Glossary of roofing terms.

Air barrier
The assembly of materials used in building construction to reduce or retard the uncontrolled passage of air into and out of the building.

Aluminum
A nonrusting, malleable metal sometimes used for metal roofing and flashing.

Apron flashing (Includes illustration)
A term used for a flashing located at the juncture of the top of a sloped roof and a vertical wall, chimney or steeper-sloped roof.

Architectural shingle
See "dimensional shingle."

Asphalt shingle
A shingle manufactured by coating a reinforcing material (paper felt or fiberglass mat) with an asphalt-based coating and having mineral granules on the side exposed to the weather. See "shingle."

Attic
The cavity or open space above the ceiling and immediately under the roof deck of a steep-slope roof.

Barrel vault
A building profile featuring a rounded profile to the roof on the short axis but with no angle change on a cut along the long axis.

Base flashing (membrane base flashing)
Plies or strips of roof membrane material used to close off and/or seal a roof at the horizontal-to-vertical intersections, such as at a roof-to-wall juncture. Membrane base flashing covers the edge of the field membrane and extends up the vertical surface. See "flashing."

Base ply
The bottom or first ply in a built-up or polymer- modified bitumen roof system when additional plies are to be subsequently installed.

Base sheet
An impregnated, saturated or coated felt placed as the first ply in some low-slope roof systems.

Batten
(1) Cap or cover; (2) in a metal roof, a metal closure set over, or covering the joint between, adjacent metal panels; (3) in a steep-slope roof system, a strip of wood or metal usually set in or over the structural deck, used to elevate and/or attach a primary roof covering; (4) in a single-ply membrane roof system, a narrow plastic or metal bar that is used to fasten or hold the roof membrane and/or base flashing in place.

Bitumen
(1) A class of amorphous, black or dark-colored, (solid, semi-solid or viscous) cementitious substances, natural or manufactured, composed principally of high-molecular-weight hydrocarbons, soluble in carbon disulfide, and found in asphalts, tars, pitches and asphaltites; (2) a generic term used to denote any material composed principally of bitumen, typically asphalt or coal tar.

Blanket insulation
Fiberglass or other compressible fibrous insulation, generally available in roll form.

Blocking
(1) Sections of wood (which may be preservative-treated) built into a roof assembly, usually attached above the deck and below the membrane or flashing, used to stiffen the deck around an opening,

act as a stop for insulation, support a curb, or serve as a nailer for attachment of the membrane and/or flashing; (2) wood cross-members installed between rafters or joists to provide support at cross-joints between deck panels.

Boot
(1) A covering made of flexible material that may be preformed to a particular shape, used to exclude dust, dirt, moisture, etc., from around a penetration; (2) a flexible material used to form a closure, sometimes installed at inside and outside corners.

Building code
The minimum construction requirements established generally by national organizations and adopted completely or in altered form by local governing authorities. Building code controls design, construction, quality of materials, use and occupancy, location, and maintenance of buildings and structures within the area for which the code was adopted.

Built-up roof (BUR)
A continuous, semi-flexible roof membrane consisting of multiple plies of saturated felts, coated felts, fabrics or mats assembled in place with alternate layers of bitumen and surfaced with mineral aggregate, bituminous materials, a liquid-applied coating or a granule-surfaced cap sheet.

Cap flashing
(1) Usually composed of metal, used to cover or shield the upper edges of the membrane base flashing or wall flashing; (2) a flashing used to cover the top of various buildings components, such as parapets or columns. See "flashing" and "coping."

Cap sheet
A sheet, often granule-surfaced, used as the top ply of some built-up or polymer-modified bitumen roof membranes and/or flashings.

Caulking
(1) The physical process of sealing a joint or juncture; (2) sealing and making weathertight the joints, seams or voids between adjacent surfaces by filling with a sealant.

