



## **B.U.R., Modified, & Steep Slope Roofing Systems**

### **9. Glossary of Roofing Terms**

**THIS PAGE INTENTIONALLY LEFT BLANK**

**ASTM:**

ASTM International (formally known as American Society of Testing Methods) is a not-for-profit organization, which provides a forum for producers and consumers to meet on common ground and to write standards for materials, products, systems and services.

**AGGREGATE:**

Crushed stone, crushed slag or water worn gravel used for surfacing a built-up roof: Any granular mineral material.

**ALLIGATORING:**

The cracking of the surfacing bitumen on a built-up roof, producing a pattern of cracks similar to an alligators hide; the cracks may or may not extend through the surfacing bitumen.

**APPLICATION RATE:**

The quantity (mass, volume or thickness) of material applied per unit area.

**AREA DIVIDER:**

A raised, double wood member attached to a properly flashed wood base plate that is anchored to the roof deck. It is used to relieve thermal stresses in a roof system where no expansion joints have been provided (see NRCA Construction Details).

**ASBESTOS:**

A group of natural, fibrous, impure silicate materials.

**ASPHALT:**

A dark brown to black cementitious material in which the predominating constituents are bitumens, which occur in nature or are obtained in petroleum processing.

Steep Asphalt: roofing asphalt conforming to the requirements of ASTM Specification D 312, Type III.

Special Steep Asphalt: roofing asphalt conforming to the requirements of ASTM Specification D 312, Type IV.

**ASPHALT, AIR BLOWN:**

Asphalt produced by blowing air through molten asphalt at an elevated temperature to raise its softening point and modify other properties.

**ASPHALT MASTIC:**

A mixture of asphaltic material and graded mineral aggregate that can be poured when heated but requires mechanical manipulation to apply when cool.

**BACKNAILING:**

The practice of blind-nailing roofing felts to a substrate in addition to hot-mopping to prevent slippage. (see Blind Nailing).

**BASE FLASHING: (SEE FLASHING).****BASE PLY:**

The lowermost ply of roofing material in a roof membrane assembly.

**BASE SHEET:**

A saturated or coated felt placed as the first ply in some multi-ply built-up roof assemblies.

**BITUMEN:**

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.

A generic term used to denote any material composed principally of bitumen.

**BITUMINOUS:**

Containing or treated with bitumen. Examples: bituminous concrete, bituminous felts and fabrics, bituminous pavement.

**BLIND NAILING:**

The practice of nailing the back portion of a roofing ply in a manner that the fasteners are not exposed to the weather in the finished product.

**BLISTER:**

An enclosed pocket of air mixed with water or solvent vapor, trapped between impermeable layers of felt, or between the felt and substrate.

**BLOCKING:**

Wood built into a roofing system above the deck and below the membrane and flashing to stiffen the deck around an opening, act as a stop for insulation, or to serve as a nailer for attachment of the membrane or flashing.

**BOND:**

The adhesive and cohesive forces holding two roofing components in intimate contact.

**BREAKING STRENGTH:**

The amount of tension required to cause material or a system to give way or collapse. It is calculated by measuring the amount of force required to fracture a uniform sized sample.

**BROOMING:**

Embedding a ply of roofing material by using a broom to smooth out the ply and ensure contact with the adhesive under the ply.

**BUILT-UP ROOF MEMBRANES:**

A continuous, semi-flexible roof membrane assembly, consisting of plies of saturated felts, coated felts, fabrics or mats between which alternate layers of bitumen are applied, generally surfaced with mineral aggregate, bituminous materials, or a granule surfaced roofing sheet. (Abbreviation: BUR).

**CANT STRIP:**

A beveled strip used under flashing to modify the angle at the point where the roofing or waterproofing membrane meets any vertical element.

**CAP FLASHING: (SEE FLASHING).****CAP SHEET:**

A granule surfaced coated sheet used as the top ply of a built-up roof membrane or flashing.

