

Corporate Profile

At IKO, we believe the success and longevity of our company is attributed to four key ingredients: The talent and commitment of our people, top quality products, continuous innovation and state-of-the-art manufacturing facilities.

IKO's journey to excellence, fuelled by the spirit of innovation and quality, began with our first plant in Calgary, Alberta in 1951. In 1954, the company made its first asphalt shingles, and soon enough, IKO products developed a strong and loyal following in the region. With the success in Western Canada, a shingle and built-up roofing felt manufacturing plant was commissioned in Brampton, Ontario in 1959. This was followed by a plant in Ham, Belgium in 1972, bringing the products to the European market. Next was a plant in Hawkesbury, Ontario in 1976 to meet the growing demands in eastern Canada and New England market.

In 1979 IKO acquired its first facility in the United States in Wilmington, Delaware and followed it by the acquisition of manufacturing facilities in Franklin, Ohio and Chicago, Illinois, establishing itself into the American market.

IKO continued to enhance its capabilities in Canada through the purchase of roofing plants in both Toronto, Ontario and Winnipeg, Manitoba (now closed) in 1983. In 1988 IKO leveraged the experience from its Belgian European operation, and built a state-of-the-art modified bitumen membrane plant in Brampton, Ontario.

In 1996 IKO began quarrying, crushing, and colouring its own roofing granules at Madoc, Ontario. Further additions have been a facility located in Sumas, Washington, which began production of both residential and commercial products in 1999. A second roofing granule facility was also built in Ashcroft B.C. in 2001 to efficiently service the granule needs of IKO's western operations. A brand-new shingle manufacturing plant was added in Kankakee, Illinois in 2006, Sylacauga, Alabama in 2014 and most recently, in Hillsboro, Texas in 2017.

To complement the built-up and modified membrane products, and further establish its commitment to commercial roofing, IKO constructed two polyisocyanurate insulation plants – one in Brampton, Ontario (1999) and one in High River, Alberta (2005). As well, to ensure quality glass mat reinforcements, which are used in all IKO shingles and a wide range of roll products, IKO has partnered with key industry associates to build a chopped glass fiber facility (Clarksville, Tennessee), and a plant that uses those fibers to make strong and resilient fiberglass reinforcement (Danville, Illinois).

In addition to expanding our production facilities, IKO has expanded its line of roofing products to include fiberglass-based shingles, roofing felts, underlayments, vapour barriers, roof board separation panels, polyisocyanurate insulation, and APP and SBS modified bitumen roofing systems for commercial and industrial applications. IKO also offers a complete line of building envelope solutions, with key products such as the AquaBarrier Air & Vapour line of products, and Ener-Air and Enerfoil wall insulations.

IKO has been successful in building and acquiring the facilities needed to manufacture and supply almost all of its raw material needs, including the raw asphalt supply, fiberglass reinforcements, and surfacing granules. This manufacturing 'vertical integration' is mirrored in our approach to supply all roof assembly components 'from the deck up' – another form of vertical integration.

With over 30 production facilities throughout North America and Europe, IKO has become the world leader in the manufacture and supply of asphaltic and bituminous waterproofing products. At IKO, we have continued to do what we do best.

Commercial Roofing Products

Modiflex, Torchflex, and Armourplast cap sheets are the top layer in the roofing system. Modiflex is a hot asphalt-applied, cold adhesive-applied, or self-adhered SBS membrane, Torchflex is a heat-applied SBS membrane, and Armourplast is a heat-applied APP membrane. All IKO roofing membranes are engineered to meet, or exceed, industry standards for high performance roofing membranes.

IKO integrates the time-proven waterproofing characteristics of premium grades of asphalt with state-of-the-art polymer technology. The result is a modified bitumen formulation with vastly superior physical properties and performance characteristics. These modified bitumen membranes exhibit enhanced low temperature flexibility, elongation, and moisture resistance. Each membrane is made with either a reinforced polyester, fiberglass, or a polyester and fiberglass composite reinforcement to add strength and additional performance characteristics. IKO manufactures Modiflex and Torchflex products with granule surfacing for aesthetic appearance and ultraviolet protection. Responding to current needs for highly reflective cap sheets and membranes with superior fire resistance, IKO has developed its ArmourCool and PrevEnt line of products, respectively. Armourplast is produced in both granulated and smooth varieties, ready for the application of a number of coating or surfacing materials.

The results of this combination of history and technology are self-evident; modified bitumen roofing membranes with superior resistance to aging and weathering. Membranes that are strong, yet flexible enough to accommodate thermal and mechanical stresses. IKO modified bitumen roofing membranes have been engineered and manufactured to address a wide variety of design and application criteria that are outlined in the specifications found in this manual.

Corporate Policies

The specifications in this manual are based on IKO's more than 60 years of experience in the roofing industry. These specifications are provided as general guidelines to aid architects, engineers, roofing professionals, and building owners in the design and application of IKO roofing systems.

Each Part of this manual shall be used in conjunction with any/all relevant other Parts, to the extent that they are applicable to project design intent and application. Sections/ paragraphs/sentences shall not be considered isolated, stand-alone statements, and should be considered in the context of all other requirements and typical good roofing practices. Where conflicts exist in this Manual, the more stringent requirement shall apply.

IKO manufactures and sells roofing materials. IKO does not practice in architecture nor engineering. Therefore, the design responsibility remains with the architect, engineer, roofing professional or building owner. The drawings and details herein are provided for guidance purposes only. These guidelines should not be considered as being all-inclusive, nor should they be construed as a substitute for good roofing practices.

Roofing systems are typically engineered to include a vapour barrier, insulation, overlay board, roofing membrane, and surfacing. The systems illustrated in this manual are based on various roof deck types and thicknesses, desired insulations, desired number of plies, and desired finished appearance. One system is not necessarily superior to another, just different.

IKO, as a manufacturer of roofing materials, is not involved in either the design or construction of buildings.

Under no circumstances shall IKO accept responsibility for the performance of its products when damage to the roofing system is caused by deficiencies in the underlying structure. IKO does not manufacture nor install roof decks and is not responsible for their performance.

Under no circumstances shall IKO have any liability for expenses arising out of, or associated with the pre-existing presence of asbestos-containing, or other allegedly hazardous materials. Nor shall IKO have any liability for material upon which the new IKO roofing system is being applied.

Since the roofing contractor is the only party with control over the quality of workmanship during installation of the roofing system, the roofing contractor shall assume sole responsibility for the quality of application of the roof system, in conjunction with any third-party roof inspectors, where inspections are performed.

