

Glossary of Ready Mixed Concrete Terms



For general educational purposes, Triangle Ready Mix presents this glossary of terms that are used in the ready-mixed concrete industry. We hope that readers may find it informative and useful in learning more about ready-mixed concrete.

– A –

- Accelerator** A chemical which, when added to concrete, shortens the time of set and increases the early stages of hardening and strength development.
- Admixture** A material other than water, aggregates or hydraulic cement used as an ingredient of concrete. Most commonly used admixtures are chemical solutions that are carefully metered into concrete batches to lend or enhance a specific property of the concrete.
- Agent** A general term for a material that may be used either as an addition to cement or an admixture in concrete, for example, air-entraining agent. Sometimes called an additive.
- Aggregate** Granular material such as sand, gravel, or crushed stone which, when blended with cement & water, makes concrete.
- Air Content** The volume of the air voids in concrete, expressed as a percentage of total volume of the concrete.
- Air-Entraining Agent** An admixture which causes microscopic air bubbles to be incorporated in the concrete during mixing. Usually to increase its workability and freeze/thaw resistance.
- American Concrete Institute (ACI)** An organization responsible for writing and publishing codes and standards and guidance documents for concrete construction.
- American Society for Testing and Materials (ASTM)** An organization that writes and publishes test methods and standard specifications for a wide variety of materials.
- Axle Load** The portion of the gross weight of a vehicle transmitted to a roadway through the wheels supporting a given axle.

– B –

- Bag of Cement** A quantity of Portland cement equivalent to a loose cubic foot of the bulk material; Equals 94 lb. (42.6 kg) in the United States. Also called Sack of Cement.
- Barrel of Cement** A quantity of Portland cement equal to 4 bags or 376 lb. (170 kg).
- Batch** The materials in or the concrete produced from a single mixing cycle or load of concrete.
- Batch Plant** The equipment required to batch & mix concrete, including bins, silos, hoppers, conveyors, weigh-batchers, etc.
- Bleeding** Movement of mixing water to the surface of freshly placed concrete caused by the settling of solid materials.
- Bonding Agent** A coating applied to an existing surface to create a bond between it and a succeeding layer, for example, between a concrete subsurface and a terrazzo topping.

- Broom Finish** The surface texture obtained by stroking a broom over freshly placed concrete.
- Buggy** A wheeled hand or motor-driven cart, usually rubber tired, for transporting small quantities of concrete from hoppers or mixers to forms. Also referred to as a Georgia Buggy.
- Bull Float** A tool with a large, flat rectangular piece of aluminum, magnesium, or wood with a long handle. It is often used to smooth large areas of a slab immediately after the concrete is struck off with a screed.
- Bush-Hammer Finish** A decorative finish on concrete obtained by chipping off the surface mortar.

