Glossary of Terms

7

The following is a list of terms based on building construction and the use of building seals and sealants in fenestration glazing applications:

acrylic sealants - A group of thermoplastic or thermosetting polymers or copolymers of acrylic acid, methacrylic acid, esters of acids, or acrylonitrile, used to produce synthetic rummber.

activator - A material which, when added to the base compound or the curing agent, as in the case of a two-part system, will speed up or initiate the curing mechanism.

adhesion - That property of a coating or sealant which measures its ability to stick or bond to the surface to which it is applied.

adhesion failure - Failure of the bond between the sealant, adhesive, or coating and the substrate surface.

adhesion peel-back test - The separation of a bond, whereby the material is pulled away from the matting surface at a 90 degree angle or a 180 degree angle to the plane to which it is adhered.

alligatoring - The splitting of a coating or sealant in a pattern so that it resembles the hide of an alligator.

ambient temperature - The temperature of the air surrounding an object under construction or during testing.

- **anti-walk blocks** Elastomeric blocks that limit lateral glazing infill movement in the glazing channel, which may result from thermal, seismic, wind loads, building movement, and other forces that may apply.
- backer rod A polyethylene or polyurethane foam material installed under compression and used to control sealant joint depth, provide a surface for sealant tooling, serve as a bond breaker to prevent three-side adhesion, and provide an hour glass contour of the finished bead.

back-up - A compressible material placed into a joint opening, primarily to control the shape and depth of the sealant.

bake test - An accelerated test wherein a product, such as a sealant, is subjected to predetermined conditions of elevated temperature and time intervals. The test serves as an indication of what may be expected in respect to certain characteristics when the product is subjected to extended periods of exposure under normal conditions.

bead - A strip of sealant or compound after application in a joint irrespective of the method of application, such as caulking bead, glazing bead, etc. Also a molding or stop used to hold glass or panels in position.

bed or bedding - The bead of compound applied between sight bar glass or panel and the stationary stop or sight bar of the sash or frame, and usually the first bead of compound to be applied when setting glass or panels.

bedding of stop - The application of compound at base of channel, just before the stop is placed in position, or buttered on inside face of stop.

bevel of compound bead - Bead of compound applied so as to have a slanted top surface so that water will drain away from the lite of glass, glazing infill, or panel.

- **bite** The dimension by which the framing system overlaps the edge of the glazing infill. In structural silicone glazing, the effective structural contact dimension of the structural sealant.
 - bleeding The absorption of oil or vehicle from a compound into an adjacent porous surface.

block - Rectangular, cured sections of EPDM, neoprene, silicone or other suitable material, used to position the glazing infill in the glazing channel or frame.

blooming - The movement or diffusion of a component such as a plasticizer, monomer, unreached polymer or other formulation ingredient to a sealant, coating or membrane surface.

bond breaker - A material to prevent adhesion at a designated interface.

brookfield test - A means of determining the viscosity of liquids or semipastes by measuring the drag produced upon a cylinder or disc rotated at a definite constant speed and at a specified temperature while immersed in the material tested.

bridge sealant joint - A joint where sealant is applied over the joint to the face of substrates that are in approximately the same plane.

 bubbling - Open or closed pockets in a sealant caused by release, production, or expansion of gasses.

- **butt glazing** A glazing system where the vertical glass edges are without structural supporting mullions. The joint between lites of glass may be filled with a glazing sealant or in interior applications, may remain open.
- butt sealant joint A joint where sealant is applied within the joint between approximately parallel substrate surfaces that are face-to-edge or edge-toedge.
- **buttering** Application of putty or sealant compound to the flat surface of some member before placing the member in position, such as the buttering of a removable stop before fastening the stop in place.
- **butyl** Synthetic rubber formed by the co-polymerization of isobutylene with isoprene.
- butyl sealants A range of synthetic rubbers made by copolymerization of isobutylene and isoprene.

castor-severs test - Performed with a Castor-Severes Rheometer and measures the rate of flow of a compound under controlled conditions of temperature, pressure and orifice size.

catalyst - A material which markedly speeds up the cure or reaction of another substance when added in proper quantities.

