Appendix G Glossary of Terms and Acronyms

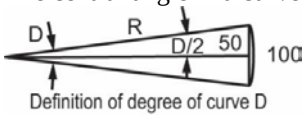
Term	Description
1-point standard Proctor maximum density	The density value of sand, expressed in pounds per cubic foot, obtained by applying the standard Proctor effort to compact an oven-dried sample of the sand in a standard Proctor mold as described in ASTM D698.
Abrasion	A wearing, grinding, or rubbing away by friction.
Absolute volume	The volume of the solid matter in the particles of a granular material; it does not include the volume of the voids between the particles or the open pores in the particles. The absolute volume of a material is computed as follows: Absolute volume $\frac{W_{material}}{(\text{Relative density}_{material} \times \text{unit weight of water})}$ For example, the relative density of a dry coarse aggregate is 2.65. The unit weight of water is 62.4 pounds per cubic foot. The absolute volume of a 90-pound sample of the aggregate is computed as follows: Absolute volume $\frac{90 \text{ lb}}{\left(2.65 \text{x} 62.4 \frac{\text{lb}}{\text{ft}^3}\right)} = 0.544 \text{ ft}^3$
Absorption	Absorption is the process by which a liquid is drawn into and tends to fill permeable pores in a porous material. It is expressed as a percentage of the dry weight of the material ($\text{Woven}_{oven-dry}$). For example, the oven dry weight of a sample of sand is 60 pounds and its absorption is 5 percent. The weight of the sample after it has absorbed all of the moisture it can absorb (W_{wet}) is 60 lb × 1.05 = 63 lb. Therefore, the weight of absorbed water is: Absorbed water = $A_{wet} - W_{oven-dry}$ = 63 lb – 60 lb = 3 lb
Accepted practice	A method or practice that is accepted as being viable within a particular sector of industry. For example, it is accepted practice to record ground line survey measurements for common earthwork to the nearest 0.1 foot.
ACI	American Concrete Institute.
Add-water	The water that is added to a concrete mix; the add-water and the aggregate free water contribute to paste
Adventitiously rootable	Plants that will easily root from a live hardwood cutting such as willow, cottonwood, and dogwood species.
Aggregate	Granular mineral material such as natural sand, manufactured sand, gravel, or crushed stone. Aggregate is one of three basic ingredients used to make concrete; the other two ingredients being water and cement.
Aggregated soil	Soil containing particles that bund to each other to form clusters of particles. The space between the aggregate clusters causes the soil to be permeable.
Aggressive water	Water containing extremely low concentrations of dissolved minerals. It will leach calcium from cement paste or aggregates. A continuous flow of aggressive water can attack and severely damage concrete.
Agricultural Acquisition Regulation (AGAR)	U.S. Department of Agriculture (USDA) acquisition regulations necessary to implement Federal Acquisition Regulation (FAR) policies and procedures within the Department.
Air blast	A wave of compressed air caused by blasting and capable of damaging nearby structures. Also known as overpressure.

Term	Description
Air channel	In a geomembrane installation, it is the open-air channel between the parallel welds of a dual track hot wedge weld that can be pressurized to test seam continuity.
Alkali-aggregate reactivity (AAR)	The production of expansive gel caused by a reaction between aggregates containing certain forms of silica or carbonates and the alkali hydroxides in concrete.
Anfo	An explosive made by mixing ammonium nitrate and fuel oil.
Apparent maximum density (AMD)	The maximum RCC density that can be attained by compaction of the RCC with the production roller.
Architectural and engineering (A&E) firm	A firm that provides architect and/or engineering services for tasks such as project design.
Artesian	A condition where water rises under pressure from a permeable stratum overlaid by impermeable rock.
Asymmetrical	The opposite of symmetrical. For example, most cross sections through a dam are asymmetrical because the area of the upstream portion of the cross section is different than the portion of the cross section downstream of the centerline.
Average end-area method	A method for computing the volume of material between two sections whereby the cross-sectional area of the material at each section is computed, averaged with that of the other section, and the average multiplied by the distance between the sections to determine the volume.
Average surface temperature (AST)	The AST is the average of RCC surface temperature values obtained at several locations. The AST is determined hourly during the time of exposure for the purpose of computing RCC joint maturity.
Backfill	Material placed over pipe embedment to fill the pipe trench.
Backscatter mode	The operating mode of a nuclear moisture density meter when the probe is not extended into the material being tested. Operating the meter in this mode returns a density value representing only the density of the material near the surface.
Basal end	The base or end that is inserted into the ground. It is opposite from the terminal end which is generally higher up on the original source plant.
Ballast	Material placed on top of installed geosynthetics to prevent displacement by wind during placement and at the end of a work period. Rolls of material and sand bags are the most commonly used for ballast.
Bedding	Material directly underneath the pipe. Bedding may be the foundation material or other material placed between the foundation and the pipe.
Bedding mortar	Bonding mortar that is placed between the foundation of an RCC structure and the RCC structure.
Best management practices (BMPs)	Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.
Beveled-end pipe	Pipe with ends that are angled rather than perpendicular to the axis of the pipe.