– C –

- Cement** See Hydraulic Cement and Portland Cement.
- Cement Balls** Tennis ball to volleyball-sized lumps of cement, sand and coarse aggregate that form in the truck drum during loading and mixing. Cement balls generally break free from the head of the drum and roll down the chute when concrete is discharged.
- Cement Content** Quantity of cement contained in a cubic yard or cubic meter of concrete, expressed as a weight. For example, 500 lb. per yd³ or 297 kg per m³.
- Cement, Expansive** A special cement, which causes concrete to expand slightly, rather than shrink, at an early age.
- Cement, High-Early Strength** Cement characterized by producing higher early strength in concrete than regular cement. Called Type III in the United States.
- Central Mixed Concrete** Concrete completely mixed in a stationary mixer and then transported to the jobsite.
- Chute** A rounded, sloping trough or tube for moving concrete from a higher to a lower point.
- Compressive Strength** The measured maximum resistance of a concrete specimen to compressive loading expressed in pound per square inch (psi). In the metric system Mega Pascal (MPa) are used to express compressive strength. A typical 6 inch (150 mm) diameter concrete cylinder, equivalent to roughly 3000 to 6000 psi (21 to 41 MPa), will support a load of 40 to 80 tons (36 to 72 metric tons).
- Concrete** A heavy, versatile building material made from combining coarse and fine aggregate, hydraulic cement and water.
- Concrete, Lightweight** Concrete made with lightweight aggregates, typically weighing 75 – 80% as much as normal weight concrete.
- Concrete, Plain** Concrete without any steel reinforcing bars.
- Concrete Plant Manufacturers Bureau (CPMB)** An organization of concrete plant manufacturers that publishes standards for concrete plants. Most concrete plants have a CPMB rating plate showing its maximum rated load size.
- Concrete Pump** A machine which conveys concrete to the point of placement via a pipeline and/or hose.
- Concrete, Reinforced** Concrete with embedded steel reinforcing bars
- Confined Space** A space that is: (1) difficult to enter or exit, (2) not designed for people to stay in, and (3) has certain hazards. A truck mixer drum is a confined space.
- Construction Joint** A joint where two adjacent placements of concrete meet. The joint may be keyed, bonded or reinforced.
- Contraction Joint** A formed, tooled or sawed groove in a concrete structure, floor slab, or pavement to regulate the location of cracks in the concrete.
- Conveyor** A continuous belt for moving materials.
- Core Test** A compression test on a concrete sample drilled from hardened concrete.
- Corrosion** Destruction, or deterioration of concrete reinforcement by chemical, electrochemical or electrolytic reaction. Often results in the rusting/deterioration of reinforcing steel and frequently cause by from de-icing salt applied to the concrete or salts from seawater in a marine environment.
- Crack** A complete or incomplete separation of the concrete into two or more parts caused by breaking or fracturing.
- Craze Cracks** Fine, shallow, random cracks or fissures in a concrete surface.
- Crazing** The development of craze cracks, or the pattern of craze cracks in a concrete surface.
- Cubic Meter** Unit of measure in the metric system. Equal to 1.3 cubic yards. Written as m³.

Cubic Yard	Unit of measure of concrete volume in the USA. Written as cu. yd. or yd ³ . Equal to 27 cubic feet or approx. 0.76 m ³
Curing	The maintenance of favorable moisture and temperature conditions for freshly placed concrete during its early stages so that the concrete can develop strength and other properties.
Cylinder, Concrete	A strength test specimen. Molded by placing concrete in a plastic, metal, or cardboard mold, which is usually two times its diameter in height. In the United States, 6 x 12 inch (150 x 300 mm) or 4 x 8 inch (100 x 200 mm) are the standard test cylinder size.

– D –

Darby	A hand-held straightedge, 3 to 8 ft. (1 to 2.5 m) long, used to smooth and level concrete in the early stage of finishing.
Drum Speed (rpm)	The rate of rotation of the mixer drum when used for charging, mixing, agitating or discharging concrete. Recommended drum speeds must be shown on the manufacturer's plate.
Drying Shrinkage	Contraction caused by moisture loss from hardened concrete sometimes resulting in cracks in the concrete occurring days, weeks, or months after placement.
Dusting	The appearance of powdered material at the surface of hardened concrete.

– E –

Early Strength	The strength of concrete as measured in the first three days or earlier after placement.
Efflorescence	A deposit of salts (usually white compounds) formed on a hardened concrete surface.
Entrained Air	Microscopic air bubbles intentionally incorporated in concrete (using an admixture) during mixing to improve freeze/thaw durability and workability.
Entrapped Air	Air voids in concrete which are not purposely entrained. Entrapped air voids are larger than entrained air bubbles and offer little protection from freeze/thaw cycles. They often result from incomplete vibration or compaction.
Expansion Joint	A separation between pavement slabs on grade, or between adjoining parts of a structure that to allow room for the concrete to move or expand. Usually filled with a compressible material.