caulk - To install or apply a sealant across or into a joint, crack or crevice.

caulking - See Sealant.

chalking - The formation of a powder on the surface of a sealant, coating, or membrane that is caused by disintegration of the polymer or binding medium due to weathering.

chain stopper - A material which, when added during the polymerization process, will terminate or stop the molecules from continued growth to still longer lengths.

channel - A three-sided, U-shaped opening in sash or frame to receive the lite of glass, glazing infill or panel, with or without removable stop or stops. Contrasted to a rabbet, which is a two-sided, L-shaped section, as with face glazed window sash.

channel depth - The measurement from the bottom of the channel to the top of the stop, or measurement from sight-line to base of channel.

channel glazing - The sealing joints around lites of glass, glazing infill or panels set in a U-shaped channel employing removable stops.

channel width - The measurement between stationary stops (or stationary stop and removable stop) in a U-shaped channel.

chlorinated rubber - A synthetic rubber resin produced by the chlorination of natural rubber or of a synthetic rubber, such as polyisoprene.

 cohesive failure - Splitting and opening of a sealant resulting from overstressing of the compound caused by excessive movement.

compatibility- The capability of two or more substances to be mixed or blended or to be placed in contact with or in close proximity to one another without separating, reacting, or affecting physical and chemical properties of the materials adversely.

 compatibible materials - Compounds or substances that can exist in close proximity or in contact with one another without detrimental effects on either.

compound - A formulation of ingredients, usually grouped as vehicle or polymer pigment and fillers to produce caulking compound, elastomeric joint sealant, etc.

compression - Pressure exerted on a compound in a joint, as by placing a lite of glass, glazing infill or panel in place against bedding, or placing a stop in position against a bead of compounds.

concave bead - Bead of compound with a concave exposed surface.

consistency - Degree of softness or firmness of a compound as supplied in the container, and varying according to method of application, such as gun, knife, tool, etc.

convex bead - Bead of compound with a convex exposed surface.

co-polymer - A polymer consisting of molecules containing two or more chemically different types of monomers.

- **____ crazing** The formation of a network of random surface cracks in a sealant, coating or membrane.
- **cure** The process by which a compound attains its intended performance properties by means of evaporation, chemical reaction, heat, radiation, or combinations thereof.
 - **_____ curing agent** One part of a multi-part sealant which when added to the base will cause the base to change its physical state by chemical reaction between the two parts.

diluent - A liquid, not necessarily a solvent for the solid ingredients, which is added to the compound or paint for the purpose of increasing bulk.

double glazing - An insulating glass unit with two lites of glass separated by a spacer material containing desiccant and sealed around the perimeter.

durability - A general term for resistance to deleterious change of an installed sealant, coating or membrane.

durometer - Measurement of a rubber-like material hardness.

dynamic elongation test - Elongation or stretching of a material under continuous movement.

edge spacer - A spacer placed to prevent edge contact and to position laterally a glazing infill or panel within the supporting frame. Also referred to as anti-walk blocks and edge blocks.

elastomer - A macromolecular material that returns rapidly to approximately its original dimensions and shape after substantial deformation by a weak force and release of the force.

elongation - Extension of a material produced by a tensile stress.

elongation at rupture test - The amount a material has stretched at the time it breaks apart.

epdm - Ethylene Propylene Diene Monomer, a synthetic rubber

epoxy - A thermoplastic resin formed by combining epichlorohydrin and bisphenols. Requires a curing agent for room temperature or elevated temperature hardening.

exterior glazed - Glass or glazing infill installed from the exterior of the building.

exterior stop - The removable molding or bead that holds a lite of glass, glazing infill or panel in place when it is exterior glazed, as contrasted to an interior stop located on the interior side for interior glazing applications.

