



Glossary of Terms

aggregate—(1) crushed stone, crushed slag, or water-worn gravel used for surfacing a built-up roof;

(2) any granular mineral material.

alligatoring—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 not extend through the surfacing bitumen. application rate— the quantity (mass, volume or thickness) of material applied per unit area.

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.

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

asphaltene— a high molecular weight hydrocarbon fraction precipitated from asphalt by a designated paraffinic naphtha solvent at a specified temperature and solvent-asphalt ratio.

NOTE—The asphaltene fraction should be identified by the temperature and solvent-asphalt ratio used.

asphalt felt— an asphalt-saturated felt.

asphalt, steam blown— an asphalt produced by blowing steam through molten asphalt to modify its properties.

base sheet— a saturated or coated felt placed as the first ply in a multi-ply built-up roofing membrane.

backnailing— the practice of blind-nailing roofing felts to a substrate in addition to hot-mopping to prevent slippage.

bold roof— See smooth-surfaced roof.

bitumen—(1) a class of amorphous, black or dark-colored, (solid, semi-solid, or viscous) cementitious substances, natural or manufactured, composed principally of high molecular weight hydrocarbons, soluble in carbon disulfide, and found in asphalts, tars, pitches, and asphaltites;

(2) a generic term used to denote any material composed principally of bitumen.

(3) in the roofing industry there are two basic bitumens: asphalt and coal-tar pitch. Before application they are either (1) heated to a liquid state, (2) dissolved in a solvent, or (3) emulsified.

bituminous, ad.— containing or treated with bitumen. Examples: 'bituminous concrete, bituminous felts and fabrics, bituminous pavement.

bituminous emulsion— (1) a suspension of minute globules of bituminous material in water or in an aqueous solution.

blisters— an enclosed pocket of air mixed with water vapor, trapped between impermeable layers of felt, etc.

blueberry— See strawberry.

bond— the adhesive and cohesive forces holding two roofing components in intimate contact.

brooming— embedding a ply by using a broom to smooth it out and ensure contact with the adhesive under the ply.

built-up roofing— a continuous, semiflexible membrane consisting of plies of saturated felts, coated felts, fabrics or mats assembled in place with alternate layers of bitumen, and surfaced with mineral aggregate, bituminous material, or a granule surfaced sheet (abbreviation, BUR).

cant strip— a beveled strip used under flashings 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 felt used as the top ply of a built-up roofing membrane.

cationic emulsion— an emulsion in which the emulsifying system establishes a predominance of positive charges on the discontinuous phase.

caulking— a composition of vehicle and pigment, used at ambient temperatures for filling joints, that remains plastic for an extended time after application.

coal tar— a dark brown to black cementitious material produced by the destructive distillation of coal.

coal-tar felt— a felt that has been saturated with refined coal tar. **coal-tar pitch**— a dark brown to black, solid cementitious material obtained as residue in the partial evaporation or distillation of coal tar.

coated sheet (or felt)—(1) an asphalt felt that has been coated on both sides with harder, more viscous asphalt;

(2) a glass fiber felt that has been simultaneously impregnated and coated with asphalt on both sides.

cold-process roofing— a continuous, semiflexible membrane consisting of plies of felts, mats, or fabrics laminated on a roof with alternate layers of 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 atmospheric pressure rises. (See also dew point)

conductance, thermal— the thermal transmission in unit time through unit area of a particular body or assembly having defined surfaces, when unit average temperature difference is established between the surfaces. $C = W/m^2 \cdot K$ ($C = \text{Btu}/\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}$).

conductivity, thermal— the thermal transmission, by conduction only, in unit time through unit area between two isothermal surfaces of an infinite slab of a homogeneous material of unit thickness, in a direction perpendicular to the surface, when unit temperature difference is established between the surfaces. $k = W/m \cdot K$ ($k = \text{Btu in.}/\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F}$).

coping— a covering on top of a wall exposed to the weather, usually sloped to carry off water.

counterflashing— formed metal or elastomeric sheeting secured on or into a wall, curb, pipe, roof-top unit, or other surface, to cover and protect the upper edge of a base flashing and its associated fasteners.

coverage— the surface area to be continuously covered by a specific quantity of a particular material.

cutback— solvent-thinned bitumen used in cold-process roofing adhesives, flashing cements, and roof coatings.

cutoff— a detail designed to prevent lateral water movement into the insulation where the membrane terminates at the end of a day's 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, or zero slope (see also **slope**).

dead level asphalt— a roofing asphalt conforming to the requirements of Specification D 312, Type I.