**CAULKING:**

A composition of vehicle and pigment, used at ambient temperatures for filling joints, that remains elastic for an extended time after application.

**COLD PROCESS ROOFING:**

A continuous, semi-flexible roof membrane, consisting of plies of felts, mats, or fabrics that are laminated on a roof with alternate layers of cold-applied roof cement and surfaced with a cold-applied coating.

**CONDENSATION:**

The conversion of water vapor or other gas to liquid as the temperature drops or the atmospheric pressure rises. (see *Dew Point*).

**COPING:**

The covering piece on top of a wall exposed to the weather, usually sloped to shed water.

**COUNTERFLASHING:**

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:**

The term used for each application of material that forms the waterproofing system or the flashing.

One layer of a series of material applied to a surface (i.e., a five course wall flashing is composed of three applications of mastic with one ply of felt sandwiched between each layer of mastic).

**COVERAGE:**

The surface area continuously covered by a specific quantity of a particular roofing material.

**CRACK:**

A separation or fracture occurring in a roof membrane or roof deck, generally caused by thermal induced stress or substrate movement.

**CRICKET:**

A relatively small, elevated area of a roof constructed to divert water.

**CUTOFF:**

A detail designed to prevent lateral water movement into the insulation where the membrane terminates at the end of a days work, or used to isolate sections of the roofing system. It is usually removed before the continuation of the work.

**DAMPPROOFING:**

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

**DEAD LEVEL:**

Absolutely horizontal; zero slope.

**DEAD LOADS:**

Non-moving rooftop loads, such as mechanical equipment, air conditioning units, and the roof deck itself.

**DECK:**

The structural surface to which the roofing or waterproofing system (including insulation) is applied.

**DELAMINATION:**

Separation of the plies in a roof membrane system or separation of laminated layers of insulation.

**DEW POINT:**

The temperature at which water vapor starts to condense in cooling air at the existing atmospheric pressure and vapor content.

**DRAIN:**

A device that allows for the flow of water from a roof area.

**EDGE SHEETS:**

Felt strips that are cut to widths narrower than the standard width of the full felt roll, used to start the felt shingling pattern at a roof edge.

**EDGE STRIPPING:**

Application of felt strips cut to narrower widths than the normal felt roll width to cover a joint between flashing and built-up roofing.

**EDGE VENTING:**

The practice of providing regularly spaced protected opening along a roof perimeter to relieve moisture vapor pressure.

**ELASTOMERIC:**

A rubber like synthetic polymer that will stretch when pulled and will return quickly to its original shape when released.

**EMBEDMENT:**

1. The process of pressing a felt, aggregate, fabric, mat, or panel uniformly and completely into hot bitumen or adhesive:

2. The process of pressing granules into coating in the manufacture of factory prepared roofing.

**EMULSION:**

The homogeneous dispersion of an organic material and water achieved by using a chemical or clay emulsifying agent.

**ENVELOPE:**

A continuous membrane edge seal formed at the perimeter and at penetrations by folding the base sheet or ply over the plies above and securing it to the top of the membrane. The envelope prevents bitumen seepage from the edge of the membrane.

**EQUIVISCIOUS TEMPERATURE (EVT):**

The temperature at which the viscosity is 75 centipoise for asphalt and 25 centipoise for coal tar products; the recommended temperature for mopping asphalt plus or minus 25° F at the time of application.

**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 not overlapped by an adjacent element in any roof system. The exposure of any ply in a membrane may be computed by dividing the felt width minus 2 inches by the number of shingled plies.

2. The time during which a portion of a roofing element is exposed to the weather.

**FABRIC:**

A woven cloth of organic or inorganic filaments threads or yarns.

**FACTORY MUTUAL (FM):**

An organization that classifies roof assemblies for their fire characteristics and wind uplift resistance for insurance companies in the United States.