— expansion joint seal - A seal or sealant system that provides an elastic, compressible, or flexible barrier to the passage of gases, liquids, or solids.

face glazing - A method of glazing in which a rabbeted glazing recess, with no removable stop, is used and a triangular bead of compound is applied to the face of the lite of glass, glazing infill or panel and extended onto the recess.

fenestration - An opening, glazed panel, window, door, curtain wall, window wall, skylight or slope glazing on the exterior of a building.

fillet sealant joint - A joint where sealant is applied over the joint to the face of substrates that are approximately perpendicular to each other.

flange - The projection around the exterior perimeter of some sash.

flow - The deformation of a tape sealant under stress.

fluid migration - The accumulation of a fluid from a sealant, coating or membrane on or in an adjacent material.

_____four-side structural sealant glazing - A glazing system where all dimensions of a lite of glass, glazing infill or panel are structurally bonded to the support framing system with a structural silicone sealant.

gasket - Pre-formed shapes of rubber and rubber-like composition, used to fill and seal a joint or opening either alone or in conjunction with a supplemental application of a sealant.

glazing - (n) - A generic term used to describe a window infill material such as glass or panels, etc. (v) The installation of a lite of glass or other infill materials in prepared openings of a building.

glazing bead - A strip surrounding the edge of the glass or glazing infill in a window or door, which holds the material in place.

glazing channel - A three-sided, U-shaped sash detail into which a lite of glass, glazing infill or panel is installed and retained.

glazing compound - A putty material composed primarily of oil- or resinbased ingredients used for sealing a lite of glass, glazing infill or panel in frames. gun consistency - Compound formulated in a degree of softness suitable for application through the nozzle of a caulking gun.

- **_____ gun-grade** A material of suitable viscosity to extrude throught the nozzle of a hand- or power-operated device.
- heel bead Sealant applied at the base of channel, after setting a lite of glass, glazing infill or panel and before the removable stop is installed, one of its purposes being to prevent leakage past the stop. Sealant must bridge the gap between the glass and frame.

insulating glass unit - Two or more lites of glass separated by a spacer material containing desiccant and sealed around the perimeter.

interior glazed - Glass or glazing infill set from the interior of the building.

interior stop - The removable molding or bead that holds a lite of glass or glazing infill in place, when it is on the interior side of the glazing, as contrasted to an exterior stop which is located on the exterior side of a glazing or panel.

jambs - The vertical members of a fenestration system frame adjacent to the structural members of a building.

joint - The space or opening between two or more adjoining surfaces.

joint filler - A compressible material used in a partial or totally filled expansion, control or isolation joint by its permanent placement in or between building materials during construction; sometimes used as a sealant backing in a partially filled joint.

- **knife-grade** Compound formulated in a degree of firmness suitable for application with a glazing knife such as used for face glazing and other sealant applications.
- lap joint A joint where sealant is applied within the joint between approximately parallel substrates that are face to face.
- **latex sealant** Rubber or plastic derived from polymerization that is emulsified in waterand yields a synthetic elastomeric,

lite - The common term for a single piece of glass or glazing infill used in a fenestration application.

mastic - Descriptive of heavy-consistency sealant compound that may remains adhesive and pliable with age.

migration - Spreading or creeping of oil or vehicle from a compound out onto adjacent non-porous surfaces, as contrasted to bleeding which refers to absorption into adjacent porous surfaces.

mitered corners - Usually a 45 degree mitered joint produced in some sash where vertical jamb members meet horizontal head and sill members.

 modulus - The stress (force/unit area) at a corresponding strain expressed as a percent of or tensile strength at given elongation.

monomer - An organic liquid substance or simple chemical compound that can be polymerized, yielding a much larger molecule called a polymer.

mullion - A horizontal or vertical member that holds together two adjacent lites of glass or units of sash or sections of a curtain wall, window wall, or sloped glazing system.

muntin - In sash having horizontal and vertical bars that divide the window into smaller lites of glass.

natural rubber - The elastomer obtained from the heavea tree. The basic polymer is also present in other shrubs and trees. The first truly elastomeric type of product known.

needle glazing - A glazing application that calls for a small bead of sealant installed at the sight-line adhering to the sash to the glass, glazing infill or panel by means of a nozzle with an orifice not exceeding 1/8 in. (3 mm) in diameter.

neoprene - A synthetic rubber with high resistance to sunlight and oil; commonly used for fenestration system gaskets, spacers and setting blocks.

