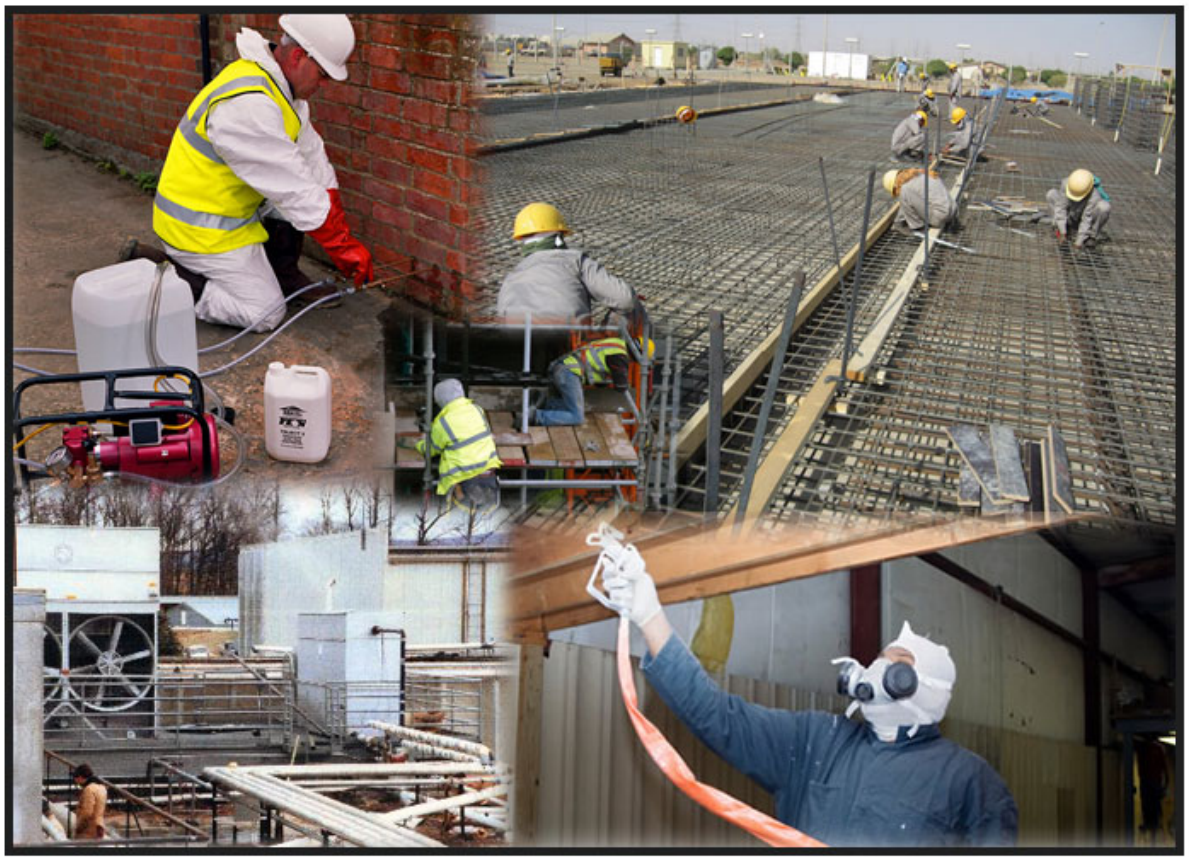
GLOSSARY OF TERMS USED IN CONSTRUCTION CHEMICAL



GLOSSARY OF TERMS USED IN CONSTRUCTION CHEMICAL

1	**Above-grade waterproofing**	The prevention of water intrusion into exposed structure elements through a combination of materials or systems. These materials are not subject to hydrostatic pressure but are exposed to weathering and pollutant attack.
2	**Abrasive cleaning**	A cleaning method that incorporates an abrasive material such as sand to remove dirt, stains, and paint from existing substrates.
3	**Absorption**	An Accumulation of water or moisture vapor directly into a material's structure of cells or fibers.