Term	Description
Bid bond	A written agreement between a bidder and a surety that assures fulfillment of the bidder's obligations to the contracting agency. If a bidder bids a job and then fails to fulfill his or her obligation to sign the contract, the contract is awarded to another bidder with attendant costs assured by the bid bond.
Bidders	See offerors.
Bilateral modification	Contract modification signed and mutually agreed upon by both the contracting officer and the prime contractor.
Blasting cap	A small explosive device used to detonate a larger, more powerful explosive such as anfo. 
Blind drain	A configuration of a foundation or toe drain in which the perforated pipe is omitted.
Blue tops	Short stakes that are set at the time of finish grading. They are set on cut or fill slopes with the top of the stake set at the specified line and grade. The tops are sometimes painted blue, or a colored plastic whisker is stapled to the side of the stake extending above the stake so that equipment operator can locate it if it is slightly covered during the grading operation. The equipment operator tries to skim the top of the blue top stakes with the equipment blade during the final grading operation. It is common for blue tops to be destroyed, and some may need to be replaced before completion of the grading operation.
Bonding mortar	A high-slump, high-cement content mix of sand, cement, water, and set retarding admixture that is used to increase bond and improve water tightness.
Borrow materials	Materials such as earthfill and rockfill that are borrowed from a designated area for the purpose of constructing something such as an earthen.
Bug holes	Small holes, usually no larger than a half-inch in diameter, caused by air bubbles being trapped in a formed concrete surface during placement and consolidation.
Brush-layers	A soil bioengineering technique that provides protection against surface erosion and shallow-seated slope failure. It involves the use of alternating layers of live cuttings and soil.
Brush mattress	A streambank soil bioengineering technique that includes a layer of live cuttings placed flat against the sloped face of the bank.
Brush revetments	A soil bioengineering technique used to stabilize streambanks. Brush and tree revetments are nonsprouting.
Brush spur	A brush spur is a long, box-like structure of brush that extends from within the bank into the streambed. They function very similarly to stone stream barbs.
Brush trench	A soil bioengineering technique that is a row of live cuttings that is inserted into a trench along the top of an eroding streambank, parallel to the stream. The live cuttings form a fence that filters runoff and reduces the likelihood of rilling.

Term	Description
Bulking	An increase in the volume of a quantity of moist sand compared to its volume in a completely dry or saturated condition.
Bulking moisture	The range of moisture at which bulking occurs. This range is commonly between 2 and 8 percent moisture (%M), but is dependent of the bulking characteristics of the particular sand.
Cement	See Portland cement.
Cementitious	Having the ability to cement or bind materials. Portland cement and pozzolan, such as fly ash, are cementitious materials used in Portland cement concrete mixtures.
Center of mass	Also referred to as "center of gravity," the center of mass is the unique point in an object where the mass to any side of the point is equal to that on the opposing side.
Centroid	The geometric center of a shape. The centroid of a triangle is the point where all of its medians intersect. The centroid is also the center of mass if the object is homogeneous.
Chief inspector	The quality assurance inspector who is appointed by the contracting officer by written appointment and is responsible for onsite quality assurance.
Clouding	Drawing the outline of a cloud around an item to call attention to emphasize the item
Clutches	The connectors that connect one sheet of sheet piling to the adjacent sheet.
Coarse aggregate	That portion of an aggregate retained on the 4.75-millimeter (No. 4) sieve.
Code of Federal Regulations (CFR)	The codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.
Codified	To restate or arrange in a systematic form such as the Code of Federal Regulations (CFR).
Coefficient of thermal expansion	Describes how the size of an object changes with a change in temperature.
Compaction moisture	Soil moisture at the time of compaction.
Competent person	Someone who is skilled in accessing excavations to determine if conditions are safe for workers and to verify compliance with industry safety standards.
Composite method	The combining of two or more methods, such as the average end-area and prismoidal methods, for computing volume quantities
Composite soils	A mixture of various soil types.
Concrete	A mixture of binding materials and coarse and fine aggregates. Portland cement, pozzolan, and water are commonly used as the binding materials for Portland cement concrete.
Conduit	Technical but interchangeable name for pipe.
Conservation assistance notes	Notes of significant assistance provided, alternatives considered, decisions reached, resource management systems or component practices installed, and follow-up provided. These notes are generally kept in the cooperator's folder that is filed in the local NRCS field office. The notes are made in chronological order on form NRCS–CPA–6, Conservation Assistance Notes. The notes are accompanied by a date and the initials of the NRCS employee providing the assistance. On jobs where an official job diary is not required, conservation assistance notes may be used for construction documentation.