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

delamination— separation of the plies in a membrane or separation of insulation layers after lamination.

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

direction change— a change in the orientation of the principal dimension or of the support of adjoining units of the roofing system.

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 openings at a roof perimeter to relieve water vapor pressure in the insulation.

elastomer— a macromolecular material that returns rapidly to its approximate initial dimensions and shape after subsequent release of that stress.

embedment—(1) the process of pressing a felt, aggregate, fabric, mat, or panel uniformly and completely into hot bitumen or adhesive to ensure intimate contact at all points;

(2) the process of pressing granules into coating in the manufacture of factory-prepared roofing, such as shingles.

envelope— a continuous edge seal formed by extending one ply of felt beyond the edge of the assembly. After other plies or insulation are in place, the extended ply is turned back and adhered.

equilibrium moisture content—(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.

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 transverse dimension of a roofing element not overlapped by an adjacent element in any roofing system. The exposure of any ply in a membrane may be computed by dividing the felt width minus 51 mm (2 in.), by the number of shingled plies; thus, the exposure of a 914-mm (36-in.) wide felt in a shingled, four-ply membrane should be 216 mm (8½ in.);

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

extra-steep asphalt— See super-steep asphalt.

fabric— a woven cloth of organic or inorganic filaments, threads, or yarns.

factory square— 10 m² (108 ft²).

fallback— a reduction in bitumen softening point, sometimes caused by refluxing or overheating in a relatively closed container. (See also softening point drift).

felt— a flexible sheet manufactured by the interlocking of fibers through a combination of mechanical work, moisture, and heat, without spinning, weaving, or knitting. Roofing felts are manufactured from vegetable fibers (organic felts), asbestos fibers (asbestos felts), or glass fibers (glass-fiber felts).

felt mill ream— the mass in pounds of 480 ft² of dry, unsaturated felt, also termed “point weight”.

fine mineral surfacing— water-insoluble inorganic material, more than 50% of which passes the 500- μ m (No. 35) sieve, used on the surface of roofing.

fishmouth— (1) a half-cylindrical or half-conical opening formed by an edge wrinkle or failure to embed a roofing felt;

(2) 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 edges of the membrane. Cap or counterflashing shields the upper edges of the base flashing.

flashing cement— a trowelable mixture of cutback bitumen and mineral stabilizers including asbestos or other inorganic fibers.

flat asphalt— roofing asphalt conforming to the requirements of Specification D 312, Type II.

flood coat— the top layer of bitumen used to hold the aggregate on an aggregate-surfaced, built-up roofing membrane.

fluid-applied elastomer— 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.

“free carbon” in tars— the hydrocarbon fraction that is precipitated from a tar by dilution with carbon disulfide.

glass felt— glass fibers bonded into a sheet with resin and suitable for impregnation in the manufacture of bituminous waterproofing, roofing membranes, and shingles.

glass mat— a thin mat of glass fibers with or without a binder.

glaze coat—(1) the top layer of asphalt in a smooth-surfaced built-up roof assembly;

(2) a thin protective coating of bitumen applied to the lower plies or top ply of a built-up membrane, when application of additional felts, or the flood coat and aggregate surfacing are delayed.

granule— See mineral granules.

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 prevent loose aggregate from washing off the roof and to provide a continuous finished edge for the roofing.

headlap— the minimum distance, measured at 90 deg to the along the face of a shingle or felt as applied to a roof, from the upper edge of the shingle or felt, to the nearest exposed surface.

holiday— an area where a liquid-applied material is missing.

