Stairway Manufacturers' Association Glossary of Stair Terminology

A

Apron – A trim board attached to a vertical surface used to support the projected edge of a window stool or *landing nosing*. (See also *Fascia*)

B

Balanced Steps – *Winders* that do not radiate from a common center but are distributed uniformly through equal segments of the *walk line*. Also called dancing *steps.*

Balcony – An elevated area of floor with a *balustrade* visible from below

Balusters – A vertical member used to in-fill and restrict the size of openings within a *balustrade* and/or provide support to the top of a *balustrade* or *guard* system by transferring a portion of the load applied to the *balustrade* to the structure of a *stair* or floor system.

Balusters, Raked – Balusters with *plinths* or end blocks that follow the rake or inclination of the stair

Balusters, Stepped – Balusters with *plinths* that are of uniform height above the tread.

Balustrade – A system of *rails*, *newels*, *balusters, panels or* other ornamental components used to separate two areas. *Balustrades* used to minimize falls from elevated walking surfaces and the sides of stairs are also *guards*.

Banister – A simple *post-to-post balustrade* typically with small diameter, square or rectangular section *balusters* used to provide a handrail and minimize falls from the side of *stairs*.

Bending Rail – Thin, flexible, longitudinal-sections of a *rail profile* that are molded individually such that bending and laminating the strips together will provide a curved rail in the composite profile of the combined strips.

Blocking – Wood blocks or other elements attached to the building structure to provide for the transfer of loads and/or the secure fastening of objects at points between structural elements such as studs or joists where voids in the structure would not permit secure fastening.

Bowed Riser – A *riser* that is curved in plan to provide *balanced winders*

Box Newel – A *newel*, usually square in section, often made as a "box" with a hollow center, from boards joined at the corners.

Box Stair- 1. Stairs with *closed stringers* on each side that "box in" the treads and risers. 2. A prefabricated straight *flight* of *stairs* with *closed stringers*.

Bracket – 1. A triangular structural support element used to transfer loads from one element to another by changing the direction of the applied load. 2. A support used to attach a *Handrail* to a wall. 3. An element connecting the tread and riser usually applied to the *face stringer* as a decoration. 4. An element attached to a *stringer* to support a *tread.*

Bullnose – 1. A descriptive term for a radius *moulding profile* applied to the edge of a *moulding*. 2. A type of *starting step* with half circular end(s) in plan projecting beyond the width of the stairs above. 3. A moulding with a rounded edge such as a *landing tread* or *landing nosing*.

Buttress – A closed *stringer* built up in thickness with a *cap* to receive the *balusters* and a fascia applied on the exposed face.

C

Cap – 1. A moulded object or board used to finish the top of an object such as a wall, or *closed stringer*. 2. That part of a *rail fitting* that is attached to the top end of a *newel*. 3. The applied top of a *box newel*.

Cap, Tandem – A horizontal *rail fitting* used to connect two *rails* at an angle of 180-degrees at the top of a *newel*.

Cap, Opening – 1. A horizontal *rail fitting* at the start of a level *balustrade* system at the top of a newel. (See cap) 2. A horizontal *rail fitting* used as a component of a *starting easement* at the top of a *starting newel*.

Cap, Quarter Turn – A horizontal *rail fitting* used to connect two *rails* at an angle of 90-degrees at the top of a *newel*.

Carriage – A system of *rough stringers* attached to the building structure providing for the support and or attachment of the *treads*, *risers* and *face stringers* of a *stair* and the ceiling or *soffit* below.

Circular stair – A curved *stairway* that is circular in plan

Closed string – A *stringer* that encloses the ends of the treads and risers typically with the top edge following the angle of the stair.

Cove – A supporting *moulding profile* with a concave quarter round radius or arc on the *face*

Curb Stringer – A *buttress* stringer

Curtail Step – See *Volute step*

Curved stair – A *stair* with some portion having an arc in plan that is a radius, elliptical or a combination of radii.

Cut String (see also Open String) – A *stringer* cut or notched on the upper edge to fit the *profile* of the *stairs*.

Cut Stringer, Mitered – A cut stringer with the riser cuts mitered to accept a riser with a complimentary miter.