Channel flashing
In steep-slope roof construction, a type of flashing used at roof-to-wall junctures and other roof-to-vertical plane intersections where an internal gutter is needed to handle runoff. Commonly used with profile tile.

Chimney
Stone, masonry, prefabricated metal or wood-framed structure containing one or more flues projecting through and above a roof.

Cladding
A material used as the exterior wall enclosure of a building.

Cleat
A continuous metal strip, or angled piece, used to secure metal components. See "clip."

Clerestory
(1) An upward extension of enclosed space created by carrying a setback vertical wall (typically glazed) up and through the roof slope; (2) two intersecting shed roofs on different planes.

Clip
A noncontinuous metal component or angle piece used to secure a metal panel to a substrate or two or more metal components together. See "cleat."

Closed-cut valley (Includes illustration)
A method of valley application in which shingles from one side of the valley extend across the valley while shingles from the other side are trimmed back approximately 2 inches from the valley centerline.

Coating
A fluid material applied in the field as a film to the roof surface to provide weather protection to the original roof substrate.

Code
A collection of laws (regulations, ordinances or statutory requirements) adopted by an authority having jurisdiction. See "building code."

Cold-applied
Designed for or capable of being applied without heating as contrasted to hot-applied. Cold-applied materials are furnished in liquid state, whereas hot-applied materials are furnished as solids that must be heated to liquefy before application.

Collar
A metal cap flashing around a vent pipe projecting above a roof deck.

Cool roof
A roof system that uses products made of highly reflective and emissive materials for its top surface. Cool roof surfaces can remain at markedly lower temperatures when exposed to solar heat in service than surfaces of roofs constructed with traditional non-reflective roofing products.

Coping
The covering piece on top of a wall exposed to the weather, usually made of metal, masonry or stone.

Copper
A soft, malleable, naturally weathering metal used in metal roofing or flashing.

Cornice
The decorative horizontal molding or projected roof overhang.

Counter-battens
Vertical wood or metal strips installed on steep-slope roofs over which horizontal battens are secured. The primary roof covering is attached or secured to these horizontal battens.

Counterflashing (Includes illustration)
Formed metal or elastomeric sheeting secured on or into a wall, curb, pipe, rooftop unit or other surface to cover and protect the upper edge of a base flashing and its associated fasteners.

Course
(1) The term used for a row of roofing material that forms the roofing, waterproofing or flashing system; (2) one layer of a series of materials applied to a surface (e.g., a five-course wall flashing is composed of three applications of roof cement with one ply of felt or fabric sandwiched between two layers of roof cement).

Cover board
An insulation board used over closed cell plastic foam insulation (e.g., polyisocyanurate) to prevent blistering when used in conjunction with hot bituminous membranes. Suitable cover-board insulations are glass-faced siliconized gypsum board, fiberglass board, perlite board, wood fiberboard or mineral fiberboard. Cover boards are also recommended between polyisocyanurate insulation and single-ply membranes to protect the polyisocyanurate.

Cricket (Includes illustration)
A relatively small area of a roof constructed to divert water from a horizontal intersection of the roof with a chimney, wall, expansion joint or other projection.

Curb
(1) A raised member used to support roof penetrations, such as skylights, mechanical equipment, hatches, etc., above the level of the roof surface; (2) a raised roof perimeter relatively low in height.

Damp-proofing
Treatment of a surface or structure to resist the passage of water in the absence of hydrostatic pressure.

Deck
A structural component of the roof of a building. The deck must be capable of safely supporting the design dead and live loads, including the weight of the roof system, and the additional live loads required by the governing building codes and provide the substrate to which the roof or waterproofing system is applied. Decks are either noncombustible, (e.g., corrugated metal, concrete

or gypsum) or combustible (e.g., wood plank or plywood).

Dormer (Includes illustration)
A structure projecting from a sloping roof usually housing a window or ventilating louver.