nitrile rubber - A class or rubber-like co-polymers with high resistance to solvents and oils, greases, heat and abrasion.

non-drying (non-curing) - Descriptive of a sealant or compound that does not set up or cure.

non-oxidizing - Descriptive of a compound that withstands accelerated weathering, the equivalent of 20 years of normal weathering without oxidizing.

non-skinning - Descriptive of a sealant that does not form a surface skin after application and usually remains tacky or sticky.

non-staining - Characteristic of a sealant or compound which will not stain a surface by bleeding or migration of its oils or other ingredients.

non-volatile - Any substance which does not evaporate or volatize under normal conditions of temperature and pressure.

oleoresinous - A mixture of natural or synthetic resins blended with drying oils.

organic - Compounds which consist of carbon and generally hydrogen, with a restricted number of other elements, such as oxygen, nitrogen, sulphur, phosphorous, chlorine, etc., but not containing atoms or molecules, generally known as metals.

organisol - Essentially a plastisol which contains solvent that must be evaporated prior to exposing the material to the elevated temperature necessary for fusion or curing.

outgassing - The emission of occluded gasses from a material by vacuum, heat, or pressure.

pane - See lite.

peeling - The failure of a sealant or compound whereby the skin curls away from the remaining compound under the skin.

plastisol - A physical mixture of resin (usually vinyl) compatible plasticizers, stabilizers and pigments. Mixture requires fusion at elevated temperatures in order to convert the plastisol to a homogenous plastic material.

polybutene - A non-drying light colored liquid, straight chain aliphatic hydrocarbon polymer widely used as a major component in sealing and caulking compounds.

polybutene base - Compounds made from polybutene polymers.

polyester resin - One of a group of synthetic resins which undergo polymerization during curing; advantageous because of high pressure is not required for curing; has excellent adhesive properties, high strength and good chemical resistance.

polyisobutylene - Polymer manufactured from gaseous hydrocarbons. The polymer is a major portion of butyl rubber which also contains a small percent of isoprene. The product is commonly used as the primary seal for insulating glass units due to its high resistance to moisture vapor transmission.

polymer - One of a group of high molecular weight resin-like organic compounds with a chemical structure consisting of a long chain of small molecular units.

polymerized - Treated by heating or cooking or chemically induced so that molecules of different substances unite into larger molecules of a different substance with individual characteristics.

polymerization - The reaction occurring when two or more molecules of a compound are united to form a more complex compound with a higher molecular weight.

polysulfide - A synthetic polymer that is resistant to light, oils and solvent.

polysulfide base - Compounds made from polysulfide synthetic rubber.

polyurethane - A polymer prepared by the reaction of an organic diisocyanate with compounds containing hydroxyl groups.

pot life - The time interval following the addition of an accelerator or curing agent before a chemically curing material will become too viscous to apply satisfactorily. Synonymous with working life.

preshimmed tape sealant - A sealant having a pre-formed shape containing solids or discrete particles that limit its deformation under compression.

primer - A compatible coating designed to enhance adhesion.

priming - Sealing of a porous surface so that compound will not stain, lose elasticity, shrink excessively, etc., because of loss of oil or vehicle into the surround. A sealant primer or surface conditioner may be used to promote adhesion of a curing type sealant to certain surfaces.

putty - A knife-grade compound generally used as a glazing compound to fill cracks or holes.

rabbet - A two-sided L-shaped recess in sash or frame designed to receive glazing. racking - Movement and distortion of fenestration sash or frames which may result in excessive strain on the sealant and joint failure.

 reaction - A mutual action of chemical agents upon each other resulting in a chemical change.

reactor - A substance undergoing a reaction or chemical change. Also refers to the equipment used in the polymerization process.

reglet - Any slot cut into masonry or formed into poured concrete or precast stone. May also be an open mortar joint left between two courses of bricks or stones, or a slot cut or cast into other types of building materials.

reversion - A loss of elastomeric properties and a decrease in durometer hardness of a seal or cured sealant following environmental exposure.