**FELT:**

A flexible sheet manufactured by the interlocking of fibers through a combination of mechanical work, moisture and heat. Felts are manufactured principally from vegetable fibers (organic felts), or glass fibers (glass fiber felts); other fibers may be present in each type.

**FELT LAYER:**

A machine used for applying bitumen and built-up roofing plies.

**FISHMOUTH:**

A half-Cylindrical or half conical opening formed by an edge wrinkle

In shingles, a half-conical opening formed at a cut edge.

**FLASHING:**

The system used to seal membrane edges at walls, expansion joints, drains, gravel stops and other places where the membrane is interrupted or terminated. Base flashing covers the edge of the membrane. Cap flashing or counterflashing shields the upper edges of the base flashing.

**FLASHING CEMENT:**

A trowelable mixture of cutback bitumen and mineral stabilizers, including organic or other inorganic fibers.

**FLOOD COAT:**

The top layer of bitumen into which the aggregate is embedded on an aggregate-surfaced built-up roof.

**FLUID APPLIED:**

An elastomeric material, fluid at ambient temperature, that dries or cures after application to form a continuous membrane. Such systems normally do not incorporate reinforcement.

**GLASS FELT:**

A mat composed of glass fibers with or without a binder.

**GLAZE COAT:**

The top layer of asphalt in a smooth surfaced built-up roof assembly;

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.

**GRAVEL:**

Coarse, granular aggregate, with pieces larger than sand grains, resulting from the natural erosion of rock.

**GRAVEL STOP:**

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

**HEADLAP:**

The minimum distance, measured at 90 degrees to the eaves along the face of a shingle or felt, from the upper edge or the shingle or felt to the nearest exposed surface.

**HOLIDAY:**

An area where a liquid-applied material is missing.

**HOT:**

“Hot Stuff” or “Hot”, the roofer’s term for hot bitumen.

**ICE DAM:**

A mass of ice formed at the transition from a warm to a cold roof surface, frequently formed by refreezing melt water at the overhang of a steep roof, causing ice and water to back up under roofing materials.

**INCLINE:**

The slope of a roof expressed either in percent or in the number of vertical units of rise per horizontal unit of run.

**INORGANIC:**

Being or composed of matter other than hydrocarbons and their derivatives, or matter that is not of plant or animal origin.

**KNOT:**

An imperfection or non-homogeneity in material used in fabric construction, the presence of which causes surface irregularities.

**LIVE LOADS:**

Moving roof installation equipment, wind, snow, ice or rain.

**MASTIC: (SEE FLASHING CEMENT OR ASPHALT MASTIC).****MEMBRANE:**

A flexible or semi-flexible roof covering or waterproofing layer, whose primary function is the exclusion of water.

**METAL FLASHING:**

Metal flashing is frequently used as through-wall flashing, cap flashing, counterflashing or gravel stops (see Flashing).

**MINERAL GRANULES:**

Opaque, natural, or synthetically colored aggregate commonly used to surface cap sheets, granule-surfaced sheets and roofing shingles.

**MINERAL STABILIZER:**

A fine, water-insoluble, inorganic material, used in a mixture with solid or semi-solid bituminous materials.

**MINERAL SURFACED ROOFING:**

Built-up roofing materials whose top ply consists of a granule-surfaced sheet.

**MINERAL SURFACED SHEET:**

A felt that is coated on one or both sides with asphalt and surfaced with mineral granules.

**MODIFIED BITUMEN:**

These are composite sheets consisting of a copolymer-modified bitumen often reinforced and sometimes surfaced with various types of films, foils and mats.

**MOP AND FLOP:**

An application procedure in which the cap sheets are initially placed upside down adjacent to their ultimate location, the plied area is coated with hot asphalt, and the cap sheet is flopped and rolled over into the hot asphalt over the plied area.

**MOPPING:**

Solid Mopping: a continuous mopping of a surface, leaving no unmopped areas.