IKO offers a range of Limited Warranties, which are available only when the IKO roofing system is installed in accordance with the specifications and details outlined in this manual. In addition, for certain limited warranties, the roofing system must be installed by an IKO IAAP Registered Contractor. IKO reserves the right to not issue a Limited Warranty on projects where job site conditions, or application procedures, do not meet published specifications.

IKO will not write letters regarding information that is published in this specification manual or other IKO product literature. IKO will not give verbal approval regarding plans, specifications, details, applications, performance, or accept any responsibility for any roof system as a substitute for its limited warranty, notwithstanding any written approval that IKO may grant.

Routine maintenance and care of the installed roofing system are the responsibility of the building owner. A roof should be inspected a minimum of twice per year; typically spring and fall. In addition, a roof should be inspected after any severe weather event including, but not limited to, hail storms and any type of wind event. IKO is not responsible for consequential or indirect damages, including loss of profits, in the event of roof system failure.

As part of its ongoing effort to improve the performance of its products and systems, IKO reserves the right to change or modify, without prior notice, any of the products, application specifications, requirements, or policies contained in this manual. This manual supersedes all previous manuals. In addition, IKO will periodically publish Technical Bulletins to update technical specifications. Technical Bulletins, when published, supersede the technical specifications contained herein. Consult IKO's Commercial Roofing website www.iko.com/comm for the most current version of the Technical Specification Manual.

Glossary of Terms Used in this Manual

(Glossary courtesy of CRCA. NOTE: IKO's terminology may differ from those expressed by CRCA. IKO's terminology as stated in this manual shall take precedence over those expressed by CRCA.)

A

Adhesive: A cementing substance that produces a steady and firm attachment or adhesion between two surfaces. Adhesion is measured in shear and peel modes.

Aggregate:

1. Crushed stone, crushed slag, or water-worn or natural gravel used as protective surfacing or ballast in a roof system.
2. Any granular mineral material.
3. Roofing gravel in BUR.

Air barrier: An assembly or building element that provides resistance to through-flow of air from inside to outside and vice-versa.

Air leakage: The movement of air through spaces between constituent parts of a roof system or other enclosure element as a result of air-pressure differences between one and the other side.

Air space: A cavity or unfilled space between two constituent parts in a roof system or other enclosure element of a building.

Alligatoring: Hardening and shrinking of exposed bitumen coatings due to oxidation, that produces small islands of bitumen between deep cracks and gives the appearance of alligator hide.

Application: The act of putting on or building up a roofing system.

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

Application temperature: The temperature of the hot material such as asphalt when applied to the roof. See also equiviscous temperature (EVT).

Asphalt: Although there are natural occurring asphalts, those used in roofing are from the heavy end of petroleum distillation. They are processed to provide a wide range of viscosities and softening points needed for their end use, e.g. shingles, roll roofing, BUR for different slopes, etc. Often incorrectly called tar, as in tar and gravel roofing.

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.

Asphalt felt: An asphalt-saturated organic felt with or without perforations.

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

Atactic: A chain of molecules in which the position of the side methyl groups is more or less random as in atactic polypropylene, APP.

B

Back nailing: The practice of blind-nailing roofing felts to a substrate in addition to hot-mopping to prevent slippage.

Ballast: Crushed rock, gravel, or pavers placed on loosely laid roofing membrane systems or roof insulation boards to hold them down from wind uplift, as in the case of an inverted roof (protected membrane roof assembly, PMR).

Base flashing: The extension of the roofing membrane over the cant and up the vertical surface.

Base sheet: A heavy sheet of saturated, coated or impregnated felt placed as the first ply in built-up or modified bitumen roofing membrane systems. Also called base ply.

Bird bath: Random, inconsequential amounts of residual water on a roof membrane.

Bitumen: A generic term applied to mixtures of predominantly hydrocarbons in viscous or solid form, derived from coal or petroleum. The roofing industry uses it to describe either coal tar pitch or asphalt.

Bituminous emulsion:

1. A suspension of minute globules of bituminous material in water or in an aqueous solution.
2. A suspension of minute globules of water or of an aqueous solution in a liquid bituminous material (invert emulsion).

Bituminous grout: A mixture of bituminous material and fine sand that will flow into place without mechanical manipulation when heated.

Blister: An enclosed raised spot or area containing gas or liquid that shows on the surface of prepared and built-up roofing. Small blisters confined to the surface are called weather blisters, rash blisters, pimpling or blueberries. The larger, more serious and usually more evident blisters are structural blisters. These blisters are spongy to the touch and may occur between any of the layers of roofing felt or between membrane and deck or insulation.

Block copolymer: An essentially linear copolymer in which there are repeated sequences of polymeric segments of different chemical structure, e.g. styrene - butadiene - styrene (SBS), which is commonly used as a modifier in bitumens.

Blocking:

1. Wood built into a roofing system above the deck and below the membrane and flashing to:
 - a. stiffen the deck around the opening;
 - b. act as a stop for insulation; and
 - c. serve as a nailer for attachment of the membrane or flashing.
2. Wood cross-members installed between rafters or joists to provide support at cross-joints between deck panels.
3. Cohesion or adhesion between similar or dissimilar materials in roll or sheet form that may interfere with the satisfactory and efficient use of the material.

Blowing agent: A compounding ingredient used to produce gas by chemical or thermal action, or both, in the manufacture of hollow or cellular products.

Board/block insulation: Rigid insulation preformed into rectangular units having a degree of suppleness. The boards may be of homogeneous material or of composite construction.

Bond:

1. To hold together two roofing components by means of an adhesive.
2. The adhesive strength that prevents delamination of two roofing components.
3. A guarantee relating to roofing performance.

Broadcast: Uniformly cast or distributed granular or aggregate surfacing material.

Brooming: Embedding a ply by using a broom to smooth it out and ensure contact and adhesion with the underlying substrate.

Buckle: Large elongated bulge or fold in a roofing membrane as a result of separation from the substrate accompanied by expansion or stretching.

Built-up roofing (BUR): A continuous, semi-flexible 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, or coating for protection from solar radiation. May include modified bitumen membrane systems of more than one ply.

Butt joint: A joint formed by adjacent, separate sections of material, such as where two neighbouring pieces of insulation abut.

Butyl rubber: A synthetic rubber based on isobutylene and a minor amount of isoprene.

C

Cant strip: A strip of material of triangular section laced at the intersection of a roof deck with a higher wall or other vertical surface. The roofing membrane and flashing are eased through the change in direction from essentially horizontal to vertical along its forty-five (45°) degree sloping surface.

Cap flashing: Any material, usually sheet metal, covering the top of a wall or parapet, designed to shed water.

