

# Roofing Glossary of Terms

<b>Acrylic Coating:</b>	a coating system based on an acrylic resin. Generally, a latex-based coating system which cures by air drying.
<b>Acrylic Resin:</b>	polymers of acrylic or methacrylic monomers. Often used as a latex base for coating systems.
<b>Aggregate:</b>	rock, stone, crushed stone, crushed slag, water-worn gravel or marble chips used for surfacing and/or ballasting a roof surface.
<b>Alligatoring:</b>	the cracking of the surfacing bitumen on a built-up roof, producing a pattern of cracks similar to an alligator's hide; the cracks may or may not extend through the surfacing bitumen.
<b>Aluminized Steel:</b>	sheet steel with a thin aluminum coating bonded to the surface to enhance weathering characteristics.
<b>Aluminum:</b>	a non-rusting metal sometimes used for metal roofing and flashing.
<b>Application Rate:</b>	the quantity (mass, volume, or thickness) of material applied per unit area.
<b>Apron Flashing:</b>	a term used for a flashing located at the juncture of the top of the sloped roof and a vertical wall or steeper-sloped roof.
<b>Architectural Panel:</b>	a metal roof panel, typically a double standing seam or batten seam; usually requires solid decking underneath and relies on slope to shed water.
<b>Architectural Shingle:</b>	shingle that provides a dimensional appearance.
<b>Area Divider:</b>	a raised, flashed assembly (typically a single- or double-wood member attached to a wood base plate) that is anchored to the roof deck. It is used to relieve thermal stresses in a roof system where an expansion joint is not required, or to separate large roof areas (sometimes between expansion joints), and may be used to facilitate installation of tapered insulation
<b>Asbestos:</b>	a group of natural, fibrous, impure silicate materials used to reinforce some roofing products.
<b>Asphalt:</b>	a dark brown or black substance found in a natural state or more commonly, left as a residue after evaporating or otherwise processing crude oil or petroleum. Asphalt may be further refined to conform to various roofing grade specifications
<b>Dead-Level Asphalt:</b>	a roofing asphalt conforming to the requirements of ASTM Specification D 312, Type I
<b>Flat Asphalt:</b>	a roofing asphalt conforming to the requirements of ASTM Specification requirements D 312, Type II
<b>Steep Asphalt:</b>	a roofing asphalt conforming to the requirements of ASTM Specification D 312, Type III
<b>Special Steep Asphalt:</b>	a roofing asphalt conforming to the requirements of ASTM Specification D 312, Type IV

# Roofing Glossary of Terms - continued

<b>Asphalt, Air Blown:</b>	produced by blowing air through molten asphalt held at an elevated temperature, to raise the asphalt's softening point and modify other properties.
<b>Asphalt Emulsion:</b>	a mixture of asphalt particles and an emulsifying agent such as bentonite clay and water. These components are combined by using a chemical or a clay emulsifying agent and mixing or blending machinery.
<b>Asphalt Felt:</b>	an asphalt-saturated and/or an asphalt-coated felt. (See Felt.)
<b>Asphalt Roof Cement:</b>	a trowelable mixture of solvent-based bitumen, mineral stabilizers, other fibers and/or fillers.
<b>Asphaltene:</b>	a high molecular weight hydrocarbon fraction precipitated from asphalt by a designated solvent (paraffinic naphtha) at a specified temperature and solvent-asphalt ratio.
<b>Atactic Polypropylene:</b>	a group of high molecular weight polymers formed by the polymerization of propylene.
<b>Back-Nailing:</b>	(also referred to as Blind-Nailing) the practice of nailing the back portion of a roofing ply, steep roofing unit, or other components in a manner so that the fasteners are covered by the next sequential ply, or course, and are not exposed to the weather in the finished roof system.
<b>Back-Surfacing:</b>	fine mineral matter applied to the back side of asphalt shingles and roll roofing to keep them from sticking together while packaged.
<b>Ballast:</b>	an anchoring material, such as aggregate, or precast concrete pavers, which employs the force of gravity to hold (or assist in holding) single-ply roof membranes in place.
<b>Base Flashing:</b>	plies or strips of roof membrane material used to close off and/or seal a roof at the roof-to-vertical intersections, such as at a roof-to-wall juncture. Membrane base flashing covers the edge of the field membrane. (See Flashing)
<b>Base Ply:</b>	the lowermost ply of roofing in a roof membrane or roof system.
<b>Base Sheet:</b>	a saturated or coated felt placed as the first ply in some multi-ply built-up and modified bitumen roof membranes.
<b>Batten:</b>	(1) cap or cover; (2) in a metal roof: a metal closure set over, or covering the joint between, adjacent metal panels; (3) wood: a strip of wood usually set in or over the structural deck, used to elevate and/or attach a primary roof covering such as tile; (4) in a membrane roof system: a narrow plastic, wood, or metal bar which is used to fasten or hold the roof membrane and/or base flashing in place.
<b>Bitumen:</b>	(1) a class of amorphous, black or dark colored, (solid, semi-solid, or viscous) cementitious substances, natural or manufactured, composed principally of found in petroleum asphalts, coal tars and pitches, wood tars and asphalts; (2) a generic term used to denote any material composed principally of bitumen, typically asphalt or coal tar.

# Roofing Glossary of Terms - continued

- Bituminous Emulsion:** a suspension of minute particles of bituminous material in water or other aqueous solution. (See Asphalt Emulsion)
- Blackberry (Tar-Boil):** a small bubble or blister in the flood coating of an aggregate-surfaced built-up roof membrane.
- Blanket (Batt) Insulation:** fiberglass or other compressible fibrous insulation, generally available in roll form.
- Bleed-Sheet:** a sheet material used to prevent the migration of bitumen.
- Blind-Nailing:** the use of nails that are not exposed to the weather in the finished roofing system.
- Blister:** an enclosed pocket of air, which may be mixed with water or solvent vapor, trapped between impermeable layers of felt or membrane and substrate.
- Blocking:** 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 to serve as a nailer for attachment of the membrane and/or flashing.
- Bond:** the adhesive and/or cohesive forces holding two components in positive contact.
- Boot:** (1) a covering made of flexible material, which 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.
- Bridging:** bridging in steep-slope roofing is a method of reroofing over standard-sized asphalt shingles with metric-sized asphalt shingles.
- British Thermal Unit:** the heat energy required to raise the temperature of one pound of water (BTU) one degree Fahrenheit (joule).
- Brooming:** an action carried out to facilitate embedment of a ply roofing material into hot bitumen by using a broom, squeegee, or special implement to smooth out the ply and ensure contact with the bitumen or adhesive under the ply.
- Buckle:** an upward, elongated tenting displacement of a roof membrane frequently occurring over insulation or deck joints. A buckle may be an indication of movement within the roof assembly.
- Built-Up Roof Membrane: (BUR)** a continuous, semi-flexible multi-ply roof membrane, consisting of plies or layers of saturated felts, coated felts, fabrics, or mats between which alter high molecular weight hydrocarbons, soluble in nate layers of bitumen are applied. Generally, built-up roof membranes are surfaced with mineral aggregate and bitumen, a liquid-applied coating, or a granule-surfaced cap sheet.

# Roofing Glossary of Terms - continued

- Button Punch:** a process of indenting two or more thicknesses of metal that are pressed against each other to prevent slippage between the metal.
- Butyl:** rubber-like material produced by copolymerizing isobutylene with a small amount of isoprene. Butyl may be manufactured in sheets or blended with other elastomeric materials to make sealants and adhesives.
- Butyl Coating:** an elastomeric coating system derived from polymerized isobutylene. Butyl coatings are characterized by low water vapor permeability.
- Butyl Rubber:** a synthetic elastomer based on isobutylene and a minor amount of isoprene. It is vulcanizable and features low permeability to gases and water vapor.
- Butyl Tape:** a sealant tape sometimes used between metal roof panel seams and end laps; also used to seal other types of sheet metal joints, and in various sealant applications.
- Cant:** a beveling of foam at a right angle joint for strength and water run-off.
- Cant Strip:** a beveled or triangular-shaped strip of wood, wood fiber, perlite, or other material designed to serve as a gradual transitional plane between the horizontal surface of a roof deck or rigid insulation and a vertical surface.
- Cap Flashing:** usually composed of metal, used to cover or shield the upper edges of the membrane base flashing, wall flashing, or primary flashing. (See Flashing and Coping.)
- Cap Sheet:** a granule-surface coated sheet used as the top ply of some built-up or modified bitumen roof membranes and/or flashing.
- Capacitance Meter:** a device used to locate moisture or wet materials within a roof system by measuring the ratio of the change to the potential difference between two conducting elements separated by a non-conductor.
- Capillary Action:** the action that causes movements of liquids by surface tension when in contact with two adjacent surfaces such as panel side laps.
- Caulk:** a material (usually a composition of vehicle and pigment) used for filling/sealing joints or junctures, where no elastomeric properties are required. (See Sealant)
- Caulking:** sealing and making weather-tight the joints, seams, or voids between adjacent units by filling with a sealant.
- C-Channel:** a structural framing member.
- Cementitious Waterproofing:** heavy cement-based compounds and various additives that are mixed and packaged for use in a dry form; the packaged moisture is then mixed with water and liquid bonding agents to a workable concrete-like consistency.
- Channel Flashing:** (for 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 run-off. Commonly used with profile tile.