D

Dextral stair - A *stair* that turns to the right during ascent.

Dogleg stair - A stair with two flights separated by a *half landing*, and having no *stairwell*, (in elevation the angles of the flights form a dogleg shape).

Drop – An ornamental element used at the bottom end of a *newel*.

E

Easing – 1. An arc that is tangent to two straight intersecting lines providing a smooth rounding instead of an angular intersection. 2. An *easement* in a rail or stringer, i.e. *up easing*, *over easing.* 3. Sanding or shaping a radius on the corner of a board to yield an “eased edge”.

Easement – A component that provides a vertically curved *easing* between two intersecting *rails* or a *rail* and *cap* as in a *starting easement*.

F

Face Stringer – The exposed *stringer* on the open side of *stairs*. Called a *skirt board* or *fascia* when not supporting the *treads* and *risers*.

False End Tread or Riser – Decorative elements resembling the end of a *tread* or *riser* applied to the surface at the end of a structural *sub-tread* or *riser* with the remaining exposed *sub-tread/riser* to have a floor covering applied such as carpet.

Face – 1. The side of a board that is exposed or visible in the finished product. 2. Describes an element that is visible i.e. face *string.*

Fascia – A trim board applied to a vertical surface, often with a moulding applied above and/or below.

Fillet – A thin strip or moulding that fills the exposed plow or groove between *balusters* in a *rail*, *bottom rail*, *shoe rail* or *cap*.

Finial – An ornamental element used at the top end of a *newel post*.

Fitting, Rail – A component or combination of components that are profiled to match *rail* patterns and used to provide a continuous *rail*, horizontal changes in direction, vertical transitions, or ornamentation.

Flier or Flyer – A Rectangular *tread*

Flight – An uninterrupted series of *steps* from one *landing* to the next.

Fluting – A series of parallel round bottom grooves used as decorative details in vertical surfaces of such elements as *balusters* or *newels.*

Freestanding Stair – A *stair* that is unsupported by walls and attached only to the floor systems at the top and bottom of the *flight*.

G

Gait Line – A line that follows the angle of the stair connecting the *nosings* of the *treads* also called *nosing line*

Geometrical Stair – A *stair* of complex geometry in which the *strings* and *rails* are continuous from start to end with curved and straight segments of the *stairway* connected by *wreaths*, typically without *newels,* except the *starting newel*.

Glue blocks – Blocks of wood attached to the underside of a *stair* at the concealed junction of the *risers, treads,* and or *stringers* to minimize movement that causes squeaks.

Going – The horizontal distance between two successive *nosings*. (See *run*, *tread depth*)

Gooseneck – A combination of *easing(*s*), rail* segments and/or *caps* that provide for the continuous transition of a *rake rail* to level at the top of a *flight* or from *rake rail* through a level turn to a *rake rail* at a turn in the *stairway*.

Gradient of a stair – The ratio between the *rise* and *run* of a *stair* used to relate the steepness in use, typically considered to be between 20 and 42-degrees when expressed as angle. Differing from ladders, which are steeper, and ramps, which are less steep.

Guard – A component or system of components such as *rails*, *newels*, *balusters, panels* or other ornamentals used to minimize falls from elevated walking surfaces and the sides of *stairs*.

H

Half Newel – A *newel* cut in half longitudinally used against a wall to provide for the termination of a *balustrade*.

Hand – 1. The direction a *stair* or *handrail* turns in ascent. (left or right) 2. The side of the *stair* as viewed in ascent. 3.The end of a component as referenced by the side of the *stair* in ascent i.e. left hand *starting step,* right hand *returned tread*.

Handrail – A sloped or horizontal *rail* intended for grasping by the hand as an assist for; guidance, support, pulling, or arresting a fall.

Handrailing – The art form of designing and constructing wreathed handrails for geometrical stairs.

Header – 1. A floor-framing member at the edge of a floor opening that “heads off” the floor joists running up to a *well opening*. 2. The joist(s) at the edge of a floor opening. 3. The joists at the edge of a *landing* supporting the end of a *flight*.