– F –

False Set	Premature rapid stiffening of fresh concrete. False-setting concrete can usually be remixed without additional water to become workable again. See flash set.
Field-Cured Cylinder	Test cylinders cured in the same way as the concrete in the forms to indicate when the forms may be removed, when construction may continue or when the structure may be put in service.
Final Set	A degree of stiffening of concrete after initial set, such that it will support a weight to an established level. See initial set.
Finishing	The process of leveling, smoothing, compacting, and otherwise treating the surface of fresh concrete.
Flash Set	Premature rapid stiffening of fresh concrete. The concrete usually requires remixing with additional water to become workable again. See false set.
Flexural Strength	The ability of concrete to withstand bending. Measured by breaking a test beam molded from the concrete.
Float	A small, handheld tool, made of wood, aluminum or magnesium, used in finishing after placement and strike off of a fresh concrete surface.
Fly Ash	The fine ash resulting from burning coal in electric utility plants. Used as a mineral admixture or pozzolan in concrete. See pozzolan.

– G –

Georgia Buggy	A wheeled hand or motor-driven cart, usually rubber tired, for transporting small quantities of concrete from hoppers or mixers to forms.
Groover	Hand tool used to form grooves or joints in concrete slabs to control the location of cracks. Also called a jointing tool.
Gross Vehicle Weight	The total weight of a vehicle, e.g., the empty weight of a vehicle plus the weight of the payload.
GROUT	Pourable mix of cement & water, with or without aggregates. Used to fill cracks & voids or to prime concrete pumps.

– H –

Hairline Cracks Small, barely visible cracks in a concrete surface. See craze cracks.

Hardener A chemical applied to concrete floors to reduce wear and/or dusting.

Heavyweight Aggregate Aggregate of high density, such as iron or steel shot, used for making heavyweight concrete.

High-Strength Concrete Concrete with a 28-day design strength of 6000 psi (41 MPa) or greater.

High-Range-Water-Reducing Admixture A water reducing admixture that markedly increases the slump of fresh concrete and greatly enhances its flowability. Also called a superplasticizer.

High-Early-Strength Concrete Concrete made with a special cement(s) or admixture(s) that reaches a specified strength at an earlier age than normal concrete.

Hydration The chemical reaction between hydraulic cement and water.

Hopper A funnel-shape box or tank from which or through which material can be discharged evenly.

Hydraulic Cement A cement that sets and hardens via a chemical reaction with water, such as portland cement.

– I –

Initial Set A degree of stiffening of concrete, less than final set, such that it will support a weight to an established level, e.g., the weight of a finisher standing on a concrete slab. See final set.

– J –

Joint A physical separation or break in cast-in-place concrete.

– L –

Lightweight Aggregates Aggregate of low density such as expanded clay or shale, slag, pumice, etc. Used for making lightweight concrete

Lock Out Mechanically and/or electronically disabling a piece of equipment so that it cannot start or become energized. See, also, tag out.

– M –

Material Safety Data Sheet (MSDS) A document providing information on a product's potential safety or environmental hazards and precautionary measures for those who use the product. See SDS

Mineral Admixture A fine powdered material such as fly ash or slag cement which may be used to improve the workability, strength or durability characteristics of concrete, also called supplementary cementing material. See pozzolan.

Mixer Capacity The volume of concrete permitted to be mixed or carried in a truck mixer.

Mortar A mixture consisting of cement, water and fine aggregate.

– N –

National Ready Mixed Concrete Association (NRMCA) The national trade association in the US for ready mixed concrete producers, dedicated to advocacy, promotion, research, education and training.

– P –

Paste The portion of concrete consisting of cement and water.

Peeling Thin flakes of mortar breaking away from a concrete surface. See scaling.

Plastic Shrinkage Cracks Cracks which appear in fresh concrete soon after placing and finishing while the concrete is still plastic.

Preventive Maintenance (PM) Scheduled, periodic vehicle maintenance that follows a prescribed routine. Preventive maintenance includes inspecting, adjusting, testing, clamping, tightening, cleaning, draining, flushing, adding fluids and lubricants and replacing filters.