# Roofing Glossary of Terms - continued

<b>Chevron:</b>	a style of metal panel seaming/design.
<b>Chlorinated Polyethylene: (CPE)</b>	a thermoplastic material, used for single-ply roof membranes, composed of highmolecular weight polyethylene which has been chlorinated - a process that yields a flexible rubber-like material.
<b>Chlorosulfonated Polyethylene: (CSPE or CSM)</b>	a synthetic, rubber-like thermoset material, based on high molecular weight polyethylene with suphonyl chloride, usually formulated to produce a self-vulcanizing membrane. (best by the DuPont trade name Hypalon)
<b>Cladding:</b>	a material used as the exterior wall enclosure of a building.
<b>Cleat:</b>	a metal strip, plate or metal angle piece, either continuous or individual ("clip"), used to secure two or more components together.
<b>Closure Strip:</b>	a metal or resilient strip, such as neoprene foam, used to close openings created by joining metal panels or sheets and flashings.
<b>Coal-Tar:</b>	a dark brown to black colored, semi-solid hydrocarbon obtained as residue from the partial evaporation or distillation of coal tars. Coal-tar pitch is further refined to conform to the following roofing grade specifications:
<b>Coal-Tar Bitumen:</b>	a proprietary trade name for Type III coal tar used as the dampproofing or waterproofing agent in dead-level or low-slope built-up roof membranes, conforming to ASTM Specification D 450, Type III.
<b>Coal-Tar Pitch:</b>	a coal tar used as the waterproofing agent in dead-level or low-slope built-up roof membranes, conforming to ASTM Specification D 450, Type I or Type II.
<b>Coal-Tar Waterproofing Pitch:</b>	a coal tar used as the dampproofing or waterproofing agent in below-grade structures, conforming to ASTM Specification D 450, Type II.
<b>Coal-Tar Felt:</b>	a felt that has been saturated with refined coal tar.
<b>Coal-Tar Roof Cement:</b>	a trowelable mixture of processed coal-tar base, solvents, mineral fillers and/or fibers.
<b>Coated Base Sheet:</b>	a felt that has previously been saturated (filled) with asphalt and later coated with harder, more viscous asphalt, which greatly increases its impermeability to moisture.
<b>Coated Felt (Sheet):</b>	(1) an asphalt-saturated felt that has also been coated on both sides with harder, more viscous "coating" asphalt; (2) a glass fiber felt that has been simultaneously filled and coated with asphalt on both sides.
<b>Coating:</b>	a layer of material spread over a surface for protection or decoration. Coatings for SPF are generally liquids, semi-liquids, or mastics; spray, roller, or brush applied; and cured to an elastomeric consistency.
<b>Cohesion:</b>	the degree of internal bonding of one substance to itself.

# Roofing Glossary of Terms - continued

<b>Coil Coating:</b>	the application of a finish to a coil of metal using continuous mechanical coating process.
<b>Cold Forming:</b>	the process of using press brakes, roll formers, etc., to shape metal into desired profiles at ambient room temperature.
<b>Cold-Process Built-Up Roof:</b>	a continuous, semi-flexible roof membrane, consisting of a ply or plies of felt mats or other reinforcement fabrics that are laminated together with alternate layers of liquid-applied (usually asphalt-solvent based) roof cements or adhesives installed at ambient or a slightly elevated temperature.
<b>Cold Rolled:</b>	the process of forming steel into sheets, panels, or shapes on a series of rollers at ambient room temperatures.
<b>Compounded Thermoplastics:</b>	a category of roofing membranes made by blending thermoplastic resins with plasticizers, various modifiers, stabilizers, flame retardants, UV absorbers, fungicides, and other proprietary substances, alloyed with proprietary organic polymers. Some of the membranes listed in this generic category are CPA, EIP, NBP, and TPA.
<b>Compressive Strength:</b>	the ability of materials and components to resist deformation or other damage caused by the weight of compression of either live or dead loads.
<b>Concealed-Nail Method:</b>	a method of asphalt roll roofing application in which all nails are driven into the underlying course of roofing and covered by an adhered, overlapping course.
<b>Condensate:</b>	the liquid resulting from the condensation of a gas or vapor.
<b>Condensation:</b>	the conversion of water vapor or other gas to liquid state as the temperature drops or atmospheric pressure rises. (See Dew Point)
<b>Conductor Head:</b>	a transition component between a through-wall scupper and downspout to collect and direct run-off water.
<b>Construction Joint:</b>	a formed or assembled joint at a predetermined location where two successive placements of concrete meet.
<b>Contact Cements:</b>	adhesives used to adhere or bond various roofing components. These adhesives adhere mated components immediately on contact of surfaces to which the adhesive has been applied.
<b>Coping:</b>	the covering piece on top of a wall which is exposed to the weather, usually made of metal, masonry, or stone. It is preferably sloped to shed water back onto the roof.
<b>Copolymer:</b>	the product of polymerization of two or more substances at the same time; a "mixed" polymer.
<b>Copolymerization:</b>	a chemical reaction that results in the bonding of two or more dissimilar monomers to produce large, long-chain molecules which are copolymers.
<b>Copper:</b>	a natural weathering metal used in metal roofing; typically used in 16 or 20 ounce per square foot thickness (4.87 or 6.10 kg/sq m).

# Roofing Glossary of Terms - continued

<b>Counter Batten:</b>	vertical wood strips installed on sloped roof over which horizontal battens are secured. The primary roof covering is attached or secured to these horizontal battens.
<b>Counterflashing:</b>	formed metal sheeting secured on or into a wall, curb, pipe, rooftop unit, or other surface, to cover and protect the upper edge of the membrane base flashing or underlying metal flashing and associated fasteners from exposure to the weather.
<b>Course:</b>	(1) the term used for each row of shingles or 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 each layer of roof cement).
<b>Cover Plate:</b>	a metal strip sometimes installed over the joint between formed metal pieces.
<b>Coverage:</b>	the surface area covered by a specific quantity of a particular material.
<b>CPA:</b>	Copolymer Alloy.
<b>CPE:</b>	Chlorinated Polyethylene.
<b>Crack:</b>	a non-linear separation or fracture occurring in a material. May be generally caused by induced stress, dimensional instability, or substrate movement. Some cracks may be more of a linear separation or fracture. (See Split.)
<b>Creep:</b>	the permanent deformation of a roofing material or roof system caused by movement of the roof membrane, or compression of a roof insulation board at fastener positions, that results from continuous load or thermal stress or loading. Creep at roof temperature is sometimes called "cold flow."
<b>Cricket:</b>	an elevated roof substrate or structure, constructed to divert water around a chimney, curb, away from a wall, expansion joint, or other projection / penetration. (See Saddle.)
<b>Cross Ventilation:</b>	the effect that is provided when air moves through a roof cavity between the vents.
<b>CSPE:</b>	chlorosulfonated polyethylene.
<b>Curb:</b>	a raised member used to support roof penetrations, such as skylights, mechanical equipment, hatches, etc., above the level of the roof surface.
<b>Cure:</b>	a process whereby a material is caused to form permanent molecular linkages by exposure to chemicals, heat, pressure, and/or weathering.
<b>Cutback:</b>	solvent-thinned bitumen used on cold-applied ("process") roofing adhesives, roof cement, and roof coatings.
<b>Cutoff:</b>	a permanent detail designed to seal and prevent lateral water movement in an insulation system, and used to isolate sections of a roofing system.