“hot stuff” or “hot”— a roofer’s term for hot bitumen.

hygroscopic— attracting, absorbing, and retaining atmospheric moisture.

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

inorganic, *adj.*—being or composed of matter other than hydrocarbons and their derivatives, or matter that is not of plant or animal origin.

insulation— See thermal insulation.

membrane— a flexible or semiflexible roof covering or waterproofing whose primary function is the exclusion of water.

mesh— the square opening of a sieve.

metal flashing— See flashing; frequently used as through-wall, cap, or counter-flashing.

mineral fiber felt— a felt with rock wool as the principal component.

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 admixture with solid or semisolid bituminous materials.

mineral-surfaced roofing— built-up roofing 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.

mole run— a meandering ridge in a membrane not associated with insulation or deck joints.

mop-and-flop— a 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, and are then turned over and adhered to the substrate.

mopping— the application of hot bitumen with a mop or mechanical applicator to the substrate or to the plies of a built-up roof. There are four types of mopping: (1) solid— a continuous coating; (2) spot— bitumen is applied in roughly circular areas, generally about 460 mm (18 in.) in diameter, leaving a grid of unmopped, perpendicular areas; (3) strip— bitumen is applied in parallel bands, generally 200 mm (8 in.) wide and 300 mm (12 in.) apart; (4) sprinkle— bitumen is shaken onto the substrate from a broom or mop in a random pattern.

mud cracking— surface cracking resembling a dried mud flat.

nailing—(1) exposed-nailing of roofing wherein nail heads are bare to the weather;

(2) concealed-nailing of roofing wherein nail heads are concealed from the weather. (See also blind nailing).

neoprene— a synthetic rubber (polychloroprene) used in liquid- or sheet-applied elastomeric roofing membranes or flashing.

nineteen-inch selvage— a prepared roofing sheet with a 432 mm (17 in.) granule-surfaced exposure and a 483-mm (19 in.) selvage.

ninety-pound— a prepared roll roofing with a granule-surfaced exposure that has a mass of approximately 4400 g/m² (90 lb/108 ft²).

one-on-one— the application of a single ply of roofing over the substrate, followed by the application of a second single ply over the first (phased application).

organic, *adj.*—being or composed of hydrocarbons or their derivatives, or matter of plant or animal origin.

penetration— the consistency of a bituminous material expressed as the distance in tenths of a millimetre (0.1 mm) that a standard needle penetrates vertically a sample of material under specified conditions of loading, time, and temperature. A cone is sometimes used for special purposes instead of a needle.

perlite— an aggregate used in lightweight insulating concrete and in preformed perlite insulating board; formed by heating and expanding siliceous volcanic glass.

permeance— the rate of water vapor transmission per unit area at a steady state through a membrane or assembly, expressed in ng/Pa·s·m² (grain/ft²·h·in. Hg).

phased application—the installation of a roofing or waterproofing system during two or more separate time intervals; a roofing system not installed in a continuous operation.

petroleum pitch—a dark brown to black, predominantly aromatic, solid cementitious material obtained by the processing of petroleum, petroleum fractions, or petroleum residuals.

picture framing—a rectangular pattern of ridges in a membrane over insulation or deck joints.

pinhole—a tiny hole in a film, foil, or laminate comparable in size to one made by a pin.

pitch—See incline; coal-tar pitch; or petroleum pitch.

pitch pocket—a flanged, open-bottomed metal container placed around a column or other roof-penetration, and filled with hot bitumen or flashing cement to seal the joint.

plastic cement—See flashing cement.

ply—a layer of felt in a built-up roofing membrane; a four-ply membrane has at least four plies of felt at any vertical cross section cut through the membrane.

plying cement—any bituminous material used for adhering layers of felts, fabrics, or mats to structural surfaces and to each other.

pond—a surface which is incompletely drained.

point weight—See felt mill ream.

primer—a thin liquid bitumen applied to a surface to improve the adhesion of heavier applications of bitumen and to absorb dust.

rake—the sloped edge of a roof at the first or last rafter.

raspberry—See strawberry

reentrant corner—an inside corner of a surface, producing stress concentrations in the roofing or waterproofing membrane.