Term	Description
Conservation engineering measure	Any measure requiring engineering design and construction expertise installed under programs administered by the NRCS.
Conservation measure	Any measure installed under programs administered by the NRCS.
Consistency of no-slump concrete	The property that determines the capacity of no-clump concrete to be placed and compacted successfully without harmful segregation. It embodies the concepts of compactability and, to some degree, moldability and cohesiveness. It is affected by the same factors that affect the consistency of conventional concrete: cement content, water content, the presence of chemical and mineral admixtures and the grading, particle shape, and relative proportions of coarse and fine aggregates. The Vebe consistency time determined by ASTM C1170 provides an indication of the consistency of no-slump concrete.
Construction contractor	The individual or firm responsible for the construction. This could be the owner, if the owner does the work without the aid of a contractor or a contractor hired or contracted by the owner, the sponsors, or the NRCS to do the work.
Construction General Permit (CGP)	A general permit that outlines a set of provisions construction operators must follow to comply with the requirements of the NPDES stormwater regulations. Construction operators (i.e., contractors and owners) permitted to operate under a general permit only have to file a notice of intent (NOI) that they intend to do so. Otherwise, if they were not permitted to operate under a general permit, they would have to obtain a specific permit for their construction site with specific requirements for preventing pollution discharge. Since most regulating authorities do not have the resources needed to efficiently address each individual construction site within their jurisdiction, having to develop specific permit requirements for each site would cause a backlog of permitting requests and unreasonable delays in the start of construction. Being able to operate under a general permit allows the contractor to implement the SWPPP and begin work within 2 days after filing the NOI.
Construction period services contract	A contract with an architect and engineering (A&E) firm to evaluate design-related changes that occur during the construction phase of a project that the A&E firm designed.
Contract	A legal agreement between an owner or contracting agency and a contractor that obligates the owner or contracting agency to pay for goods and services rendered to them by the contractor.
Contract specialist (CS)	Within the NRCS, an employee who is knowledgeable in contracting and who typically serves as contracting officer for federally awarded contracts and assists the State administrative officer with task associated with contracting local organization contracts.
Contract Work Hours and Safety Standards Act	Federal law that covers hours and safety standards in construction contracts.
Contracting local organization (CLO)	An organization that awards and administers a nonfederally awarded contract that is funded either partially or fully by NRCS funds.
CLO contract	Non-Federal contract awarded by a contracting local organization.
Contracting officer (CO)	Responsible for compiling the solicitation package, soliciting bidders, awarding the contract, and administering the contract. The CO has sole authority for obligating Federal funds on a federally awarded contract.

Term	Description
Contracting Officer's Representative (COR)	An NRCS employee, often the project engineer, who represents the contracting officer in technical matters of federally awarded contracts.
Contracting officer's technical representative (COTR)	A diminished term meaning the same as COR.
Contractor	See construction contractor.
Contractor quality control (CQC)	A planned system of activities whose purpose is to provide a level of quality that meets or exceeds contract requirements.
Cost-reimbursement contract	Also called cost-plus contract, a type of contract that reimburses the contractor for labor and materials plus an agreed-to, percentage-based amount for profit.
Crazing	The phenomenon that produces a network of fine cracks on the surface of concrete.
Curvilinear	Having a curved shape as opposed to being straight.
Davis-Bacon Act	1931 Federal law that established the requirement for paying prevailing wages on public works projects. All Federal Government construction contracts, and most contracts for federally assisted construction more than $2,000 must include provisions for paying workers onsite no less than the locally prevailing wages and benefits paid on similar projects.
Decibel (dB)	A unit used to express the intensity of a sound wave.
Degree of curvature (D)	The central angle in a curve subtended by a chord of 100 feet. 
Delay period	The elapsed time between the ignition of explosives in one hole and that of the following hole.
Denominator	Expression or number written below the line in a common fraction.
Dental concrete	Concrete that is used to fill holes and to contour surfaces in rock foundations. It may be conventional concrete with small aggregate. Maximum aggregate size allowed is dependent on the depth of fill.
Design report	A document written by the design engineer explaining specific items related to the design. The design report includes answers to questions that often arise during the construction phase of a project, thus it should be readily available to the project engineer and quality assurance inspector.
Differential foundation consolidation	Consolidation of a structure foundation that varies over the foundation area resulting in settlement of the structure at different rates or amounts.
Differential settlement	Generally refers to abrupt changes in settlement that can result in shear loads or can cause buried pipe joints to become disconnected.
Dig-downs	The removal of cover material to verify the thickness of cover or to check for damage to the underlying geosynthetic material.
Direct transmission mode	The operating mode of a nuclear moisture density meter when the probe is extended into the material being tested. Operating the meter in this mode returns a density value representing the density of the material located between the tip of the probe and the heal (rear end) of the gauge.
Dispersive soils	Soils that disperse easily and rapidly without significant mechanical assistance in water of low salt concentration.