# Roofing Glossary of Terms - continued

<b>Cutout:</b>	the open portions of a strip shingle between the tabs.
<b>Dampproofing:</b>	treatment of a surface or structure to resist the passage of water in the absence of hydrostatic pressure.
<b>Dead Level:</b>	essentially horizontal or flat, as in a roof deck or rooftop with no intentional slope to the roof drains. Also referred to as zero (0) slope. (See Slope.)
<b>Dead-Level Asphalt:</b>	see Asphalt.
<b>Dead Loads:</b>	permanent non-moving loads that result from the weight of a building's structural and architectural components, mechanical and electrical equipment, and the roof assembly itself. Essentially the same as "dead weight" or "dead weight loads."
<b>Deck:</b>	a structural component of the roof of a building. The deck must be capable of safely supporting the design and live loads, including the weight of the roof systems, and the additional live loads required by the governing building codes. Decks are either non-combustible (e.g., corrugated metal, concrete, or gypsum) or combustible (e.g., wood plank or plywood), and provide the substrate to which the roofing or waterproofing system is applied.
<b>Deflection (Sagging):</b>	the downward displacement of a structural member or system under load.
<b>Degradation:</b>	a deleterious change in the chemical structure, physical properties, or appearance of a material due to natural or artificial exposure (e.g., exposure to radiation, moisture, heat, freezing, wind, ozone, oxygen, etc.).
<b>Delamination:</b>	separation of the laminated layers of a component or system.
<b>Design Loads:</b>	those loads specified in building codes or standards published by federal, state, county or city agencies, or in owner's specifications to be used in the design of a building.
<b>Dew Point:</b>	the temperature at which water vapor condenses in cooling air at the existing atmospheric pressure and vapor content. Cooling at or below the dew point will cause condensation.
<b>Diffusion:</b>	the movement of water vapor from regions of high concentration (high water vapor pressure) toward regions of lower concentration (due to random thermal molecular motion).
<b>Drain:</b>	an outlet or other device used to collect and direct the flow of run-off water from a roof area.
<b>Eaves:</b>	a projecting edge of a roof that extends beyond the supporting wall.
<b>Edge Stripping:</b>	membrane flashing strips cut to specific widths used to seal/flash perimeter edge metal and the roof membrane.
<b>Edge Venting:</b>	the practice of providing regularly spaced or continuously protected (e.g., louvered) openings along a roof edge or perimeter, used as part of a ventilation system to dissipate heat and moisture vapor.



# Roofing Glossary of Terms - continued

<b>EIP:</b>	Ethylene Interpolymer
<b>Elasticity:</b>	the property of matter by virtue of which it tends to return to its original size and shape after removal of a stress or force, which caused a deformation.
<b>Elastomer:</b>	natural or synthetic material which, at room temperature, can be stretched under low stress and, upon immediate release of the stress or force, will return quickly to its approximate original dimensions.
<b>Elastomeric:</b>	the elastic, rubber-like properties of a material that will stretch when pulled and will return relatively quickly to its original shape when released.
<b>Elastomeric Coating:</b>	a coating system which, when fully cured, is capable of being stretched at least twice its original length (100% elongation) and recovering to its original dimensions.
<b>Elongation:</b>	the ability of a material (e.g., roofing membrane) to be stretched by the application of a force.
<b>Embedment:</b>	(1) the process of installing or pressing-in reinforcement felt, fabric, mat or panel uniformly into bitumen or adhesive; (2) the process of pressing granules into coating during the manufacture of factory-prepared roofing; (3) the process whereby sheet, aggregate, or other roofing components settle into hot- or cold-applied bitumen via the force of gravity.
<b>Emulsion:</b>	a dispersion of fine particles or globules in a liquid. (See Asphalt Emulsion or Bitumen Emulsion.)
<b>End Lap:</b>	the distance of overlap where one ply, panel, or piece extends beyond the end of the immediately adjacent underlying ply, panel, or piece.
<b>Envelope (Bitumen-Stop):</b>	a continuous edge seal formed at the perimeter and at penetrations by extending the base sheet or one ply of felt beyond the edge of the membrane field plies. After all overlying field insulation are in place, the extended ply is turned back onto the membrane and adhered. The envelope is intended to prevent bitumen seepage from the edge of the membrane.
<b>EPDM:</b>	Ethylene Propylene Diene Monomer.
<b>Epichlorohydrin : (ECH)</b>	a synthetic rubber including two epichlorohydrin based elastomers. It is similar to and compatible with EPDM. ECH is typically used in lieu of EPDM when enhanced resistance to animal fat or other oils is needed.
<b>Epoxy:</b>	a class of synthetic, thermosetting resins that produce tough, hard, chemical-resistant coatings and adhesives.
<b>Equilibrium Moisture Content: (EMC)</b>	(1) the moisture content of a material stabilized at a given temperature and relative humidity, expressed as percent moisture by weight; (2) the typical moisture content of a material in any given geographical area.
<b>Equiviscous Temperature:</b>	the temperature at which a bitumen attains the proper viscosity for built-up (EVT) membrane application.

# Roofing Glossary of Terms - continued

- Equiviscous Temperature (EVT) Application Range:** the recommended bitumen application temperature range. The range is approximately 25 F (14 C) above or below the EVT, thus giving a range of approximately 50 F (28 C). The EVT Range Temperature is measured in the mop cart or mechanical spreader just prior to application of the bitumen to the substrate.
- Expansion Joint:** a structural separation between two building elements that allows free movement between the elements without damage to the roofing or waterproofing system.
- Exposure:** (1) the traverse dimension of a roofing element or component not overlapped by an adjacent element or component in a roof covering. For example, the exposure of any ply in a built-up roof membrane may be computed by dividing the felt width minus 2 inches (51mm) by the number of shingled plies; thus, the exposure of 36 inch (914mm) wide felt in a shingled, four-ply membrane should be approximately 8 1/2 inches (216mm); (2) the dimension of sidewall or roofing covering that is not covered or overlapped by the upslope course or typical exposure for a standard -size, 3 tab shingle is 5 inches (127 mm), depending upon manufacturer specifications.
- Fabric:** a woven cloth or material of organic filaments, threads, or yarns used for reinforcement in certain membranes and flashings.
- Factory Mutual (FM):** a research and testing organization that classifies roofing components and assemblies for their fire, traffic, impact (hail), weathering, and wind uplift resistance for four major insurance companies in the United States.
- Fascia:** a vertical or steeply sloped roof or trim located at the perimeter of a building. Typically, it is a border for the low-slope roof system that waterproofs the interior portions of the building.
- Fasteners:** any of a wide variety of mechanical securement devices and assemblies, including nails, screws, cleats, clips, and bolts, which may be used to secure various components of a roof assembly.
- Felt:** a flexible sheet manufactured by the interlocking of fibers through a combination of mechanical work, moisture, and heat. Roofing felts may be 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. Rigid boards usually have an asphalt and kraft paper facer.
- Fine Mineral-Surfacing:** water-insoluble, inorganic material, more than 50 percent of which passes through a No. 35 sieve. Used on the surface of various roofing materials and membranes to prevent sticking.
- Fishmouth:** (1) a half-cylindrical or half-conical shaped opening or void in a lapped edge or seam, usually caused by wrinkling or shifting of ply sheets during installation; (2) in shingles, a half-conical opening formed at a cut edge. (Also referred to as an Edge Wrinkle.)