Downspout
A vertical pipe or conduit used to carry runoff water from a scupper, conductor head or gutter of a building to a lower roof level or to the ground or storm water runoff system; also called a conductor or leader.

Drain
An outlet or other device used to collect and direct the flow of runoff water from a roof area.

Drip edge
A metal flashing or other overhanging component with an outward projecting lower edge intended to control the direction of dripping water and help protect underlying building components.

Eave (Includes illustration)
The lower edge of a sloping roof; that part of a roof which projects beyond the wall.

Edge venting
The practice of providing regularly spaced or continuously protected (louvered or otherwise shielded) openings along a roof edge or perimeter, used as part of a ventilation system to dissipate heat and moisture vapor.

EPDM
Ethylene propylene diene M-class rubber, also called ethylene propylene diene terpolymer. See "ethylene propylene diene terpolymer."

Ethylene propylene diene terpolymer (EPDM)
A terpolymer of ethylene, propylene and diene with the residual unsaturated portion of the diene in the side chain to provide for vulcanization. It is a thermosetting synthetic elastomer. EPDM is an acronym for "ethylene propylene diene M-class rubber," which is a name assigned to this material within the classification established in ASTM D1418.

Expansion joint
A structural separation between two building elements that allows free movement between the elements without damage to the roof or waterproofing system.

Fascia
(1) In steep-slope roofing, a board that is nailed to the ends of a roof rafter; sometimes supports a gutter; (2) in low-slope roofing, the vertical or steeply sloped roof or trim located at the perimeter of a building. Typically, it is a border for a low-slope roof system.

Fastener
Any of a wide variety of mechanical securement devices and assemblies, including nails, staples, screws, cleats, clips and bolts, that may be used to secure various components of a roof assembly.

Felt
A flexible sheet manufactured by the interlocking of fibers with a binder or through a combination of mechanical work, moisture and heat. Felts are manufactured principally from wood pulp and vegetable fibers (organic felts), asbestos fibers (asbestos felts), glass fibers (fiberglass felts or ply sheets) or polyester fibers.

Fiberglass insulation
Blanket or rigid board insulation composed of glass fibers bound together with a binder, faced or unfaced, used to insulate roofs and walls.

Fire resistance
The property of materials or their assemblies that prevents or retards the passage of excessive heat, hot gases or flames under conditions of use.

Fire-retardant-treated (FRT) plywood
Plywood that has been impregnated under pressure with mineral salts; in the event of fire, the burning wood and salts emit noncombustible gases and water vapor instead of the usual flammable vapors.

Flashing
Components used to weatherproof or seal roof system edges at perimeters, penetrations, walls, expansion joints, valleys, drains and other places where the roof covering is interrupted or terminated. For example, membrane base flashing covers the edge of the field membrane, and cap flashings or counterflashings shield the upper edges of the base flashing.

Gable (Includes illustration)
The vertical triangular portion of the end of a building having a double-sloping roof from the level of the eaves to the ridge of the roof.

Galvanized steel
Steel coated with zinc for corrosion resistance.

Gambrel
(1) A roof that has two pitches on each side of a central ridge where the upper roof areas have less slope than the lower roof areas; (2) a roof with two inclines on each slope.

Gauge
A metal thickness measurement; a smaller gauge number indicates a thicker metal.

Glass felt
Glass fibers bonded into a sheet with resin and suitable for impregnation with asphalt in the manufacture of bituminous waterproofing, roof membranes and shingles.

Granules
Opaque, natural or synthetically colored aggregate commonly used to surface cap sheets, shingles and other granule-surfaced roof coverings; also referred to as mineral or ceramic granules.

Gravel stop
A flanged device, frequently metallic, designed to prevent loose aggregate from washing off the roof and to provide a continuous finished edge for the roofing.

Gutter
A channeled component installed along the downslope perimeter of a roof to convey runoff water from the roof to the drain leaders or downspouts.