Cap sheet:

1. The top ply of a built-up roofing membrane acting as the finished surface of a roof.
2. Any mineral-surfaced or other coated felt or sheet designed to provide waterproofing and weatherability.
3. The finishing layer in a modified bitumen roof membrane system.

Caulking: Any of a wide range of bituminous, rubber, plastic or other materials suitable for filling seams or cracks to make them tight against water leakage and remain plastic for an extended time after application. See sealant.

Caulking cement: Any of a wide range of weather-resistant plastic cements suitable for caulking in any roofing application or roofing maintenance. See also plastic cement.

Cement: A substance used to make objects adhere to each other. In the roofing industry loosely applied to mean caulking and mastic.

Centipoise: A unit of measure of absolute viscosity. (The viscosity of water is one centipoise. The lower the number, the less viscous the material.)

Centistoke: A unit of viscosity; the ratio of a liquid's absolute viscosity to the density of that liquid.

Chalking: A powdery residue on the surface of a material resulting from degradation or migration of an ingredient, or both.

Coal tar pitch: A bituminous material from the heavy end of the distillation of crude coal tar produced from the coking of coal.

Coated fabric:

1. Fabric that has been impregnated and/or coated with a plastic material in the form of a solution, dispersion, hot melt, or powder.
2. Also applies to materials resulting from the application of a preformed film to a fabric by means of calendaring.

Coated base sheet:

1. An asphalt felt coated on one or both sides with harder, more viscous asphalt and surfaced with mineral matter of various sizes.
2. A glass fiber felt that has been simultaneously impregnated and coated with asphalt on both sides. These products come under the group of roll roofing.

Coating: A thin layer of a substance used to cover other materials, to provide an aesthetic or protective function.

Cold flow: See creep.

Cold-process roofing: A continuous, semi-flexible 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.

Cold roof: A cold roof configuration is the traditional form of pitched roof build-up. The insulation layer is placed horizontally, directly above the ceiling of the upper story of the habitable section of the building, usually positioned between the joists in the loft space

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

Compact roof: Also called the conventional roof in which the membrane is placed on top of the insulation and in which all components are adhered to each other in layers.

Compound: An intimate admixture of a polymer with all the ingredients necessary for the properties required of the final product.

Compression: The decrease in length produced in a test specimen during a creep test. This term commonly applies to insulation boards or blocks.

Condense: To make denser or more compact, as when a material (e.g. water vapour) changes from its gas phase to its liquid phase.

Condensation: The conversion of water vapour to other gas or liquid phases as the temperature drops; the act or process of condensing.

Control flow drain: A type of drain or a system of drains that regulates the flow of water so that rain water can be drained away at a uniform rate no matter how heavy the rainfall.

Coping: A covering on top of a wall exposed to the weather, usually sloped to shed water.

Copolymer: A mixed polymer, the product of polymerization of two or more substances at the same time.

Cornice: Projection at the top of a wall. Term applied to construction under the eaves where the roof and side walls meet. The top course, or courses of a wall when treated as a projecting crowning member.

Counter flashing: The material, usually sheet metal, protecting the top edge and covering or partially covering the vertical membrane flashings, which may extend onto the roof.

Coverage or Covering:

1. The area to be covered per unit volume of coating to obtain specified dry thickness.
2. Area covered by a unit of roofing such as a bundle of shingles or a roll of roofing.

Cover board: Thin, normally homogeneous materials, formed into boards and used over roof insulation to provide protection to the insulation during installation and service and to enhance the performance of the roofing assembly.

Crack: A break in a roofing membrane as a result of flexing, often at a ridge or wrinkle.

Crazing: A series of hairline cracks in the surface of weathered materials, indicating deterioration.

Creep: The dimensional change with time of a material under load, following the initial instantaneous elastic deformation. Creep at room temperature is sometimes called cold flow.

Cricket: A small false roof or the elevation of a part of the roof that helps to channel surface water from behind an obstacle, such as a chimney, to drains. Frequently located in a valley, a cricket is often constructed like a small hip roof, or like a pyramid with a diamond-shaped base. Also called saddle.

Crushed stone: The product resulting from the artificial crushing of rocks, boulders, or large cobblestones, substantially all faces of which have resulted from the crushing operation.

Curb: A low wall of wood or masonry built above the level of the roof, surrounding a roof opening such as is required for installation of fans and other equipment, and at the edges of movement joints in a roof deck.

Curing: To change the properties of a polymeric system into a more stable, usable condition by the use of heat, radiation, or reaction with chemical additives. See also cross linking and vulcanization.

Curling: An upward curled felt at side laps or end laps. Also called flagged edge or shark fin.

Cutback: A solution of bitumen in a volatile solvent used as a primer, cold-application cementing agent or roof coating. Filled cutbacks may contain mineral particles and inorganic fibers.

Cutoff: A material seal designed to prevent lateral water movement into the insulation where the membrane terminates at the end of a day's work, or to isolate sections of the roofing system. It is usually removed before the continuation of the work.

D

Dampproofing: The treatment of a building material or component surface with a bituminous or other coating to provide some measure of resistance to the passage of moisture into or through the material or component.

Dead flat roof: A roof with no intentional slope.

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

Degradation: A deleterious change in the chemical structure, physical properties, or appearance of an organic material.

Delamination:

1. Separation of components within a system as a result of cohesive or adhesive failure.
2. Separation of the laminated layers of a component or system.

Dew point: The temperature at which a sample of humid air becomes saturated and the water vapour begins to condense to liquid water.

Diffusion: The material permeation of two or more substances due to the kinetic activity of their molecules, so that a uniform mixture or solution results. Diffusion occurs with all forms of matter; it is more rapid for gases, somewhat slower for liquids and solids in solution.

Dipper: A ladle for pouring bitumen.

Direction change: A change in the orientation of the principal dimension or of the support of adjoining units of the roofing system.

Double pour: The application of the top covering of bitumen and gravel surfacing of a built-up roofing in two separate operations. A quantity of gravel is spread over a first-pour coat of bitumen, loose gravel is removed, and additional gravel is spread into a second-pour coat of bitumen.

Down spout: See conductor.

Drain: An outlet to allow water to flow from a roof surface into a drain pipe and away from the building through a drainage system.

Drip edge: The formed edge on metal flashing used at the eaves or other roof details to encourage water to drip away from vertical surfaces of the building detail.

Drippage: Bituminous material that drips through holes or over the edge of a roof or at roof openings.

Dry felt: Organic-fiber roofing felt before any treatment with bitumen. Used as an underlayment for built-up roofing over wood-board decks to prevent bitumen drippage or to provide a slip sheet.