Term	Description
Drum roller	See static or vibratory smooth steel drum roller.
Drummy rock	Rock that sounds hollow when stuck with a steel hammer.
Dusting	The formation of a fine powder on the surface of concrete caused by deterioration of the concrete
Eccentricity	For the purpose of computing a curve correction, eccentricity refers to the distance from the staked centerline to the center of mass of the cross section. If the section is symmetrical with respect to the staked centerline, the eccentricity is zero, and no curve correction is needed for the section. The value of the curve correction will increase as the eccentricity of a cross section located in a curve increases.
Electroconductivity	The potential for a substance to conduct electricity.
Embedment	Material placed around the pipe.
Emergency Watershed Protection Program (EWP)	An NRCS program that helps project sponsors and individuals implement emergency recovery measures to relieve imminent hazards to life and property created by a natural disaster that causes a sudden impairment of a watershed.
End coupon	A small specimen of geosynthetic material cut from the ends of the seam to verify seam quality as seaming progresses.
Engineering notes	Data of measurements taken and descriptive information recorded by a surveyor to document topography, staking of engineering measures, and the line and grade of measures during and after completion of construction.
Erosion	With respect to concrete, the progressive disintegration of the concrete by abrasion or cavitation of gases, liquids, or solids flowing against the concrete surface.
Executive order	An order issued by the President of the United States. An order may have the force of law when made in pursuance of certain Acts of Congress, when those acts give the President discretionary powers.
Extrudate	Molten resin discharged from an extrusion welder used for repair or bonding of geomembranes.
False set	The rapid development of rigidity in a Portland cement paste, mortar, or concrete without the evolution of much heat, in which rigidity can be dispelled and plasticity regained by further mixing without addition of water. Also referred to as “premature stiffening,” “hesitation set,” “early stiffening,” and “rubber set.”
Falsework	Any temporary structure used to support concrete formwork.
Fascine	A soil bioengineering technique commonly used to provide stabilization to the toe of streambanks. A fascine is a long bundle of live cuttings bound together into a rope or sausage-like bundles.
Federal Acquisition Certification for Contracting Officer Technical Representatives (FAC–COTR)	A certification process that requires the completion of specific training in an effort to ensure a COTR is competent to perform the tasks for which he or she is appointed.
Federal Acquisition Regulations (FAR)	First effective in 1984, the FAR is the primary regulation for use by all Federal agencies in their acquisition of supplies and services with appropriated funds.
Federal construction contract or Federal contract	A contract awarded and administered by a Federal agency.

Term	Description
Federal Register (FR)	Published by the Office of the Federal Register, National Archives and Records Administration (NARA), the Federal Register is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as Executive orders and other presidential documents.
Federally awarded contract	A contract awarded by a Federal agency.
Feeler gauge	A thin flexible piece of metal that can be slipped between a bell and spigot to verify that the gasket remained in its groove after the pipes were pushed together.
Filter compatible	A condition where water can pass through two different materials without eroding and transporting either material into the other material. One material filters the water to prevent particles from the other material from being transported beyond the material that filters the water.
Fine aggregate	That portion of an aggregate passing the 4.75-millimeter (No. 4) sieve and retained on the 75-micrometer (No. 200) sieve.
Fines	Granular materials smaller than the 75-micrometer (No. 200) sieve. In a concrete mix fines include cement, pozzolan, and naturally occurring or manufactured fine materials in the aggregates.
Finish grading	The act of grading earth to the specified line and grade.
Fixed-price contract	A type of contract that provides for a fixed price with minor price adjustments allowed for quantity variations and all other adjustments made by contract modification. Requires well-written specifications and detailed drawings, when applicable, so that costs can be estimated with reasonable accuracy. Places minimum administrative burden on the contracting parties, but subjects the contractor to the maximum risk arising from full responsibility for all cost escalations.
Flared bell	A bell end that has a larger outside diameter than that of the pipe.
Flowable fill	A mixture of soil, cement, and water that is proportioned to have a flowable consistency. Flowable fill (also known as controlled low strength material or CLSM) is low strength material that is stronger than compacted soil, but can be easily excavated with common construction equipment.
Fly ash	Residue from coal combustion which is filtered from flue gases. Fly ash is used as a pozzolan or cementing material in concrete.
Forced-air burning	A method of burning materials whereby air is forced into the fire to increase the temperature and consume particles that would otherwise become airborne if the materials were burned at a lower temperature.
Foreman	A person employed by a contractor to supervise a work crew.
Foundation	The material in the bottom of the trench. The foundation soil may be covered by bedding material, compacted, or left undisturbed depending on the requirements of the project.
Free face	When blasting, the unconfined face or surface.
Free water	Water in a concrete mixture that is available to help form the paste. Water that is absorbed into the aggregates is not a part of the free water in the mix.
Fugitive dye	A dye that is mixed into concrete curing compound that slowly disappears after a few hours.
Full-time inspection	Inspection of construction that requires the full-time presence of a quality control inspector to observe one or more construction operations and/or