# Roofing Glossary of Terms - continued

- Flange:** the projecting edge of a rigid or semi-rigid component, such as a metal edge flashing flange, skylight flange, flashing boot, structural member, etc.
- Flash Point:** the lowest temperature of a liquid at which it gives off vapors sufficient to form an ignitable mixture with air near its surface.
- Flashing:** components used to weatherproof or seal the roof system edges at perimeters, penetrations, walls, expansion joints, valley, drains, and other places where the roof covering is interrupted or terminated.
- Flashing Cement:** a trowelable mixture of solvent-based bitumen and mineral stabilizers that may include asbestos or other inorganic or organic fibers. Generally, flashing cement is characterized as vertical-grade, which indicates it is intended for use on vertical surfaces. (See Asphalt Cement and Plastic Cement.)
- Flashing Collar:** an accessory flashing used to cover and/or seal soil pipe vents and other penetrations through the roof. (Sometimes referred to as a Roof Jack or Flashing Boot.)
- Flood (Pour) Coat:** the surfacing layer of bitumen into which surfacing aggregate is embedded on an aggregate-surfaced built-up roof. A flood coat is generally thicker and heavier than a glaze coat and is applied at approximately 45-60 pounds per square (2-3 kilograms per meter).
- Flood Test:** the procedure where a controlled amount of water is temporarily retained over a horizontal surface to determine the effectiveness of the waterproofing.
- Fluid Applied Elastomer:** a liquid elastomeric material that cures after application to form a continuous waterproofing membrane.
- Galvanized:** to coat with zinc.
- Galvanized Steel:** steel coated with zinc for corrosion resistance.
- Glass Felt:** a sheet composed of bonded glass fibers, suitable for filling and coating in the manufacture of bituminous roofing and waterproofing materials, and shingles.
- Glass Mat:** a thin mat composed of glass fibers, woven or non-woven, with or without a binder. This mat may serve as reinforcement for certain roof materials and membranes.
- Glaze Coat:** (1) the top layer of asphalt on a smooth-surfaced built-up roof membrane; (2) a thin protective coating of bitumen applied to the lower plies or top ply of a built-up roof membrane when application of additional felts or the flood coat and aggregate surfacing are delayed. (See Flood Coat.)
- Grain:** a unit used to measure the mass of moisture.
- Granule:** opaque, natural, or synthetically colored aggregate commonly used to surface cap sheets, shingles, and other granule-surfaced roof coverings.
- Gravel:** aggregate resulting from the natural erosion of rock.

# Roofing Glossary of Terms - continued

<b>Gravel Stop:</b>	a low profile upward-projecting metal edge flashing with a flange along the roof side, usually formed from sheet or extruded metal. Installed along the perimeter of a roof to provide a continuous finished edge for roofing material. Acts as a bitumen-stop during mop application of hot bitumen along perimeter edge.
<b>Gutter:</b>	a channeled component installed along the downslope perimeter of a roof to convey run-off water from the roof to the drain leaders or downspouts.
<b>Headlap:</b>	the distance of overlap measured from the uppermost ply or course to the point that it laps over the undermost ply or course.
<b>Heat Transfer:</b>	the transmission of thermal energy from a location of higher temperature to a location of lower temperature. This can occur by conduction, convection, or radiation.
<b>Heat Welding:</b>	method of melting and fusing together the overlapping edges of separate sheets or sections of polymer modified bitumen, thermoplastics or some uncured thermoset roofing membranes by the application of heat (in the form of hot air or open flame) and pressure.
<b>Hip:</b>	inclined external angle formed by the intersection of two sloping roof planes.
<b>Holiday:</b>	an area where a liquid-applied material is missing or absent.
<b>“Hot” or “Hot Stuff”:</b>	the roofer’s term for hot bitumen.
<b>Hygroscopic:</b>	the property of a material to attract, absorb, and retain atmospheric moisture.
<b>Ice Dam:</b>	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.
<b>Incline:</b>	the slope of a roof expressed either in percent or in the number of vertical units of rise per horizontal units of run. (See Slope.)
<b>Infrared Thermography:</b>	a practice of roof system analysis where an infrared camera is used to measure the temperature differential of a roof surface to locate areas of underlying wet or moist insulation. (See Thermal Image.)
<b>Inorganic:</b>	any chemical or compound that is derived from minerals, does not contain carbon, and is not classified as organic; being or composed of materials other than hydrocarbons and their derivatives; not of plant or animal origin.
<b>Insulation:</b>	any of a variety of materials designed to reduce the flow of heat, either from or into a building. (See Thermal Insulation.)
<b>Interlayment:</b>	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 rain and snow. Typically used with wood shakes.

# Roofing Glossary of Terms - continued

<b>Internal Pressure:</b>	pressure inside a building that is a function of ventilating equipment, wind velocity, and the number and location of openings and air leaks.
<b>Inverted Roof Membrane Assembly (IRMA):</b>	a patented, proprietary variation of the “Protected Membrane Roof Assembly” in which Styrofoam Brand insulation and ballast are placed over the roof membrane.
<b>Isocyanate:</b>	a highly organic chemical containing one or more isocyanate (-N=C=O) groups. A basic component in SPF based systems and some polyurethane coating systems.
<b>Joist:</b>	any of the small timbers, metal or wood beams arranged parallel from wall to wall to support a floor, ceiling, or roof of a building.
<b>Knee Cap:</b>	a metal cover trim that fits over a panel rib after it has been cut and bent.
<b>Lap:</b>	that part of a roofing, waterproofing, or flashing component that overlaps or covers any portion of the same or another type of adjacent component.
<b>Lap Seam:</b>	occurs where overlapping materials are seamed, sealed or otherwise bonded.
<b>Life Cycle Costing:</b>	a method of economic analysis that takes into account expected costs over the useful life of an asset.
<b>Live Loads:</b>	temporary loads that the roof structure must be designed to support, as required by governing building codes. Live loads are generally moving and/or dynamic or environmental (e.g., people, installation equipment, wind, snow, ice or rain, etc.).
<b>Loose-Laid Membranes:</b>	membranes that are not attached to the substrate except at the perimeter of the roof and at penetrations. Typically, loose laid membranes are held in place with ballast, such as water-worn stone, gravel, pavers, etc.
<b>Mansard Roof:</b>	a steeper roof that terminates into a flat roof at its high point.
<b>Mastic:</b>	see Asphalt Roof Cement.
<b>Mechanically-Fastened Membranes:</b>	generally used to describe membranes that have been attached at defined intervals to the substrate. Mechanically fastening may be performed with various fasteners and/or other mechanical devices, such as plates or battens.
<b>Membrane:</b>	a flexible or semi-flexible material, which functions as the waterproofing component in a roofing or waterproofing assembly, and whose primary function is the exclusion of water.
<b>Metal Flashing:</b>	accessory components fabricated from sheet metal and used to weatherproof terminating roof covering edges. Frequently used as through-wall flashing, cap flashing (coping), counterflashing, stepflashing, etc. (See Flashing.)

# Roofing Glossary of Terms - continued

- Metallic Waterproofing:** (1) a compound modified through the inclusion of one or more polymers (e.g., atactic polypropylene, styrene butadiene styrene, etc.); (2) composite sheets consisting of a polymer modified bitumen often reinforced and sometimes surfaced with various types of mats, films, foils, and mineral granules.
- Mineral Fiber:** inorganic fibers of glass, asbestos, or rock (mineral wool).  
**Mineral Granules:** see Granules.
- Mineral Stabilizer:** a fine, water-insoluble inorganic material, used in a mixture with solid or semi-solid bituminous materials.
- Mineral-Surfaced Roofing:** roofing materials whose surface or top layer consists of mineral granules.
- Mineral-Surfaced Sheet:** a roofing sheet that is coated on one or both sides with asphalt and surfaced with mineral granules.
- Miter:** the joint produced by joining two diagonally cut pieces.
- Modified Bitumen:** (1) a bitumen modified through the inclusion of one or more polymers (e.g., atactic polypropylene, styrene butadiene styrene, etc.); (2) composite sheets consisting of a polymer modified bitumen often reinforced and sometimes surfaced with various types of mats, films, foils, and mineral granules.
- Moisture Relief Vent:** a venting device installed through the roofing membrane to relieve moisture vapor pressure from within the roofing system.
- Moisture Scan:** the use of a mechanical device (capacitance, infrared, or nuclear) to detect the presence of moisture within a roof assembly. (See Non-Destructive Testing.)
- Mole Run:** a meandering buckle or ridging in a roof membrane not associated with insulation or deck joints.
- Mop-and-Flop:** an application procedure in which roofing elements (insulation boards, felt plies, cap sheets, etc.) are initially placed upside down adjacent to their ultimate locations, are coated with adhesive or bitumen, and then turned over and applied to the substrate.
- Mopping:** the application of hot bitumen, with a roofer's hand mop or mechanical applicator, to the substrate or to the felts of a bituminous membrane.
- Solid Mopping:** a continuous mopping of a surface.
- Spot Mopping:** a mopping pattern in which hot bitumen is applied in roughly circular areas, leaving a grid of unmopped, perpendicular bands on the roof.
- Sprinkle Mopping:** a random mopping pattern in which heated bitumen beads are strewn into the substrate with a brush or mop.
- Strip Mopping:** a mopping pattern in which hot bitumen is applied in parallel bands.