Dry laid: Any roofing felt laid without bitumen or other adhesive.

Dry laid non-woven: Carding of synthetic or glass fibers in a unidirectional pattern and air laying them to form a batt of fibers or web in a random pattern. The web is moved on a continuous belt to be bonded by chemical, mechanical or thermal means, resulting in fiber mat used for reinforcing roofing sheets.

Dry sheathing: A felt or paper used in certain applications to prevent bitumen drippage or to act as a separation sheet between components.

Dry sheet: An unsaturated felt or paper used in certain applications to prevent bitumen drippage but not to be confused with a saturated felt “laid dry” or “unmopped”.

Duck boards: Slatted wood-board panels for placement on a roof to provide a walkway or a surface for light traffic.

E

Edge lap: The overlap of the edge of a ply over the previous ply. Also called side lap.

Embedment or Embed:

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, roll roofing.

Emulsion: An intimate mixture of bitumen and water, with uniform dispersion of the bitumen or water globules, usually stabilized by an emulsifying agent or system.

End lap: The amount of overlap at the start of a roll of felt over the end of the previously laid roll.

Envelope:

1. The practice of carrying the air/vapour barrier or other waterproofing sheet up and onto the top surface of the insulation in a compact roofing system.
2. 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 tip of the membrane. The envelope prevents bitumen seepage from the edge of the membrane.

Equiviscous temperature (EVT): The temperature at which bitumens will have the correct viscosity for spreading at the required rate in roofing application.

Equiviscous temperature (EVT) application range: The recommended bitumen application temperature range. The range is approximately 14° C (25°F) above or below the EVT, thus giving a range of approximately 28°C (50°F). The EVT range temperature is measured in the mop cart of mechanical spreader just prior to application of the bitumen to the substrate.

Equiviscous temperature (EVT) for asphalt: The recommended EVT for roofing asphalt as follows:

- a. Mop application: The temperature at which the asphalt's apparent viscosity is 0.125 Pa s (125 centipoise).
- b. Mechanical spreader application: The temperature at which the asphalt's apparent viscosity is 0.075 Pa s.

Expanded polystyrene (EPS): Insulation composed principally of polystyrene resin processed to form a rigid foam having a predominantly closed-cell structure. Boards or blocks are formed during expansion. See also insulation.

Expansion joint: A structural separation between two building elements that allows free movement due to expansion, contraction or deflection between the elements without damage to the roofing or waterproofing system. The joint is provided with a flexible watertight connection detail.

Exposed nailing: Application where the nail heads are exposed to the weather.

Extruded polystyrene: Insulation board produced by a continuous extrusion process as the resin foams. This forms a tight and complete skin on each side of the board.

F

Fabric:

1. A woven cloth of organic or inorganic filaments treated with bitumen and, being stronger than felt, used in special flashing applications.
2. Geotextile membranes used as a protective or separating layer in roofing and waterproofing systems.

Fabric-reinforcement: A fabric or scrim used to add structural strength to a polymeric sheet of two or more plies. The sheeting is referred to as supported.

Fallback: A reduction of a bitumen's softening point related to contamination, incompatibility or overheating. Also referred to as softening point drift.

Fascia: Any cover board at the edge or eaves of a flat or sloping overhanging roof.

Feather: To reduce the edge of a material to a very small dimension like a feather edge.

Felt: A general term used to describe sheet roofing material consisting of a mat of organic or inorganic fibers untreated, saturated, impregnated, or saturated and coated with bitumen and supplied in roll form.

Felt layer: A piece of mobile mechanized roofing equipment for spreading bitumen and laying felt in a single continuous operation.

Fiberboard: Insulation composed principally of cellulose fibers usually derived from paper, paperboard stock, or wood, with or without binders. See also insulation.

Fill:

1. Aggregate and cement mixtures placed on a roof deck in varying thickness to level out depressions and irregularities, or to form slopes to roof drains.
2. As used in textile technology refers to the threads or yarns in a fabric running at right angles to the warp. Also called filler threads.

Filler:

1. Finely-divided mineral matter used as an extender to improve the properties of asphalt coatings for shingle and built-up roofing felts, and bituminous plastic cement or mastic.
2. Different types of fillers are used in some polymeric materials to improve some mechanical properties and also to reduce the cost of the finished product. See also stabilizer.

Fine mineral surfacing: Water-insoluble inorganic material, more than 50% of which passes the 500 Fm (No. 35) sieve, used on the surface of roofing.

Finger blisters: Finger-shaped blisters or wrinkles in the plies of a built-up roofing or waterproofing membrane.

Fire resistance: The property of a material or assembly to withstand fire or give protection from it.

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

Fire retardant: A chemical used to impart flame resistance.

Fishmouth:

1. A half-cylindrical or half-conical opening formed by an edge wrinkle or adhesion failure. May be isolated occurrences or in a more or less regular pattern.
2. In shingles, a half-conical opening formed at a cut edge.

Flame spread: The propagation of a flame away from its source of ignition.

Flammability: Those characteristics of a material that pertain to its relative ease of ignition and ability to sustain combustion.

Flashing: A continuation of the roofing proper to cover any element of the roof structure departing from the roof deck incline.

- a. Base flashing: The extension of the roofing membrane over the cant and up the vertical surface.
- b. Cap flashing: The covering, usually sheet metal, covering the base flashing, or capping a higher wall such as a parapet.

- c. Counter flashing: See Cap flashing but sometimes used for the upper portion of the sheet metal flashing when the metal flashing is divided into two pieces.
- d. Gravel stop: A formed strip of material, usually metal, nailed around the edges of a graveled roof to prevent the gravel from rolling or washing off and to add a finished appearance to the roof. It may be combined with the fascia flashing.
- e. Step flashing: Individual pieces of flashing material used to flash the sides of chimneys and dormers and similar projections on steeper sloping roofs usually shingled. The individual pieces are stepped up the slope.
- f. Thru-wall flashing: Flashing extending completely through a masonry wall to prevent water infiltrating behind lower elements of the flashing system and of the roofing system.

Flashing cement: A trowelable mixture of asphalt, volatile solvent and mineral fillers used as a cold coating in the application of flashing, for sealing around roofing details and for cold patching. Also called plastic cement.

Flash point: The lowest temperature at which vapours above a volatile combustible substance ignite in air when exposed to a flame.

Flood coat: See pour coat.

Flood test: The procedure in which a controlled amount of water is temporarily retained over a horizontal surface to determine the effectiveness of the waterproofing system.

Flux: A bituminous material used as a feed stock for further processing and as a material to soften other bituminous materials.

Freeze-thaw resistance: Resistance to cycles of freezing and thawing that could affect application, appearance, or performance.