rundown - Bloom or fluid migration from a sealant, coating or membrane that due to natural forces is carried down and accumulates on vertical or sloping surfaces.

 sag - The gravity-induced downward flow of a sealant or glazing compound, resulting in an uneven thickness, when applied on a vertical surface.

sag and flow test - Vertical applications of compounds to specified surfaces or shapes under predetermined conditions of temperature and time intervals to determine their tendency to run or sag.

sagging - The flowing of a sealant within a joint, so that it loses its original shape.

sash - The fenestration system frame designed to receive lites of glass or glazing infill.

sealant - A material that has the adhesive and cohesive properties to form a seal and prevent the passage of liquid or gas across a joint or opening.

sealed insulating glass unit - See insulating glass unit

 service life - The period of time an installed sealant, coating or membrane is reasonably expected to function successfully without replacement or significant repair, assuming reasonable or expected periodic maintenance is performed.

setting - Placement of lites of glass, glazing infill or panels in sash or frames.

setting blocks - A resilient material placed to support, to distribute the load, to prevent edge contact, and to align a lite of glass, glazing infill or panel within its supporting frame.

- **setting time** The period required for a sealant material to dry sufficiently through solvent release, or cure sufficiently through chemical reaction.
- shelf-life The maximum time packaged materials can be stored under specified conditions and still meet the performance requirements specified.

shim spacer - A spacer designed and placed to position the face surfaces of a lite of glass, glazing infill or panel between the stops to prevent contact with the glazing stops.

shrinkage test - A test procedure to determine the percentage loss in volume of a compound.

sight line - 1. The line along perimeter of lites of glass, glazing infill or panels corresponding to the top edge of stationary and removable stops, and the line to which sealants contacting the glazing are are tooled. 2. The line of intersection of an opaque material with a transparent material.

silicone rubber - A stable synthetic rubber often used in setting blocks and gasket materials.

- **silicone sealant** A class of synthetic elastomer containing a polymer that is based on a molecular chain of alternating silicon and oxygen atoms.
- size of bead The width and depth dimensions of the properly designed and specified bead of sealant.

spacer - A piece of resilient material placed to maintain space between a lite of glass, glazing infill or panel and its support framing.

stop - A strip of metal, plastic, or wood used around the periphery of a lite of glass, glazing infill or panel to secure it in place.

structural sealant glazing - A glazing system wherein a structural sealant material is used to transfer loads between a lite of glass, glazing infill or panel and supporting framework, without mechanical fasteners or other methods of attachment. **substrate** - A base material to which other materials or fabrication procedures are applied.

styrene - A colorless liquid hydrocarbon used in making synthetic rubbers.

tensile strength - The maximum longitudinal stress a substance can bear before rupturing.

thermoplastic elastomer - A material having the general properties of an elastomer and capable of being repeatedly softened by hea and hardened to shape by cooling withot significant degradation of the polymer system.

thermoset elastomer - An elastomeric material that attains its intended properties by an irrevisible cross-linking reaction caused by heat alone, heat with a cross-linking agent, chemical interation, or by radiation; whereby after cross-linking, any reprocessing with heat and pressure will severely degrade the material.

toe bead - A bead of sealant applied at the intersection of the exterior glazing stop and the bottom of the glazing channel with adhesion to the glazing infill.

tooling - The act of compacting and contouring a sealant in a joint.

- **tooling time** the time interval after application of a one-component sealant or after mixing application of multi-component sealant during which tooling is possible.
- two-side structural sealant glazing A glazing system where two sides of a lite of glass, glazing infill or panel are structurally bonded to the support framing system with a structural silicone sealant.

vulcanization - An irreversible chemical reaction during which a rubber compound's chemical structure is changed to make it less plastic, more resistant to solvents, and have improved physical and mechanical properties.

- **weathering** Any change of an installed sealant, coating, or membrane due to the action of atmospheric elements.
- working life The time interval after opening a container of a single component sealant, or after mixing of a multi-component sealant, during which application and tooling is possible.

wrinkling - The formation of wrinkles in the skin of a compound during the curing of its surface skin by oxidation after application.