4	**Accelerated weathering**	Controlled conditions applied in laboratory testing to condense greatly the weathering a waterproofing material would experience over a long life cycle. Test results are used to compare materials of different generic types or manufacturers.
5	**Acrylic sealants**	Factory-mixed, one-component materials polymerized from acrylic acid. They are not used on joints subject to high movement due to their relatively low-movement capability.
6	**Adhesion**	The ability of a waterproof material to bond to a substrate or other material during movement or stress.
7	**Adhesive failure**	An after – installation failure of the bond between a waterproofing material, such as sealant, to the substrate surface.
8	**Adhesive strength**	The ability of sealants to bond to a particular substrate, including adhesion movement or stress.
9	**Admixtures**	Materials added to masonry or concrete envelope components to enhance and improve in-place product performance.
10	**Adsorption**	The surface absorption of waterproofing system. Testing for adsorption is carefully controlled under laboratory conditions to ensure uniform test results between different waterproofing materials.
11	**Aliphatic**	Of or pertaining to materials such as urethane in which the molecular structure is arranged in open or straight chains of carbon atoms.
12	**Alligatoring**	The cracking that occurs on a waterproofing material because of movement the material is not capable of withstanding. Alligatoring also occurs when substrate movement begins before final waterproofing material curing.
13	**ASTM**	American Society for Testing and Materials, a nationally recognized and impartial society for the testing of building materials. Test results are used for comparisons among various types and manufacturers of materials.
14	**As-built drawings**	Drawings and specifications completed after or during construction that represent the actual details used in construction. The as-built drawings might vary considerably from the original plans and specifications.
15	**Backing materials**	Backer rods and backing tape that prevent three- sided adhesion in joint design. When joints have insufficient depth for backer-rod installation, tape is used at back of joints, providing there is a firm substrate against which to install sealant. Backer rod is installed in joints where there is no backing substrate. Backing material also provides a surface against which to tool material and helps to maintain proper depth ratios.

16	**Bag grouting**	Application of a cementitious waterproofing material to the entire face of a masonry envelope. The cementitious material is removed before it is completely set and cured by using burlap bags or stiff brushes. This is also referred to as face grouting because the entire face of the masonry facade is covered.
17	**Barrier system**	A building envelope component or waterproofing system that completely repels water rather than diverting it . See divertor.
18	**Base flashing**	Flashing that prevents water from wicking upward in capillary action in a masonry wall. See Flashing.
19	**Bellows expansion systems**	Systems manufactured from vulcanized rubber into preformed joint sections. They are installed by pressurizing the joint cross section during adhesive curing, which promotes complete bonding to joint sides.
20	**Below-grade waterproofing**	Use of materials that prevent water under hydrostatic pressure from entering a structure or its components. These systems are not exposed or subjected to weathering such as by ultraviolet rays.
21	**Bentonite waterproofing**	Waterproofing materials composed primarily of montmorillonite clay, a natural material. Typically, bentonite waterproofing systems contain 85-90 percent of montmorillonite clay and a maximum of 15 percent natural sediments such as volcanic ash.
22	**Blister**	A portion of a waterproofing material raised from the substrate because of negative vapor pressure or application over wet substrates.
23	**Bond – breaker**	Specially manufactured tapes used to prevent three- side adhesion in sealant joints. See backer- rod.
24	**Building envelope**	The combination of roofing, waterproofing, dampproofing, and flashing systems that act cohesively as a barrier, protecting interior areas from water and weather intrusion. These systems envelop a building from top to bottom, from below grade to the roof.
25	**Butyl sealants**	Sealants produced by copolymerization of isobutylene and isoprene rubbers. Butyls are some of the oldest derivatives to be used for sealant materials.
26	**Cant**	The angled or beveled transition between a horizontal and vertical substrate that provides for a smooth transition between this change-in-plane detail. Also refers to the application of waterproofing material, such as cementitious coatings or sealants, applied at this intersection.
27	**Capillary admixtures**	Admixtures that react with the free lime and alkaline in a concrete or masonry substrate to form microscopic crystalline growth in the capillaries left by hydration. This crystalline growth fills the capillaries, resulting in a substrate impervious to further capillary action.
28	**Capillary action**	A wick – like migration of created by surface tension or molecular attraction.