reglet—a groove in a wall or other surface adjoining a roof surface for 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 mass per unit volume (or partial pressure) of water vapor in an air-vapor mixture to the saturated mass per unit volume (or partial pressure) of the water vapor at the same temperature, expressed as a percentage.

resistance, thermal—the average temperature difference between two defined surfaces of a particular body or assembly when unit thermal transmission in unit time through unit area is established between the surfaces. $R = K \cdot m^2 / W$ ($R = ^\circ F \cdot h \cdot 8ft^2 / Btu$).

riding—an upward, tenting displacement of a membrane, frequently over an insulation joint.

roll roofing—coated felts, either smooth or mineral-surfaced.

roof cement—See flashing cement.

roofing system—an assembly of interacting components designed to weatherproof, and normally to insulate, a building's top surface.

rubber—a material that is capable of recovering from large deformations quickly and forcibly, and can be, or already is, modified to a state in which it is essentially insoluble (but can swell) in boiling solvent such as benzene, methyl ethyl ketone, and ethanol-toluene azeotrope.

selvage—an edge or edging which differs from the main part of:
(1) a fabric; or (2) granule-surfaced roll roofing.

shark-fin—an upward-curved felt sidelap or endlap.

shingle—(1) a small unit of prepared roofing designed for installation with similar units in overlapping rows on inclines normally exceeding 25%;

(2) to cover with shingles; and

(3) to apply any sheet material in overlapping rows like shingles.

shingling—(1) 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 also ply). Normally, felts are shingled on a slope so that the water flows over rather than against each lap;

(2) the application of shingles to a sloped roof.

sieve—an apparatus with square apertures for separating sizes of material.

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.

slope—the tangent of the angle between the roof surface and the horizontal plane, expressed as a percentage, or in inches of rise per foot of horizontal distance. (See also incline).

smooth-surfaced roof—a built-up roof without mineral aggregate surfacing.

softening point—the temperature at which a bitumen becomes soft enough to flow as determined by an arbitrary, closely defined method.

softening point drift—a change in the softening point during storage or application. (see also fallback).

solid mopping—See mopping.

split—a membrane tear resulting from tensile stress.

split sheet—See nineteen-inch selvage.

spot mopping—See mopping.

sprinkle mopping—See mopping.

square—a roof area of 9.29 m² (100 ft²), or enough material to cover 9.29 m² of deck.

stack vent—a vertical outlet in a built-up roofing system to relieve the pressure exerted by water vapor between the roofing membrane and the vapor retarder or deck.

steep asphalt—a roofing asphalt conforming to the requirements of Specification D 312, Type III.

strawberry—a small bubble or blister in the flood coating of a gravel-surfaced membrane.

strip mopping—See mopping.

stripping—strip flashing:

(1) the technique of sealing a joint between metal and built-up membrane with one or two plies of felt or fabric and hot- or cold-applied bitumen;

(2) the technique of taping joints between insulation boards or deck panels.

substrate—the surface upon which the roofing or waterproofing membrane is placed (structural deck or insulation).

super-steep asphalt—a roofing asphalt conforming to the requirements of Specification D 312, Type IV.

susceptibility—when not otherwise qualified, the degree of change in viscosity with temperature.

system—See roofing system.

tapered edge strip—a tapered insulation strip used to elevate the roofing at the perimeter and at penetrations of the roof.

tar—a brown or black bituminous material, liquid or semisolid 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.

thermal insulation—a material applied to reduce the flow of heat.

thermal shock—the stress-producing phenomenon resulting from sudden temperature drops in a roof membrane when, for example, a rain shower follows brilliant sunshine.

through-wall flashing—a water-resistant membrane or material assembly extending totally through a wall and its cavities, positioned to direct any water within the wall to the exterior.

vapor migration—the movement of water vapor from a region of high vapor pressure to a region of lower vapor pressure.

vent—an opening designed to convey 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 heating and expanding a micaceous mineral.

waterproofing—treatment of a surface or structure to prevent the passage of water under hydrostatic pressure.