Gypsum board panels
Cementitious board stock with noncombustible core primarily comprised of gypsum that is commonly used as a barrier board, thermal barrier or cover board in a roof assembly.

Hand-tabbing
A method of spot-applying asphalt-based adhesive to shingles for securement and wind resistance. Also termed "hand-sealing."

Hip (Includes illustration)
The sloping line along the outer angle formed by the meeting of two sloping sides of a roof with eaves that meet at a right angle.

Hip roof (Includes illustration)
A roof that rises by inclined planes from all four sides of a building to form hips at the intersection of adjacent roof slopes.

Ice dam (Includes illustration)
A mass of ice formed at the transition from a warm to a cold roof surface, frequently formed by refreezing meltwater at the overhang of a steep roof causing ice and water to back up under roofing materials.

Insulation
Any of a variety of materials designed to reduce the flow of heat from or into a building. See "thermal insulation."

Interlayment
A felt, metal or membrane sheet material used between courses of steep-slope roofing to improve the weather- and water-shedding characteristics of the primary roof covering during times of wind-driven precipitation; typically used with wood shakes.

Interlocking shingles
Individual shingles that mechanically attach to one another to provide enhanced wind resistance without reliance on sealing strips.

Joist
Any of the small timbers, metal or wood beams arranged parallel to one another and spanning from wall to wall to support a floor, ceiling or roof of a building.

Kick-out flashing (diverter)
A metal flashing detail installed at the eave end of a roof-to-wall transition designed to direct runoff away from the wall or wall cladding.

Laminated shingles
See "dimensional shingles."

Lap
That part of a roofing, waterproofing or flashing component that overlaps or covers any portion of the same or another type of adjacent component.

Lead
A soft, malleable, naturally weathering heavy metal; has low melting point and a high coefficient of thermal expansion.

Low-slope roofs
A category of roofs that generally includes weatherproof membrane types of roof systems installed on slopes at or less than 3:12.

Mansard (Includes illustration)
A decorative steep-sloped roof on the perimeter of a building.

Masonry
Construction, usually set in mortar, of natural building stone or manufactured units, such as brick, concrete block, adobe, glass block, tile, manufactured stone or gypsum block.

Membrane
A flexible or semiflexible roof covering or waterproofing whose primary function is to exclude water.

Metal flashing
See "flashing"; frequently used as through-wall-, step-, cap- or counterflashing.

Metal roof panel
A sheet-metal product having an installed weather exposure less than 3 square feet per sheet.

Mildew
A superficial growth produced on organic matter or living plants by fungi.

Mineral-surfaced roofing
Roofing materials with a surface or top layer consisting of a granule-surfaced sheet.

Modified bitumen
See "polymer-modified bitumen."

Mold
A surface growth of fungus on damp or decaying matter. The term has no taxonomic significance and is used only in a general sense of visible fungal growth on organic matter. See "mildew."

Nailer
(Sometimes referred to as "blocking"); a piece or pieces of dimensional lumber and/or plywood secured to a structural deck or walls that provides a receiving medium for the fasteners used to attach membrane or flashing. See "blocking (1)."

Nesting
(1) The installation of new metal roof deck directly on top of existing metal roof deck; (2) a method of reroofing with new asphalt shingles over existing shingles in which the top edge of the new shingle is butted against the bottom edge of the existing shingle; also known as "butt-and-run method."

Open valley (Includes illustration)
A method of valley construction in which the steep-slope roof-covering materials on both sides are trimmed along each side of the valley, exposing the metal valley flashing.

Oriented strand board (OSB)
A mat-formed panel product with oriented layers resulting in directional properties. OSB is comprised primarily of wood strands bonded with exterior adhesive formulations under heat and pressure. Design capacities are referenced to the primary and secondary structural axes, which typically correspond to the manufacturing machine and cross-machine directions, respectively. The primary direction is often referred to as the strength direction.