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 onto a base sheet. The base sheet is then positioned onto the vertical, wooden surface of a wall, curb, etc. that is receiving base flashing reinforcement. The base sheet surface is then rubbed to promote contact and scatter-nailed with 1” cap head fasteners.

**NEOPRENE:**

A synthetic rubber (polychloroprene) used in liquid applied and sheet applied elastomeric roof membrane or flashings.

**PARAPET WALL:**

That part of any wall entirely above the roof.

**PERLITE:**

An aggregate used in lightweight insulating concrete and in preformed perlitic insulation board, formed by heating and expanding siliceous volcanic glass.

**PERM:**

The time rate of vapor transmission through a flat material or construction induced by vapor pressure difference between two specific surfaces, under specific temperature and humidity conditions.

**PERMEANCE:**

An index of a material’s resistance to water vapor transmission. (see Perm).

**PICTURE FRAMING:**

A rectangular pattern of ridges in a roof membrane over insulation or deck joints.

**PITCH POCKET:**

A flange, open-bottomed, metal container placed around columns or other roof penetrations that is filled with hot bitumen or flashing cement to seal a projection.

**PLASTIC CEMENT: (SEE FLASHING CEMENT).****PLY:**

A layer of felt in a built-up roof membrane system. A four-ply membrane system has four plies of felt.

**PONDING:**

A roof surface that is incompletely drained.

**POSITIVE DRAINAGE:**

The drainage condition in which consideration has been made 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.

**PRIMER:**

A thin liquid bitumen applied to a surface to improve the adhesion of subsequent applications of bitumen.

**RAKE:**

The slope edge of a roof at the first or last rafter.

**RE-COVERING:**

The process of covering an existing roofing system with a new roofing system.

**REGLET:**

A groove in a wall or other surface adjoining a roof surface for use in the attachment of counterflashing.

**REINFORCED MEMBRANE:**

A roofing or waterproofing membrane reinforced with felts, mats, fabrics or chopped fibers.

**RELATIVE HUMIDITY:**

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 a given temperature, the relative humidity (RH) is 50 percent.

**REPLACEMENT:**

The practice of removing an existing roof system and replacing it with a new roofing system.

**RE-ROOFING:**

The process of re-covering or replacing an existing roofing system. (see Re-covering and replacement).

**RIDGING:**

An upward, tenting displacement of a roof membrane frequently occurring over insulation joints, deck joints and base sheet edges.

**ROLL ROOFING:**

Smooth-surfaced or mineral-surfaced coated felts.

**ROOF ASSEMBLY:**

An assembly of interacting roof components (including the roof deck) designed to weatherproof and, normally, to insulate a building's top surface.

**SADDLE:**

A small structure that helps channel surface water to drains, frequently located in a valley, and often constructed like a small hip roof or like a pyramid with a diamond shape base. (see Cricket).

**SCUTTLE:**

A hatch that provides access to the roof from the interior of the building.

**SEAL:**

A narrow closure strip made of bituminous materials. To secure a roof from the entry of moisture.

**SEALANT:**

A mixture of polymers, fillers and pigments used to fill and seal joints where moderate movement is expected; it cures to a resilient solid.

**SELVAGE:**

An edge or edging that differs from the main part of (1) a fabric, or (2) granule-surfaced roll roofing material.

**SELVAGE JOINT:**

A lapped joint designed for mineral-surfaced cap sheets. The mineral surfacing is omitted over a small portion of the longitudinal edge of the sheet below in order to obtain better adhesion of the lapped cap sheet surface with the bituminous adhesive.

**SHINGLE:**

A small unit of prepared roofing material designed for installation with similar units in overlapping rows on inclines normally exceeding 25 percent.

**SHINGLE:**

To cover with shingles.

To apply any sheet material in overlapping rows like shingles.