# Roofing Glossary of Terms - continued

<b>Nailer:</b>	a piece of dimensional lumber and/or plywood secured to the structural deck or walls, which provides a receiving medium for the fasteners used to attach membrane or flashing. Generally, it is recommended that nailers be the same thickness as the adjacent insulation, and may be treated with a non-oil-borne preservative, and be of sufficient width to fully support the horizontal flashing flange of a metal flashing. (Commonly referred to as Blocking).
<b>Nailing:</b>	the application of nails. May be: (1) exposed nailing of roofing wherein nail heads are exposed to the weather; (2) concealed nailing of roofing wherein nail heads are concealed from the weather by an overlapping material.
<b>NBP:</b>	acrylonitrile butadiene polymer blend. One proprietary NBP membrane is commonly referred to as nitrile butadiene copolymer.
<b>Neoprene:</b>	a synthetic rubber (polychloroprene) used in liquid-applied and sheet-applied elastomeric roof membranes or flashings.
<b>Nesting:</b>	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.
<b>Night Seal (or Night Tie-Off):</b>	a material and/or method used to temporarily seal a membrane edge during construction to protect the roofing assembly in place from water penetration.
<b>Nineteen-Inch Selvage (Double-Coverage or Split-Sheet):</b>	a prepared roofing sheet with a 17 inch (430mm) granule surfaced exposure and a non-granule surfaced 19 inch (485mm) selvage edge.
<b>Non-Destructive Testing: (NDT)</b>	a method to evaluate the disposition, strength, or composition of materials without damaging the object under test. Typically used to evaluate moisture content in roofing assemblies, the three common test methods are electrical capacitance, infrared thermography, and nuclear back-scatter.
<b>Non-Friable:</b>	a material that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
<b>Non-Oxidizing:</b>	a material which resists oxidation in exterior exposures or accelerated weathering.
<b>Non-Traffic Bearing:</b>	for waterproofing purposes, a membrane system requiring some form of protection barrier and wearing surface.
<b>Non-Vulcanized Membrane:</b>	a membrane manufactured from thermoplastic compounds that retains its thermoplastic properties throughout the service life of the membrane.
<b>Nonwoven:</b>	a term used to describe the random arrangement of reinforcing fibers (glass, polyester, etc.) in a mat or scrim.
<b>Nuclear Testing (Nuclear Back-Scatter):</b>	a device that contains a radioactive source to emit high velocity neutrons into a roof system. Reflecting neutrons are measured by a gauge that is used to detect moisture.



# Roofing Glossary of Terms - continued

<b>Open Valley:</b>	a method of valley construction in which the steep-slope roofing on both sides is trimmed along each side of the valley, exposing the valley flashing.
<b>Orange Peel Surface Texture</b>	the surface shows a fine texture and is compared to the exterior skin of an orange. This surface is considered acceptable for receiving a protective coating. The theoretical coverage rate cannot be used without adding a minimum 10% additional material to adequately cover the orange peel texture.
<b>Organic:</b>	being or composed of hydrocarbons or their derivatives originating from plant or animal matter.
<b>Organic Felt:</b>	an asphalt roofing base material manufactured from cellulose fibers.
<b>Organic Shingle:</b>	an asphalt shingle reinforced with material manufactured from cellulose fibers.
<b>Pan:</b>	the bottom flat part of a roofing panel which is between the ribs of the panel.
<b>Pan Former:</b>	power roll-forming equipment that produces a metal roofing panel from a flat sheet.
<b>Parapet Wall:</b>	that part of a perimeter wall immediately adjacent to the roof which extends above the roof.
<b>Partially-Attached:</b>	a roofing assembly in which the membrane has been "spot fixed" to a substrate, usually with an adhesive or a mechanical device.
<b>Peel Strength:</b>	the average force (or force per unit width) required to peel a membrane or other material from the substrate to which it has been bonded.
<b>Penetration:</b>	any object passing through the roof.
<b>Percent Elongation:</b>	in tensile testing, the increase in the gauge length of a specimen measured at or after fracture of the specimen within the gauge length. Usually expressed as a percentage of the original gauge length.
<b>Perlite:</b>	an aggregate used in lightweight insulating concrete and in preformed perlite insulation boards, formed by heating and expanding siliceous volcanic glass.
<b>Perm:</b>	a unit of water vapor transmission defined as 1 grain of water vapor per square foot per hour per inch of mercury pressure difference (1 inch of mercury = 0.49 psi). The formula for perm is: $P = \text{Grains of Water Vapor} / \text{Foot} \cdot \text{Hour} \cdot \text{Inch Mercury}$ ( $P = \text{ng} / (\text{Pa} \cdot \text{s} \cdot \text{m})$ ).
<b>Square</b>	
<b>Permeability:</b>	(1) the capacity of a porous material to conduct or transmit fluids; (2) the amount of a fluid moving through a barrier in a unit time, unit area, and unit pressure gradient not normalized for, but directly related to, thickness.
<b>Permeance:</b>	the rate of water vapor transmission per unit area at a steady state through a material, membrane or assembly, expressed in Grain/Square Foot•Hour•Inch Mercury ( $\text{grain} / \text{ft} \cdot \text{h} \cdot \text{in Hg} [\text{ng} / \text{Pa} \cdot \text{a} \cdot \text{m}]$ ).



# Roofing Glossary of Terms - continued

<b>Phased Application:</b>	the installation of separate roof system or waterproofing system component(s) during two or more separate time intervals. Application of surfacings at different time intervals is typically not considered phased application. (See Surfacing.)
<b>Picture Framing:</b>	a square or rectangular pattern of buckles or ridges in a roof covering generally coinciding with insulation or deck joints; generally, a function of movement of the substrate.
<b>Pipe Boot:</b>	prefabricated flashing piece used to flash around circular pipe penetrations.
<b>Pitch:</b>	see Coal Tar, Incline, and Roof Slope.
<b>Pitch-Pocket (Pitch-Pan):</b>	a flanged, open bottomed enclosure made of sheet metal or other material, placed around a penetration through the roof, filled with grout and bituminous or polymeric sealants to seal the area around the penetration.
<b>Plastic Cement:</b>	a roofing industry generic term used to describe Type I asphalt roof cement that is a trowelable mixture of solvent-based bitumen, mineral stabilizers, other fibers and/or fillers. Generally, intended for use on relatively low slopes - not vertical surfaces. (See Asphalt Roof Cement and Flashing Cement.)
<b>Pliability:</b>	the material property of being flexible or moldable.
<b>Ply:</b>	a layer of felt, ply sheet, or reinforcement in a roof membrane or roof system.
<b>Polyisobutylene (PIB):</b>	a product formed by the polymerization of isobutylene. May be compounded for use as a roof membrane material.
<b>Polymer:</b>	a natural or synthetic chemical compound of high molecular weight, or a mixture of such compounds, formed when monomers (small individual molecules) are combined to form large long-chain molecules.
<b>Polymer Mod. Bitumen:</b>	see Modified Bitumen.
<b>Polypropylene:</b>	a tough, lightweight plastic made by the polymerization of high-purity propylene gas.
<b>Polyvinyl Chloride (PVC):</b>	a synthetic thermoplastic polymer prepared from vinylchloride. 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.
<b>Ponding:</b>	the excessive accumulation of water at low-lying areas on a roof.
<b>Positive Drainage:</b>	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 rainfall, during ambient drying conditions.
<b>Pourable Sealer:</b>	a type of sealant often supplied in two parts and used at difficult-to-flash penetrations, typically in conjunction with pitch-pockets to form a seal.

# Roofing Glossary of Terms - continued

<b>Primer:</b>	(1) a thin, liquid-applied solvent-based bitumen that may be applied to a surface to improve the adhesion of subsequent applications of bitumen; (2) a material which is sometimes used in the process of seaming single-ply membranes to prepare the surfaces and increase the strength (in shear and peel) of the field splice.
<b>Proportioner:</b>	the basic pumping unit of SPF or two component coating systems. Consists of two positive displacement pumps designed to dispense two components at a precisely controlled ratio.
<b>Protected Membrane Roof:</b>	an insulated and ballasted roofing assembly, in which the insulation and ballast are applied on top of the membrane (sometimes referred to as an “inverted roof assembly”).
<b>Puncture Resistance:</b>	extent to which a material is able to withstand the action of a sharp object without perforation.
<b>Purlin:</b>	horizontal secondary structural member that transfers loads from the primary structural framing.
<b>PVC:</b>	Polyvinyl Chloride.
<b>R-Value:</b>	the resistance to heat transfer of a material. Insulators have relatively high R-values.
<b>Racking:</b>	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.
<b>Raggle:</b>	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.
<b>Rake:</b>	the sloped edge of a roof at or adjacent to the first or last rafter.
<b>Re-Cover:</b>	the addition of a new roof membrane or steep-slope roof covering over a major portion of an existing roof assembly. This process does not involve removal of the existing roof.
<b>Reglet:</b>	a sheet metal receiver for the attachment of counterflashing. A reglet may be inset into a raggle, embedded behind cladding, or be surface mounted.
<b>Reinforced Membrane:</b>	a roofing or waterproofing membrane that has been strengthened by the addition or incorporation of one or more reinforcing materials, including woven or nonwoven glass fibers, polyester mats or scrim, nylon, or polyethylene sheeting.
<b>Relative Humidity:</b>	the ratio of the weight of moisture in a given volume of air-vapor mixture to the saturated (maximum) weight of water vapor at the same temperature, expressed as a percentage. (For example, if the weight of the moist air is 1 pound and if the air could hold 2 pounds of water vapor at the same temperature, the relative humidity (RH) is 50 percent.)