Overflow drainage
Component(s) in a roof or waterproofing drainage system used to protect it against damage from a water load imposed by blocked or partially blocked primary drainage system; e.g., overflow scupper, overflow interior drain.

Parapet wall
The part of a perimeter wall that extends above a roof.

Penetration
(1) Any construction (e.g., pipes, conduits, HVAC supports) passing through a roof; (2) the consistency of a bituminous material expressed as the distance, in tenths of a millimeter (0.1 mm), that a standard needle penetrates vertically into a sample of material under specified conditions of loading, time and temperature (ASTM D5 is the test method used for bituminous materials). A cone is sometimes used for special purposes instead of a needle.

Pitch-pocket (pitch-pan)
A flanged, open-bottomed enclosure made of sheet metal or other material placed around a penetration through the roof, properly stripped-in to the roof membrane and filled with grout and bituminous or polymeric sealants to seal the area around the penetration.

Ply
A layer of felt or ply sheet in a built-up roof membrane or roof system.

Plywood
A flat panel built up of sheets of wood called veneers, united under pressure by a bonding agent to create a panel with an adhesive bond between plies as strong as or stronger than the wood. Plywood is constructed of an odd number of layers with grain of adjacent layers perpendicular. Layers may consist of a single ply or two or more plies laminated with parallel grain direction. Outer layers and all odd-numbered layers generally have the grain direction oriented parallel to the long dimension of the panel

Polyisocyanurate foam
A cellular, unfaced, preformed rigid thermal insulation produced by the polymerization of polyisocyanates in the presence of polyhydroxyl compounds, catalysts, cell stabilizers, and blowing agents; classified in accordance with ASTM C591.

Polyisocyanurate foam board
A thermal insulation composed of polyisocyanurate foam with adhered facers; commonly called iso or isoboard; classified in accordance with ASTM C1289.

Polymer-modified bitumen
(1) A bitumen modified by including one or more polymers (e.g., atactic polypropylene, styrene butadiene styrene); (2) composite sheets consisting of a polymer-modified bitumen often reinforced with various types of mats or films and sometimes surfaced with films, foils or mineral granules.

Polyvinyl chloride (PVC)
A synthetic thermoplastic polymer prepared from vinyl chloride. PVC can be compounded into flexible and rigid forms through the use of plasticizers, stabilizers, fillers and other modifiers. Rigid forms are used in pipes; flexible forms are used in the manufacture of sheeting and roof membrane materials.

Ponding
The excessive accumulation of water at low-lying areas on a roof that remains after 48 hours after precipitation under conditions conducive to drying.

Positive drainage
The drainage condition in which consideration has been made during design for all loading deflections of the deck and additional roof slope has been provided to ensure drainage of the roof area within 48 hours of precipitation.

Primary drainage
Drainage devices, such as drains or scuppers, that provide for the direct removal of water from a waterproofing system.

PVC
See "polyvinyl chloride (PVC)."

Racking
A method of asphalt shingle application also referred to as the "straight-up method,' whereby shingle courses are applied vertically up the roof rather than laterally or across and up; requires placing a part of a shingle under product already in place every other course, which may result in a less-than-recommended number of nails being used for fastening.

Rafter
One of a series of sloped structural members that extend from the ridge or hip to the downslope perimeter or eave designed to support the roof deck or secondary horizontal structural members such as purlins and the associated loads.

Raggle
A groove or slot often cut in a masonry wall or other vertical surface adjoining a roof for inserting an inset flashing component such as a reglet.

Rake (Includes illustration)
The sloped edge of a roof at or adjacent to the first or last rafter.

Receiver
A component in a two-piece counterflashing that may be surface-mounted to a wall, inset into a raggle or embedded behind cladding. It is used for ease of installation and future maintenance and repair or replacement. See "reglet."

Re-cover
The process of installing an additional roof covering over a prepared existing roof covering without removing the existing roof covering.