Full mopping: Application to provide a continuous, reasonably uniform layer of bitumen over the entire surface being mopped. Also called solid mopping.

G

Glass base sheet: A base sheet made of glass fibers. It is asphalt-impregnated and coated glass-roll roofing surfaced with mineral matter. There are different types. Type III is used as first ply in BUR.

Glass felt:

- 1. Felt made from glass fibers.
- 2. Glass fibers bonded into a sheet with resin and suitable for impregnation in the manufacture of bituminous waterproofing and roofing membranes and shingles.

Glass fiber: Random stacking of fibers to make insulator batt or board. The top of the batt is surfaced with kraft paper. The board is surfaced on both faces with fiber reinforced asphalt and kraft paper that provides a tough surface for mopping BUR or applying other roofing membranes.

Glass mat: A thin mat of glass fibers with or without a binder.

Glaze coat: A thin coating of bitumen applied to the felts of unfinished roofing to give short-term protection from weather when roofing operations are delayed, or prior to the application of the protective surfacing.

Granules: Particles of a graded size that are embedded in the asphalt coating of shingles, mineral-surfaced roofing, and modified bituminous membranes. These granules are opaque, natural, ceramically-coloured aggregates or crushed slags. The slag granules have a glassy or glittery appearance.

Gravel: Small pieces of aggregate larger than sand grains resulting from the natural erosion or the crushing of rock, used to protect bituminous surfaces or ballast in roofing systems.

Gravel in: To spread aggregate into hot bitumen on the surface of the roofing membrane.

Gravel spreader: A piece of mobile mechanical roofing equipment that dispenses and spreads gravel in one continuous operation.

Gravel stop: A formed strip of material, usually metal, nailed around the edges of a graveled roof to prevent the gravel from rolling or washing off and to add a finished appearance to the roof. It may be combined with eaves flashing.

Grout: A fluid cement-mortar mixture used to fill joints and cavities of masonry or concrete building construction. On roof decks the joints between many types of precast roof deck slabs are grouted.

Gum box: See pitch pocket.

Gutter: Trough at the eaves of a roof to convey rain water from the roof to a down spout.

H

Heat seaming: The process of joining two or more thermoplastic films or sheets by heating areas in contact with each other to the temperature at which fusion occurs. The process is usually aided by a controlled pressure. In dielectric seaming, the heat is induced within films by means of radio frequency waves.

Hood: A sheet-metal cover over equipment, stack vents or similar roof details.

Horizontal application: Modified bitumen or other roll roofing applied with the laps parallel to the eaves of a sloping roof.

Hydrostatic pressure: The pressure equivalent to that exerted on a surface by a column of water of a given height.

Hygroscopic: Attracting, absorbing, and retaining atmospheric moisture.

I

Incline: The angle made by a roof plane with a horizontal plane. Interchangeable with slope, fall, or pitch.

Infrared thermography: The process of displaying variations of apparent temperatures (variation of temperature or emissivity or both) over the surface of an object by measuring variations in infrared radiance.

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

Insulation: A material used as part of a building enclosure to retard the flow of heat through the enclosure. It is made from a variety of organic and inorganic fibers and foams, e.g., expanded/extruded polystyrene, glass fiber, cellular glass, phenolic foam, perlite, polyurethane foam, polyisocyanurate foam. It can be loose-filled, or used in batt, board or block form. See also roof insulation, board insulation.

Inverted roof: See protected membrane roof.

J

Jack: A flanged metal sleeve used as part of the flashing around small items that penetrate a roof.

Jacket: A form of facing applied over insulation board.

K

Kettle: Equipment used for heating bitumen to the temperatures required for application.

Kettle thermometer: A thermometer used for checking the temperature of the heated bitumen in the kettle, often considerably higher than the temperature at the point of application.

L

Lap: That part of a roofing unit that covers the preceding course in any overlapping roofing application. Applied to shingles, built-up roofing felts, and most other types of roofing. See also exposure.

Lap cement: A cut-back asphalt used for cementing the overlaps of cold-application roll roofing.

Lapped joint: A joint made by placing one surface to be joined partly over another surface and bonding the overlapping portions.

Loose-laid membrane: A roofing membrane that is attached to the substrate only at the edges and roof penetrations and is ballasted.

Low-sloped roof: So-called flat roof is now technically called low-slope, as it has a recommended minimum slope of 1 in 50 or 2%, for drainage purpose.

Low temperature flexibility: The ability of a membrane or other material to resist cracking when flexed after it has been cooled to a low temperature.

M

Mastic:

1. A material of relatively viscous consistency that dries or cures to form a protective finish, suitable for application to thermal insulation in thickness greater than 0.75 mm per coat.
2. Trowelable bituminous paste made by adding mineral fillers to concentrated cutbacks. See also plastic cement, cement and asphalt mastic.

Mechanically fastened membranes: Generally used to describe membranes that have been attached at defined intervals to the substrate.

Membrane: The term membrane applies to a continuous sheet of material whether it is prefabricated as a flexible polymeric sheeting or is sprayed or coated in the field, in single ply or in multiple plies.

Membrane migration: Progressive movement of roofing membranes in one or both directions that occur on roofs due to thermal shrinkage. Consequently, it can move improperly-adhered insulation.

Metal flashing: Frequently used as through-the-wall, cap or counter-flashing.

Mil: A unit of measure, one mil is equal to 25.4 micrometres or 0.001 inches. It is often used to indicate the thickness of a roofing membrane.

Mineral fiber: Insulation composed principally of fibers manufactured from rock, slag, or glass with or without binders.

Mineral fiber felt: A felt with rock wool as the principal component.

Mineral granules: See granules.

Mineral-surfaced felt: Bitumen-coated felt surfaced on one side with natural or synthetic coloured granules.

Mineral-surfaced roofing:

1. Roofing that is coated on both sides with asphalt and finished on the weather side with natural or synthetic coloured mineral granules, usually for only exposed portion of the felt.
2. BUR where 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.

Mini mopper: A small container with wheels that can be pushed along over the roof to dispense bitumen for the laying of roofing felts.

Modified bituminous membrane:

1. A bituminous material that has been chemically or physically altered by the addition of polymers intended to improve its performance characteristics.
2. Composite sheets consisting of a polymer modified bitumen often reinforced and sometimes surfaced with mineral granules or metal foils.

Mop: A tool used for the application of hot bitumen made from a bundle of cotton or other yarn attached to a long wooden handle. Bitumen soaked up and held by it when dipped into a container of hot material is transferred to and spread on the roof.

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, coated with adhesive, and then turned over and adhered to the substrate.