29	**Caulking**	Joint sealing material appropriate for interior joints that exhibit little or no movement.
30	**Chemical cleaning**	A cleaning method using a variety of chemical formulations to remove a number of substrate stains including paint, rust, and pollutants
31	**Chemical grouts**	Similar in application to epoxy injection repair; however, these materials are manufactured from hydrophobic liquid polymer resins. Chemical grouts are used for waterproofing cracks in a substrate and not for structural repairs.
32	**Cladding**	A material or system, usually nonloadbearing, attached to the exterior surface of a structure that becomes part of the building envelope.
33	**Closed-cell foams**	Backer – rod materials that are manufactured to prevent the movement of air, vapor, or moisture through their structure.
34	**Cohesive strength**	The ability of a material's molecular structure to say together internally during movement. Cohesive strength has a direct bearing on elongation ability.
35	**Cold joint**	Another name for construction joint, typically non moving in nature.
36	**Construction joint**	A Joint formed at the intersection of two separate concrete placements.
37	**Contaminants**	Foreign material found on a substrate such as oils, curing agents, dust, dirt, or rust.
38	**Control joint**	A joint in building or envelope materials that allows for substrate movement.
39	**Copings**	A protective, waterproof covering placed on the top of a structure such as a parapet wall.
40	**Counter flashing**	Flashing that is surface-mounted or placed directly into wall with a portion exposed to flash various building elements, including roof flashings, water- proofing materials, building protrusions, and mechanical equipment, into the envelope. See Flashing.
41	**Cure**	A process whereby, through evaporation, heat, or chemical reactions, a waterproof material attains its final performance properties.
42	**Curing agent**	A separate material applied immediately after application to waterproofing materials or substances. Curing agents enhance curing time and properties.
43	**Dampproofing**	A system that is resistant to water vapor or minor amounts of moisture and that acts as a backup system to primary waterproofing materials. Dampproofing materials are not subject to weathering or water pressure.
44	**Delamination**	Separation of envelope materials from the applied substrate due to movement or improperly applied materials.

45	**Detailing joints**	Joints required as a component or part of complete waterproofing systems. They are used for watertight ness at building details such as pipe penetrations and changes in plane before application of primary waterproofing materials.
46	**Differential movement**	A phenomenon that occurs because materials have the individual characteristics of coefficients of movement that differ from surrounding envelope materials or systems. These differences will cause the materials to move at different rates during substrate movement.
47	**Divertor system**	envelope component that repels water by redirecting it back to the exterior by the use of flashings and weeps. See a barrier system.
48	**Drainage systems**	Prefabricated materials that facilitate the drainage of water away from the building envelope.
49	**Dual –cell foams**	A backer rod that is comprised of both open – and closed – cell structures.
50	**Efflorescence**	The staining and discoloring of masonry walls created by water – carried acids and chemical.
51	**Elasticity**	The measure of a sealant's ability to return to its original shape and size after being compressed or elongated. As with elongation, elasticity in measured as a percentage of its original length.
52	**Elastomeric**	An adjective describing the ability of a waterproof material to return to its original shape and size after substrate movement during expansion or contraction.
53	**Elongation**	The ability of sealant to increase in length, then return to its original size. Limits of elongation are expressed as a percentage of original size. A material with a 200 percent elongation, for example, is capable of stretching to double its original size without splitting or tearing. Also, the increase in length of an applied waterproofing material or system during expansion of the substrate.
54	**Epoxy injection**	The injection of low-viscosity epoxy materials into substrate cracks to restore the monolithic nature of the substrate. These can be used on wood, concrete, masonry, natural stone, or metal substrates. If additional substrate movement occurs, the epoxy may crack.
55	**Expanding-foam sealants**	These are composed of open-cell polyurethane foam, fully impregnated with a manufacturer's proprietary product formulation. These products include neoprene rubbers, modified asphalts, or acrylic materials.
56	**Expansion joint**	A break or joint in structural elements of a building that will continue to experience movement by thermal expansion and contraction.
57	**Exposed flashings**	Flashings used in a variety of methods and locations. They can be an integral part of a system, such as skylight construction, or applied to provide protection between two dissimilar materials, including cap flashings, coping flashings, gravel stops, and edge flashings.