Reglet
A sheet-metal receiver for the attachment of counterflashing. A reglet may be surface-mounted, inset into a raggle or embedded behind cladding.

Replacement
The process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering; also know as "tear-off and replacement."

Reroofing
The process of recovering or replacing an existing roof covering. See "re-cover" and "replacement."

Ridge (Includes illustration)
Highest point on a roof, represented by a horizontal line where two roof areas intersect, running the length of the area.

Ridge board
A horizontal board in wood frame construction at the upper end of the common rafters to which the rafters are nailed.

Ridge cap
A material or covering applied over the ridge of a roof.

Ridge course
The last or top course of roofing materials, such as tile, roll roofing, shingles, that covers the ridge and overlaps the intersecting field roofing.

Ridge vent
A ventilator located at the ridge that allows the escape of warm and/or moist air from the attic area or rafter cavity.

Roll roofing
Coated felts, either smooth or mineral-surfaced.

Roof
(1) The cover of a building; (2) to cover with a roof.

Roof area divider
See "area divider."

Roof assembly
An assembly of interacting roof components including the roof deck, vapor retarder (if present), insulation and membrane or primary roof covering designed to weatherproof.

Roof covering
The exterior roof cover or skin of the roof assembly consisting of membrane, panels, sheets, shingles, tiles, etc.

Roof curb
Raised frame used to mount mechanical units such as air conditioning units, exhaust fans, skylights, etc., on a roof.

Roof slope
The angle a roof surface makes with the horizontal, expressed as a ratio of the units of vertical rise to the units of horizontal length (sometimes referred to as run). For English units of measurement, when dimensions are given in inches, slope may be expressed as a ratio of rise to run, such as 4:12, or as an angle in degrees.

Roof system
A system of interacting roof components generally consisting of a membrane or primary roof covering and roof insulation (not including the roof deck) designed to weatherproof and sometimes improve the building's thermal resistance.

Rust
(1) A reddish material, primarily hydrated iron oxide; a corrosion product formed on iron or its alloys, resulting from exposure to a humid atmosphere or chemical attack; (2) a special case of corrosion that deteriorates or alters the original surface condition.

Saddle
A small tapered/sloped roof area structure that helps to channel surface water to drains; frequently located in a valley. A saddle is often constructed like a small hip roof or pyramid with a diamond-shaped base.

Scupper
A drainage device in the form of an outlet through a wall, parapet wall or raised roof edge typically lined with a sheet-metal sleeve.

Sealant
(1) A material that has the adhesive and cohesive properties to form a seal; (2) a mixture of polymers, fillers and pigments used to fill and seal joints where moderate movement is expected; unlike caulking, it cures to a resilient solid.

Seam
A joint formed by mating two separate sections of material. Seams can be made or sealed in a variety of ways, including adhesive bonding, hot-air welding, solvent welding, using adhesive tape and sealant.

Self-adhering membrane
A membrane that can adhere to a substrate and to itself at overlaps without the use of an additional adhesive. The undersurface of a self-adhering membrane is protected by a release paper or film, which prevents the membrane from bonding to itself during shipping and handling.

Service life
(1) The period of time a building component or system will function successfully without replacement or excessive repair assuming reasonable or expected periodic maintenance is performed; (2) the number of years of service a material, system or structure will provide before rehabilitation or replacement is required.

Shingle
(1) A small unit of prepared roofing designed for installation with similar units in overlapping rows or courses on inclines normally exceeding 3:12 slope; (2) to cover with shingles; (3) to apply any sheet material in succeeding overlapping rows like shingles.

Siding
The finish covering of an exterior wall of a frame building; the siding may be a cladding material such as wood, aluminum or vinyl (but not masonry).

Single-ply roofing
A roof system in which the principal roof covering is a single-layer flexible thermoset or thermoplastic membrane.

Skylight (Includes illustration)
An opening in a roof that is covered with a transparent or translucent material; used to admit diffuse light to the space below; commonly mounted on a framed curb.