Term	Description
	perform tests and take measurements as needed to verify and document contract compliance.
Geocomposite drain	A drainage system or component of a drainage system generally composed of a plastic material sandwiched between geotextile materials. The plastic between the geotextile is shaped with bumps or ridges to create an open path to allow water to flow between the geotextile materials. The geotextile materials serve as filters to prevent soil from flowing through them.
Geologic investigation	Investigation of site geology, which typically includes borings and excavations to determine geologic characteristics that are important for the designer to know when designing a project. The geologic investigation also involves sampling soils to be analyzed by a soil mechanics laboratory.
Geologist	The individual responsible for the geologic investigation and for providing geology related assistance during the project construction phase.
Geology report	Report of a geologic investigation.
Geotechnical	A branch of civil engineering concerned with the engineering behavior of earth materials. A geotechnical design looks at various engineering soil properties to determine the adequacy of foundations and earthfills and implement design features that will allow the foundation and earthfills to perform as intended.
Government representative (GR)	A government employee who represents the government for technical matters on non-Federal contracts such as contracting local organization contracts.
Grid rollers	A heavy steel drum characterized by openings configured on a grid pattern. It can be either towed or self-propelled and generally is attached to a frame on which additional weight (ballast) can be applied. Grid rollers are used for compacting rockfill and may be useful in breaking up soft rock.
Ground slag	Nonmetallic hydraulic cement developed in a molten condition simultaneously with iron in a blast furnace and subsequently ground to a fine powder. Ground slag is also referred to as ground granulated blast-furnace slag and is used as a pozzolan or cementing material in concrete.
Hazard class	Classification of a dam according to the potential impact a dam failure (breach) or errant operation (unscheduled release) would have on upstream and/or downstream areas or on locations remote from the dam. The existing classification systems are numerous and vary within and between both the Federal and State sectors. Although differences in classification systems exist, they share a common thread: each system attempts to classify dams according to the potential impacts from a dam failure or errant operation, should it occur.
Heat of hydration	The heat that is generated from the chemical process that occurs when cementitious materials combine with water.
High-hazard dam	A dam that could cause a significant loss of life or property if it were to fail.
Hub	With respect to surveying, a hub is a short stake driven in the ground to define a point. Hubs are generally made from 2-inch by 2-inch wood that is sharpened to a point on one end to facilitate driving into the ground.
Honeycomb	The condition of concrete where the coarse aggregates are not completely encapsulated by mortar resulting in voids in the concrete.
Honeycombing	See honeycomb
Hydration	The chemical reaction between hydraulic cement and water that produces calcium-silica-hydrate (CSH) and free lime (CaO). CSH is the hardened paste

Term	Description
	that binds the aggregates together to give concrete its strength. CaO is a byproduct of hydration that can leach from the concrete or can bind with a pozzolan to create more CSH
Hydraulic cement	Cement, such as Portland cement, that is set and hardened by reacting chemically with water.
Hydraulic fracture	A crack that forms in a cohesive soil due to water pressure. Hydraulic fracturing is one mechanism that can lead to seepage and possible failure in earthen dams.
Hydrostatic pressure	The pressure exerted by a fluid. Hydrostatic pressure increases in proportion to depth measured from the surface because of the increasing weight of fluid exerting downward force from above.
Incentive contract	A fixed price or cost-reimbursement contract designed so that the profit or fee payable to the contractor is tied to contractor performance.
Index-tests	Tests that indicate the characteristics of a substance. Concrete index-tests are performed in advance of the concrete reaching its hardened state. Concrete index-tests include tests for: air content, temperature, slump, and unit weight. These index-tests predict the quality of the hardened concrete while it is still plastic in order to avoid placing concrete that has a high probability of failing specification requirements and to document the condition of the concrete at time of placement.
Industry standard tolerances	In construction, a variation in a dimension, construction limit, or physical characteristic of a material that is considered acceptable within a particular sector of the construction industry. When construction tolerances are not specified in a construction contract, industry standard tolerances are generally employed unless otherwise noted.
Initial set time	Generally speaking, the elapsed time between batching a concrete mix and when the mix stiffens to the point that it is no longer plastic.
In situ	The natural or original position or place (e.g., An in situ soil is one that has not been disturbed in any way to alter its natural physical or chemical characteristics.).
In situ soil	The native soil through which the trench is dug.
Inspector	See quality assurance inspector.
Internal erosion	The erosion of soil from within an embankment. Left unchecked, internal erosion leads to piping.
Intimate contact	As related to geosynthetics or erosion control blankets, total coverage and complete contact with the subgrade.
Invitation for bid (IFB)	An invitation to contractors or suppliers, through a bidding process, to submit a proposal on a specific project or product or service to be furnished.
Joint maturity	The product of the time of exposure (TE) and the average surface temperature (AST) of an RCC bonding surface or joint. Joint maturity is expressed in degrees Fahrenheit-hours (°F-h). If the surface is exposed for 4 hours and has an average surface temperature of 100 °F during those 4 hours, the joint maturity is 400 °F-h.
Labor-hour contract	Contract where the owner supplies the materials and pays a fixed rate of compensation that includes overhead and profit for a negotiated number of labor hours or days.