# Roofing Glossary of Terms - continued

<b>Release Tape:</b>	a plastic film or paper strip that is applied to the back of self-sealing shingles and other materials. The strip prevents the material from sticking together in the roll or bundle. With asphalt shingles, the strip need not be removed for application of the shingles.
<b>Replacement:</b>	the practice of removing an existing roof system down to the roof deck and replacing it with a new roofing system.
<b>Reroofing:</b>	the process of re-covering, or tearing off and replacing an existing roof system.
<b>Ridge:</b>	highest point on the roof, represented by a horizontal line where two roof areas intersect, running the length of the area.
<b>Ridge Cap:</b>	a material or covering applied over the ridge of a roof.
<b>Ridge Course:</b>	the last or top course of roofing materials, such as tile, roll roofing, shingles, etc., that covers the ridge and overlaps the intersecting field roofing.
<b>Ridging:</b>	see Buckle.
<b>Roll Goods:</b>	a general term applied to rolls of roofing felt, ply sheet, etc., which are typically furnished in rolls.
<b>Roll Roofing:</b>	smooth-surfaced or mineral-surfaced, coated, prepared felts.
<b>Roof Assembly:</b>	an assembly of interacting roof components (includes the roof deck, vapor retarder [if present], insulation, and roof covering).
<b>Roof Covering:</b>	the exterior roof cover or skin of the roof assembly, consisting of membrane, panels, sheets, shingles, tiles, etc.
<b>Roof Curb:</b>	raised frame used to mount mechanical units (such as air conditioning or exhaust fans), skylights, etc.
<b>Roof Jack:</b>	a metal bracket used to support toe-boards on steep-slope roofs. (See Flashing Collar.)
<b>Roof Seamer:</b>	machine that crimps neighboring metal roof panels together or that welds laps of membrane sheets together using heat, solvent, or dielectric energy.
<b>Roof Slope:</b>	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 a percent.
<b>Roof System:</b>	a system of interacting roof components, generally consisting of membrane or primary roof covering and insulation (not including the roof deck) designed to weatherproof and, sometimes, to improve the building's thermal resistance.
<b>Roofer:</b>	craftsperson who applies roofing materials.
<b>Rosin Paper:</b>	a non-asphaltic paper used as a sheathing paper or slip sheet in some roof systems.

# Roofing Glossary of Terms - continued

<b>Rubber:</b>	a polymeric material which, at room temperature, is capable of recovering substantially in shape and size after removal of force. May be natural or synthetic.
<b>Saddle:</b>	a relatively small raised substrate or structure constructed to channel or direct surface water to drains or off the roof. A saddle may be located between drains or in a valley, and is often constructed like a small hip roof or like a pyramid with a diamond-shaped base. (See Cricket.)
<b>Saturated Felt:</b>	a felt that has been partially saturated with low softening point bitumen.
<b>Scrim:</b>	a woven, nonwoven, or knitted fabric, composed of continuous strands of material used for reinforcing or strengthening membranes. Scrim may be incorporated into a membrane by the laminating or coating process.
<b>Scuttle:</b>	a hatch that provides access to the roof from the interior of the building.
<b>Seal:</b>	(1) a generic term for a function that prevents or controls the passage of water; (2) to secure a roof or structure from the entry of moisture.
<b>Sealant:</b>	a single- or multi-component polymeric or bituminous material used to weather-proof many types of construction joints where moderate movement is expected. The material comes in various grades: pourable, self-leveling, non-sag, gun grade, and cured or uncured tapes.
<b>Sealing Washer:</b>	a rubber or neoprene washer, sometimes metal-backed, typically assembled on a fastener to prevent water from migrating into and through the fastener hole.
<b>Seam:</b>	a joint formed by mating two separate sections of material. Seams may be made or sealed in a variety of ways, including adhesive bonding, hot-air welding, solvent welding, using adhesive tape, sealant, etc.
<b>Seam Strength:</b>	the force or stress required to separate or rupture a seam in the membrane material.
<b>Self-Adhering Membrane:</b>	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.
<b>Self-Drilling Screw:</b>	a fastener that drills and taps its own hole during application.
<b>Self-Sealing Shingle:</b>	an asphalt shingle containing factory-applied strip or spots of heat sensitive adhesive intended to adhere to the overlying shingle once installed on the roof and warmed by the sun.
<b>Self-Vulcanized Membrane:</b>	a membrane manufactured from compounds that are thermoplastic during manufacture and installation, but whose polymers eventually cross-link and cure during exposure.
<b>Selvage:</b>	(1) an edge or edging that differs from the main part of a fabric, granule-surfaced roll roofing or cap sheet, or other material; (2) a specially defined edge of the material (lines for demarcation), which is designed for some special purpose, such as overlapping or seaming.

# Roofing Glossary of Terms - continued

<b>Selvage Edge:</b>	an edge designed for certain sheet good materials, e.g., mineral-surfaced sheets. With mineral-surfaced sheets, the surfacing is omitted over a portion of the longitudinal edge of the sheet (e.g., mineral-surfaced cap sheet) in order to obtain better adhesion of the overlapping sheet.
<b>Shark Fin:</b>	an upward-curved felt side lap or end lap.
<b>Shear Strength:</b>	the stress required to disrupt a seam or bonded joint or attachment by forcing the substrate material to slide out from the overlying material or vice versa.
<b>Shingle:</b>	(1) individual unit of prepared roofing material designed for installation with similar units in overlapping rows or courses on inclines normally exceeding 3:12 slope (25%); (2) to cover with shingles; (3) to apply any roofing material in succeeding overlapping rows or courses similar to shingles.
<b>Shingling:</b>	(1) the application of shingles; (2) the procedure of applying shingles or laying parallel felts so that one longitudinal edge of each felt overlaps and the other longitudinal edge of the adjacent shingle or felts underlaps. Felts are normally shingled from a downslope portion of the roof to the upslope portion of the roof area so that run-off water flows over rather than against each felt lap. Felts are also applied in shingle fashion on relatively low slopes.
<b>Shrinkage:</b>	a reduction in size.
<b>Shrinkage Crack:</b>	in waterproofing, a separation in a material, like a concrete substrate, caused by the inability of the material to resist a reduction in size which occurs during its hardening process, curing process, or both.
<b>Side Lap:</b>	the continuous longitudinal overlap of neighboring like materials.
<b>Side Lap Fastener:</b>	a fastener used to connect adjacent panels together at the side lap.
<b>Side Lap-Ganging:</b>	pattern or application for roofing materials, as related to the amount of cover or side overlap of adjacent like materials.
<b>Sieve:</b>	an apparatus with uniform sized openings for separating sizes of material.
<b>Single Coverage:</b>	roofing material that provides one layer over the substrate to which it is applied.
<b>Single-Lock Standing Seam:</b>	a standing seam that utilizes one overlapping interlock between two seam panels, in contrast with the double interlocking used in a double standing seam.
<b>Single-Ply Membranes:</b>	roofing membranes that are field applied using just one layer of membrane material (either homogeneous or composite) rather than multiple layers.
<b>Single-Ply Roofing:</b>	a roofing system in which the principal roof covering is a single layer flexible membrane, often thermoset, thermoplastic, or polymer modified bituminous compounds.
<b>Single-Ply System:</b>	generally, there are six types of single-ply roofing systems:

# Roofing Glossary of Terms - continued

- 1) Fully-adhered
- 2) Loose-laid
- 3) Mechanically-fastened
- 4) Partially-adhered
- 5) Protected membrane roof
- 6) Self-adhering