58	**Exterior Insulated Finish System (EIFS)**	A cladding and envelope system consisting of drainage, insulation board, base coat, and finish coat that resembles a stucco finish
59	**Face grouting**	See Bag grouting.
60	**Flashing**	A material or system installed to redirect water entering through the building skin to exterior. These are made from a variety of materials including noncorrosive metals and synthetic rubber sheet goods. Flashings are installed as backup systems for waterproofing or dampproofing systems. They are also used for waterproofing material transitions or terminations.
61	**Floor flashing**	Flashing used in conjunction with shelf angles supporting brick or other faced materials. See Flashing.
62	**Freeze-thaw cycle**	The cycle of water freezing, and subsequently thawing, related to building-related components.
63	**Glazing**	The installation of glass panes to cladding components using structural sealants.
64	**Gunite**	Pneumatically applied, small aggregate concrete or sand-cement mixtures, which are also referred to as shotcrete.
65	**Head flashing**	Flashing installed above window head detail, just below adjacent facing material that the window abuts. See Flashing.
66	**Hydration**	The Process of adding water to cement, sand and aggregate, to form a paste that cures, hardens, and shrinks to create the finished concrete or masonry product. During curing, water leaves this paste through a process called dehydration, which causes formation of microscopic voids and cracks in concrete. Once formed, these voids allow water absorption through the material.
67	**Hydraulic cement**	Frequently referred to as “hot patch” materials, because of the heat generated during their extremely fast cure cycle. These materials are used to patch substrate cracks and small areas experiencing water leaking under hydrostatic pressure.
68	**Hydrophilic**	The chemical properties that attract of absorb water.
69	**Hydrophobic**	The chemical properties for repelling or diverting water away from a material or substrate.
70	**Hydrophobic expansion systems**	Systems combining hydrophobic resins with synthetic rubber to produce hydrophobic expansion seals. The term hydrophobic refers to materials that swell in the presence of water. Thus, these materials require active water pressure to become effective water barriers.
71	**Hydrostatic pressure**	Pressure applied to envelop materials by various height of water at rests.
72	**Infiltration**	The inadvertent leakage of water, moisture, vapor or air into a building envelope.

73	**Isolation joints**	Joints that allow for any differential movement that will occur between two materials at junctures of these materials. For example, window frame perimeters require isolation joints when abutting other facade materials. These joints allow for differential movement at such locations as changes in structural components (e.g., spandrel beam meeting brick facing material).
74	**Joint grouting**	Application of cementitous grout to all surfaces of existing mortar joints, to repair the structure and waterproof effectively.
75	**Laitance**	A thin layer of unbonded cement paste on concrete substrate surfaces that must be removed before waterproofing material application.
76	**Latex sealants**	Typically, acrylic emulsions or polyvinyl acetate derivatives. Latex materials have limited usage for exterior applications. They are typically used for interior applications when a fast cure time is desired for painting.
77	**Mechanic**	A person trained in the proper and safe application of a particular waterproofing system.
78	**Membrane**	A flexible or elastomeric waterproofing material applied to a building envelope.
79	**Millage**	A unit for measuring the thickness of waterproofing products. One mil is equal to one-thousandth of an inch.
80	**Modulus**	A measure of stress to stain; measured as tensile strength, expressed as a given percentage of elongation in pounds per square inch (1b/in2). Modulus has a direct effect on elongation or movement capability.
81	**Moisture content Movement**	Movement caused by certain materials, particularly masonry substrates, swelling then subjected to wetting and subsequent drying. When this movement is calculated as an aggregate total of the entire façade area, it can be considerable.
82	**Negative waterproofing**	Below-grade waterproofing systems applied to the interior or negative side of a structure, away from direct exposure to groundwater.
83	**Organic**	A product comprised or manufactured of hydrocarbons, plants, animal, or their derivatives.
84	**Outgassing**	The deterioration of a closed-cell backer material that causes the sealant material to improperly cure and often leads to failures.
85	**Overlays**	Cementitious materials used for restoring deteriorated horizontal concrete substrates.
86	**Parapet flashing**	Flashing installed at the base of a parapet usually at ceiling level. It is also used on the roof side of parapets as part of roof or counter flashing. See Flashing.
87	**Parging**	The application of a cementitious material to a masonry or concrete substrate.