Headroom – 1. The clear vertical space allowed for passengers on a *stairway* to prevent striking the head. 2. The vertical distance from the plane of the *nosings* of a *flight*, extended to the floor beyond the first *riser*, to any obstruction above the walking surface of the *stair* generally a minimum of 80 inches throughout the *stairway* including the *landings*.

Helical stair – A stair that ascends with identical *winders* within the space that can be defined between two cylinders of concentric circular plans.

Horse – 1. The triangular area of a *cut string carriage* to which the *tread* and *riser* are attached. 2. A *rough string*.

Housed stringer – A closed *stringer* that "houses" the ends of the *treads* and *risers* projecting into routed recesses in the *stringer*. (See routed stringer)

I

J

K

Kerfing – A wood bending technique using a series of uniform, shallow cross cuts on the back of a board that do not penetrate the *face* allowing the back surface to compress to a smaller radius increasing the flexibility without reducing the thickness.

Kite – A *winder* in a 90-degree corner that is shaped like a kite in plan.

L

Landing – 1.The space at the top and bottom of a *flight* at a floor level to provide clear approach to the *stair* or the floor level from the *stair*. 2. An intermediate *platform* between *flights* used to change direction of the *stair* and/or provide a resting place typically with dimensions approximating the width of the *flights* served.

Landing, Half Space – An intermediate *landing* turning the *stair* 180 degrees

Landing, Quarter Space – An intermediate *landing* turning the *stair* 90 degrees

Landing Newel – A *newel* located at a *landing* or *balcony*.

Landing Newel, Intermediate – A newel located at a *landing* or *platform* between *flights* in a *stairway* or at a turn of *winders*.

Landing Nosing – A moulding used to finish the floor or landing edge at a level *balustrade*.

Landing Tread – 1.The top *tread* in a *flight* supported by the top *riser* that is attached in alignment with the floor-surface with the same *nosing projection* as the *treads* in the *flight* below. 2. The moulding used as *landing tread* and *landing nosing*.

Level Quarter Turn – A *rail fitting* that turns 90 degrees in the level or horizontal plane.

Level Rail – A horizontal *balustrade* attached to a floor or *landing*.

M

Moulding Profile – see rail profile

Mortised Stringer – see housed stringer

N

Newel or Newel Post – 1. A vertical element or *post* used to connect *balustrade* components to the structure of a *stair* or floor system. 2. A vertical *post* to which *carriages*, *stringers* and *balustrades* can be attached at junctions and angular turns in the *stairway* to provide the main support for the *stairs* and *balustrades*.

Nosing – 1. The leading edge of the *tread* 2. The *moulding profile* on the leading edge of the *tread*.

Nosing Line – see *gait line*

Nosing Projection or Overhang – The horizontal distance measured from the leading edge of the *tread* to the trailing edge of the *tread* below.

Nosing, Return – A moulding matching the *nosing moulding profile* and projection of the *tread nosing* that is mitered to the tread nosing and used to project the end of a *returned tread* over the *cut string face* with identical detail to the projection of the *tread nosing* past the *riser face*.

O

Open Riser Stair – A *stair* without *riser*s such that the space between the *treads* is open.

Open Stair – a *stair* that has an *open stringer* on one or both sides

Open Stringer – A *face* stringer that is cut out for the treads and risers such that the profile of the steps can be seen from the side

Open Well Stair – a *stair* having a *stairwell*

Over Easing – Typically used to describe an *easing* in a rail with the center of its arc below the top of the rail.

Over-the-Post – A *balustrade* system that uses *fittings* to provide a continuous *handrail* over the top of the newel *posts*.

P

Partial Open Stair - A *stair* that has an open side that becomes closed by a wall part way up the *flight*.

Picket – A vertical element of a fence not used in *stairs* or *balustrades*.

Pin Top Baluster – A *baluster* with a round top that is fitted into holes in the bottom of the *rail*.

Pin Top Newel – An *Over-the-Post newel* that has a dowel pin turned on the top to fit into a hole in the *cap* of a *rail fitting*.