<b>Skinning:</b>	the formation of a dense film on the surface of a liquid coating or mastic.
<b>Slag:</b>	a hard, air-cooled aggregate that is left as a residue from blast furnaces, which may be used as a surfacing material on certain (typically bituminous) roof membrane systems.
<b>Slate:</b>	a hard, brittle metamorphic rock consisting mainly of clay materials, used extensively as dimensional stone for steep roofing, and in granular form as surfacing on some other roofing materials.
<b>Slip Sheet:</b>	sheet material, such as reinforced kraft paper, rosin-sized paper, polyester scrim, or polyethylene sheeting, placed between two components of a roof assembly (such as between membrane and insulation or deck) to ensure that no adhesion occurs between them, and to prevent possible damage from chemical incompatibility, wearing, or abrasion of the membrane.
<b>Slope:</b>	the angle of incline, usually expressed as a ratio of rise to run, or as a percent. (See Roof Slope.)
<b>Smooth Surface Texture:</b>	the surface shows spray undulation and is ideal for receiving a protective coating. Even though the surface texture is classified as smooth, the theoretical coverage rate cannot be used without adding a minimum of 5% additional material to adequately cover the undulation.
<b>Smooth Surface Roof:</b>	a roof membrane without mineral, granule, or aggregate surfacing.
<b>Snap-On Cap:</b>	a separate cap that snaps on over the vertical legs of some single standing or batten seam metal roof systems.
<b>Snow Guard:</b>	a series of devices attached to the roof in a pattern that attempts to hold snow in place, this preventing sudden snow or ice slides from the roof.
<b>Snow Load:</b>	a load imposed on buildings or other structures due to snowfall. (Categorized as live or environmental load.)
<b>Soffit:</b>	the enclosed underside of any exterior overhanging section of a roof eave.
<b>Softening Point:</b>	the temperature at which bitumen becomes soft enough to flow, as determined by a closely defined method.
<b>Soil Stack:</b>	a sanitation pipe that penetrates the roof.
<b>Solder:</b>	a lead/tin mixture that is melted and used to bond two pieces of some metals together.
<b>Solid Mopping:</b>	see Mopping.

# Roofing Glossary of Terms - continued

<b>Solvent Welding:</b>	a process where a liquid solvent is used to chemically weld or join together two or more layers of certain membrane materials (usually thermoplastic).
<b>Special Steep Asphalt:</b>	Type IV Asphalt. (See Asphalt.)
<b>Specification:</b>	a statement of requirements for a given job or project. Usually describes products, materials, and processes to be used. A specification may also contain terms of the contract.
<b>SPF:</b>	Sprayed Polyurethane Foam.
<b>SPF Compound:</b>	a term used to describe the raw materials (isocyanate and resin) used to make polyurethane foam.
<b>Splice:</b>	bonding or joining of overlapping materials. (See Seam.)
<b>Split:</b>	a rupture (generally linear) or tear in a material or membrane resulting from tensile forces.
<b>Split Sheet:</b>	see Nineteen-Inch Selvage.
<b>Sprayed Polyurethane (SPF)</b>	a foamed plastic material, formed by spraying two components, PMDI ([A] component) and a resin ([B] component) to form a rigid, fully adhered, water-resistant, and insulating membrane. Foam:
<b>Sprinkle Mopping:</b>	see Mopping.
<b>Square:</b>	100 square feet (9.29m <sup>2</sup> ) of roof area.
<b>Square-Tab Shingles:</b>	shingles with tabs that are all the same size and exposure.
<b>Standing Seam:</b>	a metal roof system that consists of an overlapping or interlocking seam that occurs at an upturned rib. The standing seam may be made by turning up the edges of two adjacent metal panels and overlapping them, then folding or interlocking them in a variety of ways.
<b>Starter Course:</b>	the first layer of roofing, applied along a line adjacent to the downslope perimeter of the roof area. With steep-slope watershedding roof coverings, the starter course is covered by the first course.
<b>Starter Sheets:</b>	(1) felt, ply sheet, or membrane strips that are made or cut to widths narrower than the standard width of the roll, used to start the shingling pattern at an edge of the roof; (2) particular width sheets designed for perimeters in some mechanically attached and fully adhered single-ply systems.
<b>Static Load:</b>	any load, as on a structure, that does not change in magnitude or position with time.
<b>Steel Joist:</b>	normally used as a horizontal supporting member between beams or other structural members, suitable for the support of some roof decks.
<b>Steep Asphalt:</b>	Type III Asphalt. (See Asphalt.)

# Roofing Glossary of Terms - continued

<b>Steep-Slope Roof:</b>	a roof of suitable slope to accept the application of watershedding roofing materials.
<b>Steep-Slope Roofing:</b>	a category of roofing that includes watershedding types of roof coverings installed on slopes exceeding 3:12 or 25%.
<b>Step Flashing:</b>	individual pieces of 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.
<b>Stick Clip:</b>	in waterproofing, a non-penetrating fastener that is adhered to the waterproofing surface; typically used to retain insulation, drainage panels, prefabricated protection materials, etc., against the waterproofing to prevent sliding and displacement.
<b>Strapping (Felts):</b>	a method of installing roofing rolls or sheet good materials parallel with the slope of the roof.
<b>Straw Nail:</b>	a long-shanked nail. Sometimes used for fastening over tile at hips and ridges.
<b>Stress:</b>	the internal resistance of a material to a force, measured as a force per unit area.
<b>Strike-Through:</b>	a term used in the manufacture of fabric-reinforced polymeric sheeting to indicate that two layers of polymer have made bonding contact through the scrim or reinforcement.
<b>Strip Mopping:</b>	see Mopping.
<b>Strip Shingles:</b>	asphalt shingles that are manufactured in strips, approximately three times as long as they are wide.
<b>Strippable Films:</b>	(for metal) added protection of plastic films sometimes applied to coated or finished metals after the coil coating process. Applied after prime and top coats to resist damage to the finish prior to and during shipping, fabrication, and installation.
<b>Stripping or Strip-Flashing:</b>	membrane flashing strips used for sealing or flashing metal flashing flanges into the roof membrane.
<b>Stripping In:</b>	application of membrane stripping ply or plies.
<b>Structural Panel:</b>	a panel designed to be applied over open framing in which a structural deck is not required.
<b>Styrene Butadiene Rubber:</b>	high molecular weight polymers having rubber-like properties, formed by the random copolymerization of styrene and butadiene monomers.
<b>Styrene Butadiene Styrene Copolymer:</b>	high molecular weight polymers that have both thermoset and thermoplastic properties, formed by the block copolymerization of styrene and butadiene



# Roofing Glossary of Terms - continued

<b>(SBS)</b>	monomers. These polymers are used as the modifying compound in SBS polymer modified asphalt roofing membranes to impart rubber-like qualities to the asphalt.
<b>Substrate:</b>	the surface upon which the roofing or waterproofing membrane is applied (e.g., in roofing, the structural deck or insulation).
<b>Sump:</b>	an intentional depression around a roof drain or scupper that serves to promote drainage.
<b>Superimposed Loads:</b>	loads that are added to existing loads. For example, a large stack of insulation boards placed on top of a structural steel deck.
<b>Surface Erosion:</b>	the wearing away of a surface due to abrasion, dissolution, or weathering.
<b>Surfacing:</b>	the top layer or layers of a roof covering, specified or designed to protect the underlying roofing from direct exposure to the weather.
<b>Surfactant:</b>	short for “surface active agent”. Used to alter the surface tension of liquids. An ingredient in SPF formulations to aid in mixing and controlling cell size.
<b>Synthetic Rubber:</b>	any of several elastic substances resembling natural rubber, prepared by the polymerization of butadiene, isoprene, and other unsaturated hydrocarbons. Synthetic rubber is widely used in the fabrication of single-ply roofing membranes.
<b>Tab:</b>	the exposed portion of strip shingles defined by cutouts.
<b>Talc:</b>	whitish powder applied at the factory to the surface of some roofing materials (e.g., vulcanized EPDM membranes), used as a release agent to prevent adhesion of the membrane to itself.
<b>Tapered Edge Strip:</b>	a tapered insulation strip used to (1) elevate and slope the roof at the perimeter and at curbs, and (2) provide a gradual transition from one layer of insulation to another.
<b>Taping:</b>	(1) the technique of connecting joints between insulation boards or deck panels with tape; (2) the technique of using self-adhering tape-like materials to seam or splice single-ply membranes.
<b>Tar:</b>	a brown or black bituminous material, liquid or semi-solid in consistency, in which the predominating constituents are bitumens obtained as condensates in the processing of coal, petroleum, oil-shale, wood, or other organic materials.
<b>Tar Boils:</b>	bubbles of moisture vapor encased in a thin film of bitumen, also known as “blackberries.”
<b>Tarred Felt:</b>	see Coal-Tar Felt.
<b>Tear-Off and Reroof:</b>	the removal of all roof system components down to the structural deck, followed by installation of a completely new roof system.