Mopping:

1. The act of spreading hot bitumen with a mop.
2. Also may refer to a layer of hot bitumen mopped between plies or over roofing felts.

Mud cracking: Surface cracking resembling a dried mud flat surface.

N

Nailer: See nailing strips

Nailing: Fastening of roofing materials by nails or other hammer-driven special fasteners.

Nailing strips: A member, usually of wood, set into or secured to non-nailable roof decks or walls to allow for positive anchorage by nailing of roofing felts, insulation or flashings.

Night seal (or night tie-in): A material and/or method used to temporarily seal a membrane edge during construction to protect the roofing assembly in place from water penetration. Usually removed when roofing application is resumed.

Non-woven: A manufactured sheet, web or batt of directional or randomly oriented fibers of natural or man-made origin produced by physical, chemical and mechanical means. See also dry-laid, wet-laid, spunbonded, and needle punched.

O

Organic: Being or composed of hydrocarbons or their derivatives, or matter of plant or animal origin.

Organic content: Usually synonymous with volatile solids in an ashing test; e.g. a discrepancy between volatile solids and organic content can be caused by small traces of some inorganic materials such as calcium carbonate that lose weight at temperatures used in determining volatile solids.

Organic felt: Felt made from organic fibers and in particular wood fibers

Overheating: Heating the material in the kettle in such a manner that its characteristics are altered. This alteration could occur by prolonged heating at proper temperature or by heating for shorter periods at higher than recommended kettle temperature.

P

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

Parting agent: Fine sand, mica talc or similar material spread over the surface of roofing membranes to prevent sticking in the roll.

Perforated felt: Bitumen-saturated felt perforated with closely-spaced small holes to allow air and moisture to escape during application of BUR.

Perlite:

1. It is produced by heating and expanding siliceous volcanic glass and is used as loose fill insulation.
2. It is also used as an aggregate in light-weight concrete.
3. It is combined with organic fibers and waterproofing binders to make insulating boards.

Phased application: The practice of laying one or more plies of a built-up roofing at one time with the additional plies laid at a later time.

Picture framing:

1. A rectangular pattern of ridges in a membrane over insulation or deck joints.
2. A pattern used in arranging strip fasteners.

Pinhole: A tiny hole in a film, foil, or laminate comparable in size or shape to one made by a pin.

Pitch:

1. A black or dark brown solid cementitious residue that results from the distillation of tar. A tar derived from coal is referred to as coal tar, and a pitch derived from coal tar as coal tar pitch. Also called roofer's pitch.
2. Incline or slope of roof.

Pitch pocket: A flanged, open-bottomed metal container placed around items such as columns that project through the roof system. The flange is properly set into the roof membrane and the pan is well filled with plastic cement or hot bitumen. Also called mastic pan, plastic pan, gum box.

Plank deck: Wood deck of planks usually 40 mm to 90 mm thick and 150 mm to 200 mm wide laid on the flat tongued-and-grooved or splined edges, and spiked together.

Plastic: A material that contains as an essential ingredient, one or more organic substances of large molecular weight.

Plastic cement: Although all caulking cements could be called plastic cements, there is a commonly held acceptance in the roofing industry that plastic cement means bituminous cement, either asphalt or coal tar based. It is a mixture of bitumen, fibers, filler and suitable solvent. See also flashing cement.

Plastic pan: See pitch pocket.

Plaza-deck roof: See roof terrace.

Ply: A single layer or thickness of roofing material in a 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.

PMR: Protected membrane roof.

Podium: See roof terrace.

Polyester fiber: Generic name for a manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed of an ester of a dihydric alcohol and terephthalic acid. Scrims and mats made of polyester fiber are used for fabric reinforcement for membranes.

Polyisocyanurate foam: This insulation material is produced from polyisocyanurate based chemicals. The foam board is sandwiched between asphalt saturated organic or inorganic felt facer sheets.

Polymer: A macromolecular material formed by the chemical combination of monomers having either the same or different chemical composition. Plastics, rubbers, and textile fibers are all high molecular weight polymers.

Polymerization: A chemical reaction in which monomers are linked together to form polymers.

Polyol: A polyhydric alcohol, i.e. one containing three or more hydroxyl groups, one component of polyisocyanurate and polyurethane compounds.

Polyurethane (PU): Insulation composed principally of the catalysed reaction product of polyisocyanurate and polyhydroxy compounds, processes usually with fluorocarbon gas to form a rigid foam having a predominantly closed-cell structure. It is sprayed-in-place or preformed into boards. See also insulation.

Polystyrene: A polymer prepared by the polymerization of styrene as the sole monomer.

Polyvinyl chloride (PVC): A synthetic thermoplastic polymer prepared from vinyl-chloride. PVC can be compounded into flexible and rigid forms through the use of plasticizers, stabilizers, filler, and other modifiers. The rigid forms are used in pipes, the flexible forms in the manufacture of sheeting for roofing.

Pond: A surface which is incompletely drained.

Ponding: The collection of rain water in shallow pools on the surface of roofing.

Portland cement: Hydraulic cement used for making concrete and grout.

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

Pour: See pour coat.

Pourable sealer: 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.

Pour Coat: The top layer of bitumen for an aggregate-surfaced built-up roofing membrane, poured or flooded onto the finished felts and over which the aggregate is spread. Also called a pour or a flood coat.

Prepared roofing: A general term applied to all asphalt roll roofing products and shingles that are ready for application on site.

Prestressed concrete: Concrete in which the reinforcing cables, wires or rods in the concrete are tensioned before there is load on the structural member, holding the concrete in compression for greater strength.

Primer: A thin liquid bitumen applied to a surface to improve the adhesion of heavier applications of bitumen and to absorb dust. The most commonly used is asphalt primer.

Protected membrane roof (PMR): A roofing system wherein the roofing membrane is applied to a suitable substrate and the insulation is placed on top of the membrane and is ballasted. Also called inverted roof.

Protection mat: A sacrificial material used to shield one roof system component from another.

PVC: Abbreviation for polyvinyl chloride.

R

Rag felt: A term sometimes used to describe organic-fiber felt. A hangover from earlier days when a percentage of rag fiber was used.

Rainwater leader: See conductor.

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

Reflectance: The fraction of the incident radiation upon a surface that is reflected from the surface.

Reglet: A horizontal groove or slot in a wall or other vertical surface adjoining a roof and projecting above its surface into which flashing can be secured and sealed.

Reinforced membrane: A roofing or waterproofing membrane reinforced with felt, mat, fabric or chopped fibers.