**SHINGLING:**

The procedure of laying parallel felts so that one longitudinal edge of each felt overlaps and the other longitudinal edge underlaps an adjacent felt. (see Ply). Normally, felts are shingled on a slope so that the water flows over rather than against each lap:

The application of shingles to a sloped roof.

**SLIPPAGE:**

Relative lateral movement of adjacent components of a built-up membrane. It occurs mainly in roofing membranes on a slope, sometimes exposing the lower plies or even the base sheet to the weather.

**SMOOTH-SURFACED ROOF:**

A built up roof membrane surfaced with a layer of hot mopped asphalt, cold applied asphalt clay emulsion, cold applied asphalt cutback, or sometimes with an unmopped inorganic felt.

**SOFTENING POINT:**

The temperature at which bitumen becomes soft enough to flow, as determined by ASTM D 36-86.

**SPLIT:**

A membrane tear resulting from substrate or membrane stress.

**SPUDDING:**

The process of removing the roofing aggregate and most of the bituminous top coating by scraping and chipping.

**SQUARE:**

The term used to describe 100 square feet of roof area.

**STACK VENT:**

A vertical outlet in a built up roof system designed to relieve the pressure exerted by moisture vapor between the roof membrane and the vapor retarder or deck.

**STRIPPING OR STRIP-FLASHING:**

The technique of sealing a joint between metal and the built-up roof membrane with one or two plies of felt or fabric and hot-applied or cold-applied bitumen.

The technique of taping joints between insulation boards or deck panels.

**SUBSTRATE:**

The surface upon which the roofing or waterproofing membrane is applied (i.e., the structural deck or insulation).

**SUMP:**

An intentional depression around a drain.

**SUPERIMPOSED LOADS:**

Loads that are added to existing loads. For example, a large stack of insulation boards placed on top of a structural steel deck.

**TAPERED EDGE STRIP:**

A tapered insulation strip used to (1) elevate the roof at the perimeter and at curbs that extend through the roof: (2) provide a gradual transition from one layer of insulation to another.

**TEST CUT:**

A sample of the roof membrane that is cut from a roof membrane to (1) determine the weight of the average interplay bitumen moppings: (2) diagnose the condition of the existing membrane (e.g., to detect leaks or blisters).

**THERMAL CONDUCTANCE:**

A unit of heat flow that is used for specific thicknesses of material or for materials of combination construction, such as laminated insulation.

**THERMAL CONDUCTIVITY:**

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° F perpendicularly across the two surfaces of the material.

**THERMAL INSULATION:**

A material applied to reduce the flow of heat.

**THERMAL RESISTANCE:**

An index of a materials resistance to heat flow; it is the reciprocal of thermal conductivity or thermal conductance.

**THERMAL SHOCK:**

The stress producing phenomenon resulting from sudden temperature changes in a roof membrane when, for example, a rain shower follows brilliant sunshine.

**THROUGH WALL FLASHING:**

A water resistant membrane or material assembly extending through a wall and its cavities, positioned to direct water entering the top of the wall to the exterior.

**UNDERLAYMENT:**

Asphalt saturated felt used beneath roofing to provide additional protection for the deck.

**UNDERWRITERS LABORATORY & WARNOCK HERSEY:**

Organizations that test and classify consumer products such as roof assemblies to methods defined by objective forums like ASTM.



## **B.U.R., Modified, & Steep Slope Roofing Systems**

### **9. Glossary of Roofing Terms**

**VAPOR MIGRATION:**

The movement of water vapor from a region of high vapor pressure to a region of lower vapor pressure.

**VAPOR RETARDER:**

A material designed to restrict the passage of water vapor through a roof or wall.

**VENT:**

An opening designed to convey water vapor or other gas from inside a building or a building component to the atmosphere, thereby relieving vapor pressure.

**VERMICULITE:**

An aggregate used in lightweight insulating concrete, formed by the heating and consequent expansion of a micaceous mineral.

**WATERPROOFING:**

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