# Roofing Glossary of Terms - continued

- Tear Resistance:** the load required to tear a material, when the stress is concentrated on a small area of the material by the introduction of a prescribed flaw or notch. Expressed in psi (pounds force) per inch width or kN/m (kilonewton per meter width).
- Tear Strength:** the maximum force required to tear a specimen.
- Tensile Fatigue Resistance:** the ability of a given membrane material to resist “fatigue” and/or other damage (such as loss of elasticity) caused by the alternating stretching and relaxing of the material over a period of time.
- Tensile Strength:** the maximum force (longitudinal pulling stress) a material can bear without tearing or breaking apart.
- Tensile Test:** a test in which a specimen is subjected to increasing longitudinal pulling stress until fracture occurs.
- Termination:** the treatment or method of anchoring and/or sealing the free edges of the membrane in a roofing or waterproofing system.
- Terne:** an alloy of lead and tin, used to coat sheets of carbon steel or stainless steel for use as metal roofing sheet.
- Test Cut:** a sample of the roof, which may contain all components or just the membrane, usually used to diagnose the condition of the existing membrane, evaluate the type and number of plies or number of membranes, or rates of application such as determine the weight of the average interply bitumen moppings.
- Thermal Barrier:** a material applied over polyurethane foam designed to slow the temperature rise of the foam during a fire and delay its involvement in the fire. Thermal barriers for use with SPF must have a time rating of not less than 15 minutes.
- Thermal Conductance (C):** a unit of heat flow that is used for specific thicknesses of material or for materials of combination or composite construction, such as laminated insulation. The formula for thermal conductance is:  
 $C = k \text{Thickness in inches}$
- Thermal Conductivity (k):** the heat energy that will be transmitted by conduction through 1 square foot of 1 inch thick homogeneous material in one hour when there is a difference of 1 degree Fahrenheit perpendicularly across the two surfaces of the material. The formula for thermal conductivity is:  $k = \text{Btu/Square Foot/Inch/Hour/Degree Fahrenheit}$
- Thermal Image:** a visual representation of temperature distribution over a surface area. The image is displayed on a screen, presenting the response to infrared light waves.
- Thermal Insulation:** a material applied to reduce the flow of heat.
- Thermal Movement:** changes in the dimension of a material as a result of temperature changes.
- Thermal Resistance (R):** an index of a material's resistance to heat flow; it is the reciprocal of thermal conductivity (k) or thermal conductance (C). The formula for thermal

# Roofing Glossary of Terms - continued

resistance is:  $R = \frac{1}{U}$  or  $R = \frac{1}{k}$  or  $R = \frac{1}{k \times \text{Thickness in inches}}$

- Thermal Shock:** the stress-producing phenomenon resulting from sudden temperature changes in a roof membrane when, for example, a cold rain shower follows a brilliant hot sunshine, which may result in sudden cooling or rapid contraction of the membrane.
- Thermal Stress:** stress introduced by uniform or non-uniform temperature change in a structure or material that is contained against expansion or contraction.
- Thermogram:** a visible light record of the display of an infrared camera system via a Polaroid print, 35mm film, video tape, or computer-generated image.
- Thermography:** a technique for producing heat “pictures” from the radiant energy emitted from stationary or moving objects without in any way influencing the temperatures of the objects under view. The electronic generation and display of a visible image of an infrared spectrum.
- Thermoplastic:** materials that soften when heated and harden when cooled. This process can be repeated provided that the material is not heated above the point at which decomposition occurs.
- Thermoplastic Olefin Membrane: (TPO)** a blend of polypropylene and ethylene-propylene polymers. Colorant flame retardants, UV absorbers, and other proprietary substances which may be blended with the TPO to achieve the desired physical properties. The membrane may or may not be reinforced.
- Thermoset:** a material that solidifies or “sets” irreversibly when heated. This property is usually associated with cross-linking of the molecules induced by heat or radiation.
- Thinner:** a liquid used to reduce the viscosity of coatings or mastic. Thinners evaporate during the curing process. Thinners may be used as solvents for cleanup of equipment.
- Through-Wall Flashing:** a water-resistant material, which may be metal or membrane, extending through a wall and its cavities, positioned to direct water entering the top of the wall or cavity to the exterior, usually through weep holes.
- Tie-Off:** the transitional seal used to terminate a roofing or waterproofing application at the top or bottom of flashings, or by forming a watertight seal with the substrate, membrane or adjacent roofing or waterproofing system.
- Toggle Bolt:** a two-piece assembly consisting of a threaded bolt and an expanding clip that can fit through a drilled hole. The clip can spring outward to provide anchorage from the blind side.
- Tongue and Groove Planks:** one of the oldest types of dimensional structural wood used as roof decking. The sides are cut with convex and concave grooves so adjacent planks may join in alignment with each other to form a uniform roof deck.
- Traffic Bearing:** in waterproofing, a membrane formulated to withstand a predetermined amount

# Roofing Glossary of Terms - continued

of pedestrian or vehicular use with separate protection and a wear course.

**Transverse Seam:** the joint between the top of one metal roof panel and the bottom of the next panel, which runs perpendicular to the roof slope.

**Trebark Surface Texture:** the surface shows a coarse texture where valleys form sharp angles. This surface is unacceptable for proper coating and protection.

**Tuckpointing:** the process of removing deteriorated mortar from an existing masonry joint and troweling new mortar or other filler into the joint.

**Two-Part System:** a coating of SPF formed by the mixing and (usually) the reaction of two different materials.

**U-Value:** overall thermal conductance. U-value is equal to the inverse of the sum of the R-value in a system ( $U=1/R$  total).

**Ultimate Elongation:** the amount a material stretches during tensile testing before it ruptures. Usually expressed as a percentage of the original length.

**Ultraviolet (UV):** relating to, producing, or employing ultraviolet radiation.

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

**Underwriters Laboratories, Inc.: (UL)** an organization that tests, rates and classifies roof assemblies for their resistance to: fire, impact, leakage, corrosion of metal components, and wind uplift.

**Uplift:** see Wind Uplift.

**Vapor Migration:** the movement of water vapor from a region of high vapor pressure to a region of lower vapor pressure.

**Vapor Pressure:** the pressure at any given temperature exerted by a vapor that is in equilibrium with its liquid or solid form.

**Vapor Retarder:** material installed to impede or restrict the passage of water vapor through a roof assembly.

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

**Vermiculite:** an aggregate used in lightweight insulating concrete, formed by the heating and consequent expansion of a micaceous material.

**Viscous:** resistant to flow under stress. Viscous materials are usually cohesive and have a sticky consistency.

**Void:** an open space or break in consistency.

**Volatile:** descriptive of a substance which passes off easily as a gas or vapor,

# Roofing Glossary of Terms - continued

	evaporating quickly.
<b>Volatile Organic Compounds: (VOC)</b>	organic materials which evaporate at normal temperatures and pressures; organic materials which have vapor pressures greater than 0.1 mm Hg at one atmosphere.
<b>Vulcanization:</b>	any of various processes by which natural or synthetic rubber or other polymeric materials may be cured or otherwise treated (i.e., exposed to chemicals, heat, or pressure) to render them non-thermoplastic, and which improve their elastic and physical properties.
<b>Water Absorption:</b>	the amount of water absorbed by a material after immersion for a prescribed period of time. May be expressed as a percentage of the original weight of the material.
<b>Water Cure:</b>	a method of curing a material, such as concrete, by applying a fine mist of water over the surface to control the rate of moisture evaporation from the material.
<b>Water Cutoff:</b>	see Cutoff.
<b>Water Stop:</b>	a diaphragm used across a joint as a sealant, usually to prevent the passage of water.
<b>Waterproof:</b>	the quality of a membrane, membrane material, or other component to prevent water entry.
<b>Waterproofing:</b>	treatment of a surface or structure to prevent the passage of water under hydrostatic pressure.
<b>Weather Infiltration:</b>	the negative condition where rain or snow penetrates the roof. The condition is typically wind-driven.