Pitch (see also Rake) – The slope or angle of a *stair* in reference to the horizontal plane

Pitch Block – A block of wood cut to a right triangle with the rise and run dimensions of a stair and used as an angle gauge in *stairbuilding* and *handrailing*.

Platform – 1. An intermediate *landing* in a *stairway*. 2. The extension of the floor *landing*, which is often used as the top, *tread* of a *spiral stairway*.

Plinth – The base of a baluster or newel

Plow – A groove with flat bottom in the length of a board or moulding

Plowed rail – A *rail*, which has had the bottom, grooved or plowed to accommodate insertion of a square *baluster* and *fillet*.

Plumb – Vertical, perpendicular to level.

Posts – see *newel*.

Post-to-Post – A *balustrade* system with *rails* that are interrupted by intersections with the side of the *newels*.

Q

Quarter Turn Fitting – A horizontal *rail fitting* that turns 90 degrees.

Quarter Turn Step – A *starting step* with a quarter circle in plan

R

Rail Bolt – A hanger bolt used to join *rails* ends to *fittings*, *newels* or walls.

Rail Fitting – A *rail* component or part used to join *rails* in a continuous fashion through horizontal turns or vertical transitions or to provide for a change in direction for the purpose of attachment to a wall or newel.

Rail Profile or Moulding Profile – The shape as described by a section of a *rail* or moulding

Rake – 1. Used to describe the particular angle of an object. 2. Used to describe an object as being inclined i.e. rake rail

Rake Rail - A *rail* at an angle or *pitch*; typically a *rail* on a *stair*.

Ramp – see *up-easing*

Reeding – A series of parallel beads used as decorative detail in vertical surfaces of such elements as *balusters* or *newels.*

Returned End – 1. The end of a moulding profile that has been mitered to extend the profile across the end and conceal the end grain 2. A handrail fitting that with the *moulding profile* shaped on the end grain and used as a termination for the end of a rail.

Returned Tread – A *tread* used on *open stringer stairs* with the *nosing* "returned" to project over the *cut face string* at the end of the *tread* by mitering a matching *return nosing* to the end of the *tread*.

Return Nosing – see *Nosing, Return*

Rise – The vertical distance between the leading edges of adjacent *treads*. Referred to in building codes as *riser* height.

Riser – The vertical component of a *step* filling the space between the *treads*.

Rosette – A decorative and anchoring wall plate used to terminate a *rail* into a wall.

Rough Stringer – A *cut stringer* to which the treads and risers are attached that is concealed and attached to the structure.

Routed Stringer – See *housed stringer*

Run – the horizontal distance between two adjacent tread *nosings* on a *stair*.

S

Scotia – A *cove* moulding that is taller than wide with elliptical concavity attached to the underside of the projected *tread nosing*.

Scroll – The terminal end of a volute that is in the horizontal plane.

Scroll Step –See *volute step*

Shoe Moulding – A convex shaped quarter round moulding, used at the joint between base and floor and where the starting *riser* meets the floor.

Shoe Rail – 1. A plowed *rail* that is used to receive the square bottom end of balusters when they are not connected directly to the treads (see also *bottom rail*). 2. A *cap* on the top of a *closed stringer, buttress* or wall that is plowed to receive the bottom square end of balusters

Sinistral Stair – A *stair* that turns to the left in ascent

Skirt Board – A non-structural *fascia* used to trim the sides of stairs to which the treads and risers are fitted.

Soffit – The visible ceiling attached to the bottom of a *stair* between the opposite stringers and/or opposing wall(s).

Sphere Rule – refers to the building code that restricts openings in *guards* to the size of a certain sphere that shall not pass through the *guard*.

Spindles – Turnings such as those used in chairs. Spindles are not used in *stair balustrades.*

Spiral Stair – A *stairway* that is circular in plan with uniform *winders* attached to and radiating from a minimum-diameter support column. (Spirals diminish to a point. The term is used here to describe the common visual perception not the geometric form of the stairway)

Stair – 1. A *step* or change in elevation of one *riser* height. 2. A change of elevation consisting of one or more *risers*. (International Code Council)**

Stairs – A series of *steps.* 2. A change of elevation consisting of one or more *risers*. (International Code Council)**

**The ICC requires both singular and plural forms to have the same meaning

Stairbuilder – A person with skills specific to the arts of designing and constructing stairways, and balustrades.