Slab
A layer of reinforced concrete, generally flat and horizontal (or minimally sloped), usually of uniform thickness, placed on prepared earth or supported by beams, columns or walls.

Slate
A hard, brittle metamorphic rock consisting mainly of clay minerals used extensively as dimensional stone for steep roofing and in granular form as surfacing on some other roofing materials.

Slope
The angle of incline, usually expressed as a ratio of rise to run, or as an angle. See "roof slope."

Snow guard
A series of devices attached to the roof in a pattern that attempts to hold snow in place, thus preventing sudden snow or ice slides from the roof; any device intended to prevent snow from sliding off a roof.

Soffit
The exposed undersurface of any exterior overhanging section of a roof eave.

Soffit vent
A manufactured or custom built air inlet source located at the downslope eave or in the soffit of a roof assembly.

Soil stack
A sanitation pipe that penetrates the roof; used to vent plumbing fixtures.

Solder
A lead and tin mixture that is melted and used to bond two pieces of some types of metals together.

Span
The distance between supports or beams, girders or trusses.

Spray polyurethane foam (SPF)
A foamed plastic material, formed by mixing and spraying two components, methylene diphenyl diisocynate (MDI) ("A-component") and resin containing a polyol ("B-component") to form a rigid, fully adhered, water-resistant and insulating membrane.

Square
(1) A unit used in measuring roof area equivalent to 100 square feet; (2) a quantity of material sufficient to cover 100 square feet of a roof deck.

Stainless steel
An alloy of steel that contains chromium and also may contain nickel or copper; generally, has good resistance to corrosion.

Standing seam
In metal roofing, a type of seam between adjacent sheets of material made by turning up the edges of two adjacent metal panels and then folding or interlocking them in a variety of ways.

Starter course
The first layer of roofing, applied along a line adjacent to the downslope perimeter of the roof area; with steep-slope water-shedding roof coverings, the starter course is covered by the first course.

Starter sheet
(1) Felt, ply sheet or membrane strip that is made or cut to a width narrower than the standard width of the roll material and used to start the shingling pattern at a roof edge; (2) particular width sheet designed for perimeters in some mechanically attached and fully adhered single-ply systems.

Starter strip
Roll roofing or shingle strips applied along the downslope eave line before the first course of roof covering and intended to fill spaces between cutouts and joints of the first course.

Steel
A malleable alloy of iron and carbon produced by melting and refining pig iron and/or scrap steel; graded according to the carbon content (in a range from 0.02 percent to 1.7 percent); other elements, such as manganese and silicon, may be included to provide special properties.

Steel joist (open web steel joist)
Normally used as a horizontal supporting member between beams or other structural members; suitable for the support of some roof decks.

Steep-slope roofs (Includes illustration)
A category of roofing that generally includes water-shedding types of roof coverings installed on slopes exceeding 3:12.

Step flashing (Includes illustration)
Individual pieces of sheet-metal material used to flash walls, around chimneys, dormers and such projections along the slope of a roof. Individual pieces are overlapped and stepped up the vertical surface.

Strip shingles
Asphalt shingles that are manufactured in strips approximately three times as long as they are wide with or without cutouts.

Structural panel
A metal roof panel designed to be applied over open framing rather than a continuous or closely spaced roof deck.

Substrate
The surface upon which a roofing or waterproofing membrane is applied (e.g., in roofing, the structural deck or rigid board insulation).

Surfacing
The top layer or layers of a roof covering specified or designed to protect the underlying roofing from direct exposure to the weather.

Tab
A section of the exposed portion of a strip shingle defined by cutouts.

Thermal resistance (R)
The quantity determined by the temperature difference at steady state between two defined surfaces of a material or construction that induces a unit heat flow rate through a unit area. In English (inch•pound) units, it is expressed as $F•ft^2•h/Btu$.