88	**Perm**	The rate of water vapor transmission through a substrate or material of one grain per hour per square foot per inch of mercury pressure difference.
89	**Permeability**	The ability of a waterproofing material or substrate to allow the passage of water vapor through itself without blistering.
90	**pH**	The chemical measurement of a substrate's alkalinity or acidity.
91	**Polymer concrete**	A modified concrete mixture formulated by adding natural and synthetic chemical compounds known as polymers. Although the priority chemical compounds (polymers) vary, the purpose of these admixtures is the same. They provide a dense, high-strength, low-shrinkage, and chemically and water-resistant concrete substrate.
92	**Polysulfides**	Materials Produced from synthetic polymers of polysulfide rubbers. Polysulfides make excellent performing sealants for most joint uses.
93	**Polyurethane**	Any of various polymers that are produced by chemical reactions formed by mixing di-isocynate with a hydroxyl, and are used in making flexible and rigid foams, elastomers, and resins. Many types of polyurethane are moisture-cured materials reacting to moisture in atmospheric conditions to promote curing. Other polyurethanes are chemically curing mixtures.
94	**Positive waterproofing**	Waterproofing systems applied to substrate side with direct exposure to water or a hydrostatic head of water.
95	**Pot life**	The length of time a waterproof material or system is workable or applicable after having been activated.
96	**Poultice**	An absorbent material such as tale or fuller's earth that is applied to the envelope substrate to remove dirt the staining. The poultice absorbs the staining and dirt into itself, and then is removed by water pressure cleaning.
97	**Primer**	A separate material, usually in liquid form, applied to a substrate before actual waterproofing system application. Primers enhance adhesion properties of the water proofing system.
98	**Protected membrane**	A membrane applied between a structural slab and topping slab or other top layer protection such as tile. The topping slab or protection slab protects the membrane from weathering and traffic wear. This is also referred to as a sandwich membrane.
99	**Protection Layer**	A layer of rigid or semi-rigid boards or sheets installed directly over a waterproofing system application to protect the waterproofing material from damage during back-fill or concrete placement operations.
100	**Reglet**	A formed or sawn groove in substrate (usually concrete) providing a transition point for two adjoining waterproofing systems.

101	**Remedial flashings**	Flashings typically surface-mounted and applied directly to exposed substrate faces. These can include a surface-mounted reglet for attachment. They do not provide for redirecting entering water. Only by dismantling a wall or portion thereof can remedial through-wall flashings be installed.
102	**Roofing**	That portion of a building that prevents water intrusion in horizontal or slightly inclined elevations. Although typically applied to the surface and exposed to the elements, roofing may also be internal or sandwiched between other building components.
103	**Sandwich membrane**	See protective membrane.
104	**Sealant**	A material applicable to exterior building envelope joints. Sealants are capable of with standing continuous joint movement during weathering conditions without failing.
105	**Shear movement**	Lateral movement in a substrate.
106	**Sheet expansion systems**	Systems manufactured from neoprene or hypalon rubber sheets. Joint expansion and contraction is made watertight by installing these materials in a bellows or loop fashion.
107	**Shelf angle**	Steel angle extrusion used over envelope openings to support masonry and precast and other cladding materials.
108	**Shelf life**	The maximum time that packaged and unopened waterproofing materials can remain usable.
109	**Shop drawings**	A drawing or written specifications prepared by the manufacturer or subcontractor that details the installation requirements for a particular building component. Shop drawings are submitted for review by the architect or engineer and then used to monitor quality of the finished product.
110	**Shore hardness**	A measure of resistance to impact using a durometer gage. This property becomes important in choosing sealants subject to punctures or traffic, such as horizontal paver joints. A shore hardness of 25 is similar to a soft eraser: a hardness of 90 is equivalent to a rubber mallet.
111	**Shotcrete**	See Gunite.
112	**Silanes**	Water repellents that contain the smallest molecular structures of all silicone – based materials. The small molecular structure of the silanes allows the deepest penetration into substrates. Silanes must have silica present in substrates for the chemical action providing water repellency to take place. These materials therefore are inappropriate for substrates such as wood metal, and limestone.
113	**Silicone rubber**	A water repellent manufactured from silicone elastomers that has a millage usually greater than other silicone-based sealers.