Term	Description
Laitance	A layer of weak material derived from cementitious material and aggregate fines carried to the surface by bleed water or separated from the concrete and deposited on the concrete surface. Concrete with laitance on the surface will not bond well with subsequently place concrete.
Lath	Thin pieces of wood approximately 1/4 inch by 1 1/2 inches by 3 feet driven into the ground near a hub or stake to identify the location of the hub or stake. Survey lath are generally marked with the station location, slope, cut or fill, and offset distance if the lath references an offset stake.
Letter contract	Preliminary contractual document that, with or without specifying the agreed to price or amount, authorizes a contractor to begin immediately with the job or project. A letter contract obligates the owner to either prepare the final (definitive) contract within the specified time frame, or to reimburse the contractor for costs incurred under the letter.
Lift thickness	The thickness or depth of one lift or layer of material such as earthfill or roller-compacted concrete. The term is synonymous with layer thickness, but is generally used to describe the layer (lift) that is being installed during the course of lifting the structure up one layer at a time.
Live brush sills	A soil bioengineering technique that involves rows of live cuttings inserted into an excavated trench. This treatment is intended to promote sediment deposition and can function as erosion stops.
Live load	Loading caused by vehicles trafficking over a pipe, bridge, earth, or other structure.
Live stakes (also referred to as live pole plantings)	A soil bioengineering technique that involves the use of dormant stems, branches or trunks of live woody plant material inserted into the ground with the purpose of getting them to grow.
Locus of break	The location on the test specimen that shows where the failure occurred when strength testing geosynthetics.
Low Vebe mix	A relative term describing a concrete mix with no slump and a low Vebe consistency. Low Vebe mix is not specifically defined by a range of Vebe consistency times, but generally is viewed as having a Vebe consistency time of 20 seconds or less.
Mandrel	When used with a vibratory hammer to install sheet piling, a mandrel is a steel device that conforms to and is attached to the top of sheet piling. A vibratory driving hammer is then attached to the mandrel. The mandrel helps distribute the driving energy to prevent the energy from being concentrated at points on the piling where it can damage the piling.
Manufactured fines	Also called crusher fines. Fine particles that are finer than the No. 200 sieve size that are produced when rock is crushed to make coarse aggregate or road base material.
Manufactured sand	Sand that is made from crushing rock.
Maximum dry density	The maximum density of a soil that can be attained by a specific compaction effort. The maximum dry density occurs at optimum moisture. On a Proctor curve, the maximum dry density and optimum moisture define the apex of the curve.
Maximum size	The smallest sieve opening through which the entire amount of aggregate is required to pass.

Term	Description
Maximum weight of explosives per delay	Weight of explosives ignited at any one time during the blasting operation. The minimum allowable delay is generally 8 milliseconds (ms) for the delay period to be effective at reducing ground motion or air blast.
Mechanical sieve analysis	A process where granular materials (sands and gravels) are separated into various particle sizes by pouring them through a series of sieves that are set on top of each other with the larger opening sieves above the smaller opening sieves. The sieves are placed in a mechanical shaker to ensure all of the material that will pass any sieve will be mobilized and separated so that it falls through to be retained on the smallest possible sieve opening.
Median	The median of a triangle is a line segment joining a vertex to the midpoint of the opposing side.
Mix uniformity	A term describing the relative homogeneous character of a concrete mix. A mix has good mix uniformity if it has evenly dispersed constituents within each batch and from batch to batch.
Modulus of elasticity	Aka elastic modulus or Young's modulus describes the tensile elasticity or tendency of an object to deform (stretch). It is calculated by dividing the tensile stress by the tensile strain.
Mortar	A mixture of cementitious materials, fine aggregate, and water. Mortar typically contains admixtures for retarding set. The term is also used to describe that portion of a concrete mix passing the 4.75-millimeter (No. 4) sieve.
Mudding in	Backfilling an installation hole around an installed live cutting with a mixture of soil and water to achieve good soil-to-stem contact.
Multitired pneumatic roller	Heavy self-propelled construction equipment used in earthwork and road construction for compacting earth or road materials. It contains an axle and gang of tires on the front and back with the back tires being offset or spaced to cover ground that is not covered by the front tires. In operation, the roller imparts a downward force and kneading action on the material being compacted.
National Pollutant Discharge Elimination System (NPDES)	As authorized by the Clean Water Act, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.
Neat cement grout	A mixture of cement and water used to improve the bond between new concrete and previously placed concrete and for grouting cracks or cavities such as those in rock foundations.
Nominal laying lengths	Length used for purposes of general identification; the actual length will be approximately the same as the nominal length, but need not be exactly the same; for example, the length of a pipeline constructed with 10 sections of bell and spigot jointed pipe having a nominal laying length of 20 feet will generally be greater than 200 feet because of the addition of the length of the joint gap between each section.
Nominal maximum size	The smallest sieve opening through which the entire amount of aggregate is permitted, but not required, to pass. Ninety-five percent is required to pass, but five percent of the aggregate may be retained on the nominal maximum size sieve.
Nondestructive tests	Tests that do not require damaging the hardened concrete.
Nonfederally awarded contract	A contract awarded by an entity other than the Federal Government such as a contracting local organization.