Reinforcement: A strong inert material bound into asphaltic or polymeric materials to improve its strength, stiffness, and impact resistance. Reinforcements are usually long fibers of glass, sisal, cotton or polymers, in woven or non-woven form. To be effective, the reinforcing material must form a strong adhesive bond with the resin.

Relative humidity: The ratio of water vapour in the air to the water vapour in saturated air at the same temperature and barometric pressure. Approximately, it equals the ratio of the partial pressure or density of the water vapour in the air to the saturation pressure or density, respectively, at the same temperature.

Re-roofing: Replacement of all or part of a roofing system.

Ribbon mopping: See strip mopping.

Roll goods: A general term applied to rubber and plastic sheeting whether fabric reinforced or unreinforced. They are usually furnished in rolls.

Any roofing material that is supplied from the manufacturers in rolls, but more specifically applied to coated felts either smooth or mineral-surfaced used for roofing without additional top coatings or surfacing.

Roof assembly: An assembly of interacting roof components (including structural roof deck) for weatherproofing and thermal insulation.

Roof area divider: A building detail used to limit the size of a continuous roof membrane, dividing a roof into a number of smaller areas. The divider extends only to the roof deck and is not an expansion joint.

Roof cement: See flashing cement.

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

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

Rofer's pitch: See pitch.

Roof garden: See roof terrace.

Roof hatch: See scuttle.

Roofing:

1. The material used for constructing a water shedding or waterproofing system.
2. That part of the architectural specifications and building construction contract that deals with the supply and application of roofing materials and systems.

Roofing system: An assembly of interacting components designed to weatherproof, and normally to insulate, a building's top surface.

Roof insulation: Any medium of low-density material suitable and used as part of a roofing system to reduce heat loss or gain through the roof. See also insulation, board insulation.

Roof system: A system in interacting roof components (not including structural roof deck) for weatherproofing and thermal insulation.

Roof terrace: A traffic-bearing or landscaped roof. Also called promenade, podium or plaza-deck roofs or roof gardens.

Rubber: A polymeric material that, at room temperature, is capable of re-covering substantially in shape and size after removal of a deforming force. Refers to both synthetic and natural rubber. Also called an elastomer.

Run: The horizontal distance to which the fall or vertical distance for an inclined roof is referenced. A unit horizontal distance of one metre is taken for the run to which the fall in millimetres is given to describe the incline.

S

Saddle: See cricket.

Saturant: A bitumen of low softening point for impregnating the dry felts in the manufacture of saturated roofing felts.

Saturated felt: A felt that has been immersed in hot bitumen; the felt absorbs as much bitumen as it can retain under the processing conditions, but remains porous and contains voids.

Saturation efficiency: It applies to asphalt saturated felts. It is the ratio of actual saturation level to the kerosene number of the moisture-free de-saturated felt multiplied by 100. See kerosene number.

SBS: See styrene butadiene styrene.

Scraper: A tool or a piece of equipment for removing aggregate surfacing from built-up roofing for repair or re-roofing. Also called a spud or spudder.

Screed: Lightweight fill placed on the surface of a roof deck to create slopes to roof drains. Also used to achieve the sloped fill.

Screen: An apparatus with circular apertures or mesh for separating sizes of granular material, e.g. aggregates.

Scrim: A woven or non-woven, open mesh reinforcing fabric made from continuous filament yarn. Used in reinforcing the roofing sheeting.

Scupper: An outlet in the wall of a building or a parapet wall for drainage of overflow water from a floor or roof directly to the outside. Special scupper drains connected to internal drains are sometimes installed at roof and wall junctions.

Scuttle: A hatch that provides access to the roof from the interior of the building. The scuttle may have its own curb, or may be placed on a built-up curb. Also called a roof hatch.

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

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

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

Self-healing: Refers to bitumen that softens with the heat from the sun and flows to seal cracks that formed in the bitumen from other causes.

Selvage: The portion of mineral-surfaced roofing where the mineral surfacing is omitted to allow the overlapping sheet to achieve better adhesion. For double-coverage application the selvage width is half the width of the roll plus about 25 mm and for single-coverage, the roll width minus 50 mm.

Separate layer application: Felts applied with a small edge-lap for each of several separate plies.

Separator sheet: See slip sheet.

Sheet: An unrolled piece of roofing felt or other single-ply prefabricated material.

Side lap: See edge lap.

Skater's cracks: Curvilinear cracks in a roofing membrane. It does not appear to relate to the direction of application of the membrane or the substrate components.

Slag: A gray porous aggregate produced by air cooling and crushing residue from blast furnaces, used as a protective surfacing for shingles, roll roofing and built-up roofing. Also called blast-furnace slag. See also granules.

Slippage: A sliding movement between:

- a. adjacent plies or layers of roof membrane in the plane of the bitumen film separating them,
- b. the gravel or granule surfacing and the underlying felt,
- c. felts in the bitumen pour coat or coating,
- d. the membrane and insulation or insulation and deck.
- e. Occurs mainly in roofing membranes on a slope, sometimes exposing the lower plies or even the base sheet to the weather.

Slip sheet: Sheet material placed between two layers of a roofing system to assure that there is no adhesion between them. It also protects the lower layer. Also called separator sheet.

Slope: See incline.

Smooth-surface roofing: Roofing felt that is asphalt-coated on both sides with either a smooth or veined surface. Built-up roofing that may have an applied coating but that has no protective surfacing or gravel or other aggregate.

Snow and ice guards: A low barrier erected along the length (i.e. parallel to eaves) of a sloping roof to restrain snow pile from sliding from roofs, mainly of glass, metal or polymeric sheets.

Softening point drift: A measure of the temperature sensitivity of bitumen, by an empirical test that gives the temperature at which a steel ball of specific size falls a definite distance through a disk of the bitumen when the test assembly is heated in water at a specific rate.

Solid mopping: See full mopping.

Splice: Bonding or joining of overlapping materials.

Split: A membrane tear resulting from tensile stress.

Split sheet: See wide selvage roofing.

Splitting: The formation of long cracks usually completely through a built-up roofing membrane representing a tension failure of the membrane.

Spot mopping: Application of bitumen in roughly circular spots (400 mm to 500 mm in diameter) in a uniform pattern providing unmopped strips in a grid pattern or between staggered spots.

Sprinkle mopping: Application by haphazardly sprinkling or dribbling small amount of bitumen onto a surface with a mop or broom.

Spudder: See scraper.

Spunbonded non-wovens: Polyester or glass in molten state is passed through tiny spinneret holes to form continuous fibers. They are collected in a random orientation on a moving belt to form a web which, bonded heat and pressure, forms a spunbonded fabric.

Square: A roof area of 9.39 m² (100 ft²), or roofing material required to cover 9.39 m² of deck.