- Portland Cement** General, all-purpose, hydraulic cement. Manufactured by heating several minerals together in a large kiln and grinding the resultant cement clinker into a fine powder. The active ingredient in concrete that causes it to set and gain strength.
- Pozzolan** Naturally occurring or man-made materials which chemically react in concrete to form compounds with some cementing properties. A pozzolan, such as fly ash, is sometimes called a mineral admixture.

– R –

- Rebound Hammer** A non-destructive testing device used to quickly estimate the in-place compressive strength of hardened concrete.
- Reinforcement** Steel bars or wire mesh used in concrete to increase the load carrying capacity of a structure and/or to prevent cracks from widening.
- Retarder** An admixture which delays the setting time of concrete. Also called a set-retarder.

– S –

- Sand Streaks** A streak of exposed sand in a formed concrete surface, often due to inadequate mixing of the concrete
- Scaling** Flaking or peeling of the top surface of hardened concrete. See peeling.
- Screed** A tool, sometimes a long board, used for striking off the concrete surface.
- Sedimentation Pit (or pond)** A washout pit or series of pits, often with separate chambers or basins, designed to allow solids to settle out of concrete wash water. Sedimentation pits may be concrete lined structures or earthen ponds.
- Segregation** Separation of the coarse aggregate from the mortar portion of the concrete.
- Safety Data Sheet (MSDS)** A document providing information on a product's potential safety or environmental hazards and precautionary measures for those who use the product.
- Shrink-Mixed Concrete** Ready mixed concrete partially mixed in a plant mixer and then discharged into a truck mixer where its mixing is completed.
- Silica Fume** A very fine powdered material with particles about 100 times smaller than portland cement particles. Used for making high strength, low permeability concrete.
- Slag, ground** A by-product of iron mills, ground to a fine powder and used as a cementitious material in concrete. Also known as Ground Granulated Blast-furnace slag.
- Slump** A measure of the consistency of fresh concrete.
- Slump Cone** A cone shaped mold with an 8-inch (200 mm) base diameter, a 4-inch (100 mm) top diameter, and 12-inch (300 mm) height, used to test the slump of fresh concrete.
- Slump Meter** A gauge on the hydraulic system of the truck mixer which measures the approximate slump of the concrete in the revolving drum.
- Slurry** A mixture of water and cement.
- Spalling** Chipping or chunks of concrete fragments separating from a hardened concrete surface.
- Stamped Concrete Finish** The surface texture obtained by using a stamp to imprint a design in the surface of a concrete slab during finishing.
- Strength** Generic term for concrete's ability to resist loads without breaking.
- Superplasticizer** A high-range-water-reducing admixture (see definition above).

– T –

- Tagout** Placing a tag or notice on a piece of equipment indicating that it is out of service. See locked out.
- Topping** A layer of concrete placed to form a floor surface over a concrete base.
- Trowel** A steel, flat, hand tool used in finishing to achieve a smooth, hard, dense surface on a concrete slab.
- Trowel Finish** A smooth finish obtained by using a steel hand trowel or power trowel on a concrete slab.

Truck Mixed Concrete Ready mixed concrete mixed in a truck mixer; also called transit-mixed concrete.

Truck Mixer Manufacturer's Bureau (TMMB) Organization of truck mixer manufacturers that maintains standards for concrete truck mixers. Most truck mixers have a TMMB rating plate indicating compliance with these standards.

– U –

Unit Weight (density) The weight of concrete per unit volume. Usually expressed in pounds per cubic foot (abbreviated as lb./cu. ft., e.g., 150.0 lb./cu. ft. (kilograms per cubic meter e.g., 2400 kg/m³)

– W –

Water-Cement Ratio A ratio of the weight of water to the weight of cement, in concrete, expressed as a decimal, e.g., 0.45.

Water-Reducing Admixture A liquid admixture that increases the slump of fresh concrete without increasing the water content or maintains the slump with a reduced amount of water.