Note 1: A thermal resistance (R) value applies to a specific thickness of a material or construction.

Note 2: The thermal resistance (R) of a material is the reciprocal of the thermal conductance (C) of the same material (i.e., R = 1/C).

Note 3: Thermal resistance (R) values can be added, subtracted, multiplied and divided by mathematically appropriate methods.

Thermoplastic olefin membrane (TPO)
A blend of polypropylene and ethylene-propylene polymers, colorant, flame retardants, ultraviolet radiation absorbers and other proprietary substances that may be blended with the TPO to achieve the desired physical properties. The membrane may or may not be reinforced.

Through-wall flashing
A water-resistant membrane or material assembly extending totally through a wall and its cavities positioned to direct water within the wall to the exterior, usually through weep holes.

Torch-applied
Method used in the installation of polymer-modified bitumen membranes characterized by using open flame propane torch equipment.

TPO
thermoplastic olefin.

Truss
A structure made up of three or more members usually in some triangular arrangement with each member designed to carry a tension or compression force. The entire structure in turn acts as a beam.

Underlayment
An asphalt-saturated felt or other sheet material (may be self-adhering) installed between a roof deck and roof covering, usually used in a steep-slope roof construction. Underlayment is primarily used to separate a roof covering from the roof deck, shed water and provide secondary weather protection for the roof area of the building.

Valley (Includes illustration)
The internal angle formed by the intersection of two sloping roof planes.

Vapor barrier
See "vapor retarder."

Vapor retarder
Layer(s) of material or a laminate used to appreciably reduce the flow of water vapor into a roof assembly.

Veneer
(1) A single wythe of masonry for facing purposes that may not be structurally connected; (2) any of the thin layers of wood glued together to form plywood.

Vent
An opening designed to convey air, heat, water vapor or other gas from inside a building or a building component to the atmosphere.

Water-shedding
The ability of individual, overlapping components to resist the passage of water without hydrostatic pressure.

Water-shedding roof system
A roof system that depends on gravity for quick drainage via water shedding to prevent water entry into or through the system.

Water and ice-dam protection membrane (Includes illustration)
A continuous membrane installed under steep-slope roofing materials in areas subject to ice damming or wind-driven rain that prohibits water that gets through the roof covering from getting into the structure; ice- and water-protection membranes classified by ASTM D1970 must also seal around fasteners.

Waterproofing
Treatment of a surface or structure to prevent the passage of water under hydrostatic pressure.

Waterproofing system
A system of interacting waterproofing components consisting at a minimum of a membrane but may also include protection, drainage and insulation courses, as well as waterstops, expansion and control joints, various flashings and counterflashings, and overburden such as pavers, cast concrete and wire mesh or rebars. It does not include the substrate.

Woven valley
A method of valley construction in which shingles or roofing from both sides of the valley extend across the valley and are woven together by overlapping alternate courses as they are applied.

Zinc
A soft, self-healing metal that reacts with the environment to produce a soft blue-gray zinc carbonate patina that protects the underlying metal from corrosion. Zinc is commonly used as sacrificial (galvanized) coating for a base metal such as sheet steel and iron, in various metal alloys and in oxide form as a white pigment.

Asphalt
A dark brown to black cementitious material in which the predominating constituents are bitumens found in a natural state or more commonly left as a residue after evaporating or otherwise processing crude oil or petroleum. See "bitumen." Asphalt may be further refined to conform to various roofing grade specifications:

asphalt, dead-level: Roofing asphalt conforming to the requirements of ASTM D312, Type I.

asphalt, flat: Roofing asphalt conforming to the requirements of ASTM D312, Type II.

asphalt, steep: Roofing asphalt conforming to the requirements of ASTM D312, Type III.

asphalt, special steep: Roofing asphalt conforming to the requirements of ASTM D312, Type IV.

asphalt, waterproofing: A waterproofing asphalt conforming to the requirements of ASTM D449, Types I, II and III.