Staircase – That part of the building set apart for the stairs and balustrade generally including the well opening and adjacent walls.

Stairway – One or more *flights* of *stairs*, with the necessary *landings* and *platforms* connecting them, to form a continuous and uninterrupted passage from one level to another. (International Code Council)

Stairwell – The inner clear opening formed by turning flights within a well opening or a flight and the well opening.

Starting Easing – A *rail fitting* comprised of an up easing and opening cap used at the bottom of a *stairway* attached to a *starting newel*.

Starting Fitting – A *rail fitting* comprised of an *up easing* with a *cap*, *turnout*, or *volute/scroll* used at the bottom or beginning of a *stair* attached to a *starting newel*.

Starting Newel – The first *newe*l used at the bottom or beginning of a *stairway*.

Starting Step – 1. A tread with curved end that is used at the start of the stairway at the bottom. 2. The first tread and riser at the bottom of the stair.

Starting Step, Bullnose – A *tread* with half round end(s) in plan projecting beyond the *face string* of the *stair*.

Step- 1. A change in elevation of one riser height to a floor or landing without a tread. 2. A unit segment of a *stair*, consisting of a *riser* and a *tread*.

Steps – A series of treads, typically a single flight with or without a landing at the top.

Stringer or String – The inclined boards to which the *treads* and *risers* are attached that serve to transfer both live and dead loads of the stair to the structure. See also stringers listed by types; *buttress, closed, curb, cut, open, face, housed, mortised, rough, routed*

Stringer Margin or Reveal – 1.The distance from the *gait line* to the top edge of a *closed stringer*. 2. The width from the bottom of a *cut string* to the depth of the cut notch.

Sub-Tread – A concealed rough tread used to support the visible finish tread.

T

Total Rise – The vertical distance of a *stairway* from finish-floor to finish-floor.

Total Run – The total horizontal distance of a *flight* of *stairs*.

Tread – The horizontal part of a *stair* upon which the foot is placed.

Tread depth – The term used in building codes for *run* or *going*

Turn out – 1. A starting *rail fitting* or *starting step* that turns 90 degrees to the *starting newel* offset beyond the width of the stair above.

U

Up easing – 1. Typically used to describe an *easing* in a rail with the center of its arc above the top of the rail.

V

Volute- A starting *rail fitting* that is designed as a spiral in plan by connecting a series of 90-degree arcs diminishing in radius by a constant value or proportion. Typically a volute consists of some portion that is flat in the horizontal plane, called a *scroll,* connected to a *wreath or easing* portion that makes the transition to the connection with the rake rail.

Volute, Vertical – A starting *rail fitting* that is a spiral designed in elevation by connecting a series of 90-degree arcs diminishing in radius by a constant value or proportion.

Volute Step (see also scroll step)– A type of *bullnose starting step* with a *nosing* designed concentric to the plan of the *volute or scroll* through at least 180-degrees. Since the spiral of the nosing must be “curtailed” to maintain the integrity of the step these are sometimes called Curtail Steps.

.

W

Walk line-1. The most common path of travel used in the design of *winders* determined by the distance from the *handrail* to the closest foot when the *handrail* is used in travel on a *stairway*. 2. A point at which *winders* are regulated for depth by building codes, measured 12 inches from the side of the *stair* where the *treads* are narrower on that portion within the usable width.

Wall Rail – A *handrail* mounted to a wall.

Wash – The slight horizontal sloping of *treads* such that the leading edge is lowest to allow water to run off and minimize wear at the *nosing* edge.

Well hole or Well Opening – The opening in a floor through which a *stairway* ascends.

Winder – A *tread* with nonparallel edges.

Winding stair – A stair that turns with winders.

Wreath – 1. A *handrail* that has a curve in plan and elevation referred to as double curvature or a compound curve. 2. A *handrail* or *string* transition that "twists" between a *rake* and level or two *rakes* at a curve in the plan of the *stair*(s) or *handrail*. 3. To twist

X

Y

Z