114	**Silicone water repellent**	water repellents manufactured by mixing silicone solids (resins) into a solvent carrier. Most manufacturers base their formulations on a 5 percent solids mixture, in conformance with the requirements of federal specification SSW-110C.
115	**Silicones**	Silicone sealants are derivatives of silicon polymers produced by combining silicon, oxygen and organic materials/ Silicones have extremely high thermal stability and are used as abrasives, lubricants, paints, coatings, and synthetic rubbers. See Sealant.
116	**Sill flashing**	Flashing installed beneath window or curtain wall sills. See Flashing.
117	**Siloxanes**	Silicone masonry water repellents produced from the CL-silane material. Siloxanes are manufactured in two types – ologomerous (meaning short chain of molecular structure) alkylalkoxysiloxanes and polymeric (long chain of molecular structure alkylalkoxysiloxanes. Most siloxanes produced now are oligomerous, due to a tendency for polymeric products to remain wet or tacky on the surface, attracting dirt and pollutants.
118	**Sodium silicates**	Materials that react with the free salts I concrete, such as calcium or free lime, making the concrete surface more dense. Usually these materials are sold as floor hardeners.
119	**Spall/spalling**	The crumbling or breaking off in small pieces of a concrete or masonry substrate, usually owing to freeze thaw cycles or deterioration (rusting) of embedded structural elements such as reinforcing steel.
120	**Structural movement**	Structural movement caused by the curing process in concrete during settlement and/or the structural loading of a building.
121	**Substrate**	Structure or envelope components to which waterproofing materials or systems are applied.
122	**T-joint system**	A sealant system reinforced with metal or plastic plates and polymer concrete nosing on each side of the sealant. This system derives its name from a cross section of the joint, which is in the shape of a T.
123	**Tackiness**	Stickiness of a waterproofing material's exposed surface after installation or during its final curing stage.
124	**Tensile strength**	The ability of a waterproofing material to resist being pulled or stretched apart to a point of failure.
125	**Thermal movement**	Movement, either expansion or contraction, caused by temperature changes.
126	**Tooling**	The means of finishing mortar or sealants that have been applied into envelope joints.
127	**Tuck-pointing**	The repair of existing mortar joints in masonry walls by removing the old material and filling with new mortar.
128	**Ultraviolet**	A form of light energy positioned in the spectrum of sunlight beyond violet, the limit of visible light, that is an especially detrimental weathering condition to above-grade waterproofing materials and envelope component.
129	**Viscosity**	The chemical property of liquid waterproofing materials to resist a change in shape.

130	**Watercleaning**	A building cleaning method incorporating water by pressure, soaking, or steam to remove dirt and pollutants from a substrate.
131	**Water penetration / Infiltration**	The circumstance in which water accesses the interior areas of a building envelope.
132	**Water-stops:**	Preformed materials placed between construction joints in separate concrete placements to prevent passage of water between the joints that forms at this intersection.
133	**Weep hole**	Opening in a masonry wall or sealant that allows the escape of water entering envelopes to the exterior. Exiting water is collected by a combination of damp-proofing and flashing materials.
Source: Handbook on Waterproofing by Michael Kubal		