Term	Description
Notice of Intent (NOI)	Constitutes notice submitted to a permitting authority that an entity intends to be authorized to discharge pollutants to waters of the United States under the EPA's Construction General Permit (CGP). The CGP authorizes stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than 1 acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system (MS4) leading to surface waters of the United States subject to certain conditions.
Notice of Termination (NOT)	A notice submitted to a permitting authority in order to terminate coverage. A permittee may submit a stormwater pollution prevention-related NOT when: • Disturbed soils at the construction site have finally been stabilized and temporary erosion and sediment control measures have been removed (or will be removed at an appropriate time). • Stormwater discharges have been eliminated, or • The permittee is no longer an operator of the site.
Notice-to-proceed	A written document giving a contractor permission to begin work and requiring that work begin by a specified date.
NRCS	Natural Resources Conservation Service
NRCS Acquisition Regulations (NRCSAR)	NRCS acquisition regulations necessary to implement FAR policies and procedures within the NRCS.
NRCS Supplement to OSHA, Parts 1910 and 1926	A document included in NRCS contracts and some contracting local organization (CLO) contracts which requires measures that address construction safety in addition to those measures required by OSHA Parts 1010 and 1026.
Numerator	Expression or number written above the line in a common fraction.
Off-the-shelf	A product that is commonly provided by a supplier. A concrete mix design that is commonly sold by a particular batch plant is considered one of the plants off-the-shelf mix designs.
Offerors	Commonly called bidders, contractors who bid (offer) to do construction, provide a service, or otherwise provide a product.
Offset stake	A stake set some distance from a toe stake or other stake that will likely be destroyed during construction. The offset stake can be referenced to reestablish the destroyed stake or to check constructed line and grade. For example, when laying out a dam, a slope stake (toe stake) will be placed at the point where the dam will intersect the ground. An offset stake will generally be placed 20 feet (or other distance) from the toe stake. The offset stake will be accompanied by a lath marked with the station number and other pertinent information.
Optimum moisture	The moisture at which maximum density of a soil can be attained by a specific compaction effort. On a Proctor curve, the optimum moisture and maximum dry density define the apex of the curve.
OSHA	Occupational Safety and Health Administration.
Packer	Material inserted at the bottom or at various locations in a grout hole that prevents the grout from flowing beyond the packer.
Paste	The portion of a mortar or concrete mix that will pass through a 75-micrometer (No. 200) sieve. Paste is made up of free water, cement, pozzolan, and aggregate fines.