Stack venting: Providing small vertical pipe outlets through a roofing membrane to permit equalization of pressures or relieve the pressure of water vapour trapped in the system. It helps dry materials such as insulation below the membrane.

Steep asphalt: Asphalt of high melting point suitable for steeply-sloped roofs with inclines greater than 1.8. Type 3 Asphalt for BUR as defined by CSA.

Steep roof: Roof with a slope from 1:8 to 1:1 (7° to 45°).

Step flashing: Individual pieces of flashing material used to counter flash chimneys, dormers and other projections along steep-sloping roofs. The individual pieces are overlapped and stepped up the vertical surface. Also called soakers.

Strainer: A wire, plastic or cast-metal cage placed over the top of a roof drain to prevent debris and leaves on the roof from entering the drain.

Strip mopping: Application of bitumen in parallel bands roughly 200 mm wide with 100 mm unmopped bands between. Also called channel or ribbon mopping.

Stripping felt: Narrow widths of felt used to complete flashing details, particularly to cover the edges of metal flanges incorporated into built-up roofing.

Styrene butadiene styrene: High molecular weight polymers that have both thermoset and thermoplastic properties, formed by the block copolymerization of styrene and butadiene monomers. These polymers are used as the modifying compound in SBS polymer modified asphalt roofing membranes to impart rubber-like qualities to the asphalt.

Substrate: The surface upon which the roofing or waterproofing membrane is placed. It may be structural deck or insulation or any other base material.

Sump: A depression around a drain in the roof deck or insulation to provide a water reservoir.

Surface condensation: Condensation that appears on the colder exposed surfaces of a roofing system.

Surface cure: Curing or vulcanization that occurs in a thin layer on the surface of a manufactured polymeric sheet or other items.

Surfacing: Any aggregate or granular material or coating used as a protective covering on the weather surface of roofing. The protective and traffic-bearing layer of a roof terrace is also called the top cover.

T

Tanker: A tank truck specially designed with heating and pumping equipment for conveying and dispensing liquid bitumen.

Tapered edge strip: A tapered insulation strip used to elevate the roofing at the perimeter and at penetrations of the roof. Also called back slopes.

Tar: Black or dark brown liquid or semi-liquid condensates derived from the heating or baking, sometimes called destructive distillation, of wood, peat, oil shale, bone, petroleum, coal or other organic materials. The word is incorrectly used to describe asphalt as in the expression “tar-and-gravel roofing.”

Tar felt: Felt for which the saturant is coal tar pitch, more properly called coal tar pitch felt.

Tear off: To remove an existing roofing system down to the structural deck.

Thermal bridge: A heat-conductive element in a roof or wall that extends from the warm to the cold side and provides less heat-flow resistance than the adjacent construction. May be of considerable consequence when it passes through the insulation of a well-insulated wall or roof.

Thermal shock: A stress-producing phenomenon resulting from sudden temperature drops in a roof membrane that take place with rapid weather changes, e.g. a rain shower following brilliant sunshine.

Thermal stress: Stress introduced by uniform or non-uniform temperature change in a structure or material that is contained against expansion or contraction.

Tin caps: Small flat metal discs used with nails for securing roofing felts to nailable decks.

Top cover: See surfacing.

Top pour: The application by pouring of the top layer of bitumen on a built-up roofing. Often used to describe the top layer of bitumen no matter how applied. See also pour coat.

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

U

Underlay: A material, usually felt, used in covering a roof deck before the roofing materials are applied.

Underlayment: See sheathing paper.

Underlay sheet: Any of the bituminous base sheets, bituminous roll roofing and reinforced treated kraft laminates.

V

Vapour: A substance in gaseous state. In relation to building, it generally refers to water vapour.

Vapour migration: The movement of water molecules from a region of high to one of lower vapour pressure through the walls and roofs of buildings.

Vapour permeability: The rate at which water vapour will diffuse or permeate through a unit area in unit time with unit vapour pressure difference across a unit thickness of a material. The units are nanograms per square metre per metre of thickness per second of time per pascal of pressure difference. The symbol is u and the units are written $\text{ng}/(\text{PaAsAm}^2)$.

Vapour permeance: The rate at which water vapour will diffuse through a material of a particular thickness. The symbol is M and the units nanograms per square metre per second per pascal vapour pressure difference written in $\text{ng}/(\text{PaAsAm}^2)$, $M=u/l$ where l = thickness in metres.

Vapour resistance: A measure of the resistance to water-vapour flow. Vapour resistance is the reciprocal of permeance = $1/M$ and the units are written $(\text{PaAsAm}^2)/\text{ng}$.

Vapour retarder: Material used to retard the passage of vapour or moisture into the roof system where harmful condensation of vapour within the system could take place.

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

Vertical application: Roof membranes applied with the laps at right-angles to the eaves and parallel to the rake. Also called up-and-over when it continues over the ridge. Sometimes laid slightly on the bias, i.e., by tilting a few degrees to encourage drainage over rather than against the lap.

Viscosity: The internal resistance offered by a fluid to change shape or to relative motion or flow of its parts. The flow characteristics of bitumen is measured in centistokes. Asphalt may vary from 30 to 500 centistokes when heated from 175°C to 260°C depending on the asphalt type.

W

Walk in: To improve embedment of insulation panels in hot bitumen or adhesive by walking on them immediately after application.

Warm roof assembly: A roof assembly configured with each component placed immediately on top of the preceding component; each component is in contact with the adjacent component. No space is provided for ventilation of the roof assembly. Also known as a “compact” roof assembly.

Waterproof: The quality of a membrane, membrane material or other component to prevent water entry.

Waterproofing:

1. A material used to treat or cover a building element or component to prevent leakage of water.
2. Treatment of a surface or structure to prevent the passage of water under hydrostatic pressure.

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

Water vapour diffusion: The process by which water vapour spreads or moves through permeable materials caused by a difference in water vapour pressure.

Water vapour permeability: See vapour permeability.

Water vapour pressure: The pressure of water vapour at a given temperature; also the component of atmospheric pressure contributed by the presence of water vapour.

Water vapour transmission (WVT): Water vapour flow normal to two parallel surfaces of a material, through a unit area, under specified conditions. It is expressed in g/m²AsAPa.

Weatherproof: The ability of a membrane or roof covering to prevent the passage of water with a limited amount of hydrostatic pressure.

Wind uplift: The force caused by the deflection of wind at roof edges, roof peaks or obstructions, causing a drop in air pressure immediately above the roof surface.

Wrinkling: Small ripples formed at the surface of roofing membranes similar to ridging.

End of Section