post member at the start or end of a stair run, often extending above a handrail; usually square or rectangular in cross section, supporting the end of a stair railing or serving as the common support for two stair railings, often supporting a stair stringer and platform; also, the center post of a spiral stair.

**ogee,** *n*—a molding with a profile having a double curve formed by a convex line turning into a concave line, resulting in an S-shape. **E631**

**panel,** *n*—a flat infill element between a top rail, bottom rail, and posts. **E631**

**picket,** *n*—Synonym for **baluster, baluster bar**.

**pineapple,** *n*—a finial in the form of a pineapple. **E631**

**pipe,** *n*—hollow round section of metal or other material, the size of which is usually designated by nominal size, in inches (millimetres), as influenced by inside diameter and wall thickness.

**pipe railing system—**a railing system fabricated of pipe or round tubing.

**post,** *n*—a vertical supporting member. **E631**

*queue-rail system*—Synonym for **traffic-rail system**.

**rail,** *n*—a horizontal, inclined, or vertical member of a railing system, such as top, intermediate, or bottom member connecting balusters or posts, or both, at specified intervals. (Compare **handrail**.) **E631, E985, A1264.1**

*rail cap*—Synonym for **cap rail**. **E631**

*railing*, *n*—Use **railing system**. **E631**

**railing return—**a bent at the end of a handrail, turning toward the wall or post to which the handrail is attached.

**railing system—**a framework of horizontal, inclined, vertical, and infill members, including panels and grillwork, for

protection of building occupants against fall or injury and for offering safety and convenience in their movement. (Compare **guardrail**.)

**railing-system penetration limitation—**an arrangement of railing elements designed to prevent passage of a sphere of specified diameter through a railing system. **E631**

**ramp-rail system—**a railing system located along the open sides of a ramp. **E985**

**screen,** *n*—a perforated sheet consisting of wire mesh, woven or welded wire fabric, or standard or flattened expanded metal; serving as an infill panel and being an integral part of a panel railing or guardrail system.

**scroll,** *n*—a cast or forged ornamental spiral of convoluted shape, serving, for example, as a decorative panel or insert.

**side mount—**a railing-system support that anchors the post or baluster of a railing system to a vertical or inclined surface, such as a fascia or stair stringer.

**spindle,** *n*—a tapered baluster of circular cross-section(s), having a center diameter larger or smaller than the diameter at its ends.

**stair-rail system—**a railing system located along the open sides of a stair or landing. (Compare **guardrail, railing,** or **stair-rail system**.) **E985, A1264.1**

**toe board—**a vertical plate at the bottom of a railing system located at the open edge of a stairwell, platform, ramp, or floor; forming a low curb to provide a barrier preventing objects from falling beyond it. (Synonym for *kick plate* or *toe plate*.)

DISCUSSION—Toe boards are normally not used for stair-rail systems.

*toe plate*—Synonym for **toe board**. **E631**

**top rail—**the uppermost member of a railing system. **E631**

**traffic-rail system—**a railing system designed to control the movement of people and requiring special consideration for given use conditions. (Synonym for *queue-rail system*.) **E631, E985**

**transfer-rail system—**a railing system designed to support and to permit the transfer of body weight in such locations as toilets, showers, and tub enclosures. **E631**

DISCUSSION—The clearance between the rail and the face of the mounting surface shall be 1.5 in. (40 mm). **E985**

**tube/tubing—**hollow section of metal or other material having a round, square, rectangular, or other cross-sectional form, its size being designated by outside dimension(s) and wall thickness, in inches (millimetres).

**urn,** *n*—an ornamental vase used as a finial.

**volute,** *n*—an ornamental spiral or scroll-shaped form serving, for example, as the handrail termination. **E631**

**wall bracket—**a bracket used for anchoring the central portion of a handrail to a wall.

**wall clip—**a bracket used for anchoring the end of a handrail to a wall. (Synonym for *wall flange*.)

*wall flange*—Synonym for **wall clip**.

**wall handrail—**a handrail attached to a wall or other building element adjacent to a stair and along landings, walkways, ramps, and corridors. (Synonym for *wall rail*.)

DISCUSSION—Wall handrails shall parallel the pitch of a stair and the slope of other inclined floor surfaces.

*wall rail*—Synonym for **wall handrail**. **E631**

**wall railing return—**a bend at the end of a wall handrail, turning toward the wall to which the handrail is attached.

*wire fabric*—See **screen**.

*wire mesh*—See **screen**.

## APPENDIX

**(Nonmandatory Information)**

### X1. COMMONWEALTH AND EQUIVALENT COMMONWEALTH TERMS, AS USED IN SOME OF THE ENGLISH-SPEAKING COUNTRIES OUTSIDE THE UNITED STATES

X1.1 **wreath**, *n*—the compound curved section of a handrail that provides handrail continuity and the transition of two adjoining and diverging stair-flight handrails. (Compare **easement**.)

X1.2 Terms used in the United States and their equivalent Commonwealth terms are given in Table X1.1.

**TABLE X1.1 United States and Equivalent Commonwealth Terms**

| U.S. Terms | Equivalent Commonwealth Terms |
|---|---|
| barbed | jagged |
| buckled | crippled |
| clinched | clenched |
| connection | joint |
| dent | dimple |
| fastening | fixing |
| finished nail head | lost nail head |
| guardrail system | guarding |
| limit-state design | capacity design |
| puttied over | stopped |

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