Term	Description
Payment bond	Deposit or guaranty submitted by a prime contractor as a surety that, upon contract completion, all sums owed by the contractor to employees, suppliers, subcontractors, and other creditors, will be paid on time and in full.
Peak particle velocity (ppv)	The maximum velocity at which a particle of ground vibrates when excited by a seismic wave.
Peal test	A destructive test for geosynthetics in which two seamed sheets on the same side of the seam are pulled in tension to test the bond strength of the material.
Percent moisture (%M)	The moisture content of a substance expressed as a percentage of the dry solids in the substance. For example, the percent moisture in 105 pounds of sand containing 5 pounds of water is 5 percent computed as per the following equation: $\%M = \frac{W_{water}}{W_{solids}} \times 100$ $= \frac{5\ lb}{100\ lb} \times 100$ $= 5\%$
Performance bond	Written guaranty from a third-party guarantor (usually a bank or an insurance company) submitted to a principal (owner) by a prime contractor upon winning the bid. Performance bond ensures payment of a sum (not exceeding a stated maximum) of money in case the contractor fails in the full performance of the contract.
Permittee(s)	Person(s) or entities operating under a valid permit. The owner and contractor on a construction site are permittees who are required to obtain permits for construction from permitting authorities.
Permit notice	A poster issued by a permitting authority documenting construction work is being performed under permit issued by the same authority.
Petrographic analysis	In concrete, a detailed analysis of concrete or its constituents typically made by close examination using a microscope. The examination is made for the purpose of determining the concrete or concrete constituents' physical and/or chemical characteristics.
Pin-flag	A stiff piece of wire 12 to 18 inches in length with a colored flag affixed to one end. Pin-flags are pushed into the ground to mark a point.
Piping	The process of embankment failure caused by unchecked internal erosion where enough material is eroded away to result in a catastrophic failure.
Planimeter	A device for tracing an area perimeter to determine the area within the perimeter.
Plant-based streambank soil bioengineering	A streambank soil bioengineering approach that relies on riparian plants to provide long term strength to the bank. These treatments are applied to sites where the goal is to slow the dynamics of the system to a more natural rate. A successful project is a flexible project. A plant based treatment is characterized by reliance on treatments such as live clumps, fascines, vertical bundles, brush barbs, brush revetments, and live cuttings.
Plastic concrete	Concrete that has not made its initial set and can still be consolidated and molded.
Plastic shrinkage cracking	Numerous shallow cracks in the surface of concrete caused by shrinkage of the surface due to drying.

Term	Description
Pneumatically	Forced through a conduit by air pressure.
Point-loading	Load concentration at a point that can result in damage to a pipe or other structure.
Polymeric	As related to geosynthetics, polymeric refers a material being composed of synthetic polymer molecules with a structure that creates the strength and durability of the geosynthetic.
Portland cement	Hydraulic cement composed of alumina, silica, lime, iron oxide, and magnesium oxide burned together in a kiln and finely pulverized. Portland cement is used as the primary cementitious material in mortar and concrete.
Pozzolan	A substance that has little or no cementitious properties on its own, but when combined with Portland cement forms compounds possessing cementitious properties. Fly ash is the most widely used pozzolan.
Preconstruction conference—also known as postaward conference	The first meeting between the owner and contractor following the issuance of the contract. The conference is used to develop a positive working relationship and generate a discussion that centers on the procedures the contractor plans to implement to meet the terms and conditions of the contract. Individuals representing the contractor and subcontractor(s), owner (NRCS or sponsors), major suppliers, and others who will be working together in the execution of the contract should be present.
Prime contractor	The entity responsible for constructing the project in accordance with the terms and conditions of the contract.
Prismoidal method	A method of computing volume that employees the prismoidal formula and is commonly used in computer volume computation programs. Data for computing volumes by the prismoidal method may be obtained by surveying random points that define the limits of the volume being computed. It is not necessary to obtain data on a grid or in another systematic pattern as it is for the average end-area and grid methods.
Production roller	Defined in NRCS Construction Specification 36, Roller Compacted Concrete, as a single or double drum, large, self-propelled vibratory roller. Production rollers are used in open areas to compact RCC without damage to the structure, forms, foundation, or appurtenances. Production rollers are distinguished from special compaction rollers, which are smaller than production rollers, and are used in confined areas and adjacent to forms, the foundation, and appurtenances.
Program manager	The NRCS employee responsible for ensuring that program requirements are met throughout all phases of a project.
Progress payments	Payments to the contractor for work accomplished within a specific period. Progress payments are made upon submission of a proper invoice by the contractor to the CO. They are typically made on a monthly basis to compensate the contractor for work performed within the invoice period occurring after the date when the previous invoice was submitted.
Project engineer	The engineer who is responsible for overseeing the technical aspects of a contract.
Project manager	A person employed by the contractor to oversee and manage the entire project operation.
Proof roll	Driving over a foundation with a heavy roller or other equipment to identify poorly compacted or otherwise soft areas with low bearing strength.

Term	Description
Proposal	Solicited or unsolicited submission by one party to supply (or buy) certain goods or services to (or from) another. Unlike an offer, a proposal is not a promise or commitment but, if accepted by the other party, its proposer is expected to follow through and negotiate for the creation of a binding contract. If submitted in response to a request for proposals (RFP), it normally constitutes a bid.
Pug mill	A type of mill that mixes with a kneading action. A pug mill is used to mix stiff mixtures such as soil cement and RCC.
Quality assurance inspection	Inspection made by a quality assurance inspector for the sole benefit of the owner and for the purpose of ensuring and documenting that contractor quality control is functioning as specified and the specified product quality is being attained and documented.
Quality assurance inspector	The person or persons responsible for quality assurance inspection.
Quality assurance personnel	NRCS employees and others responsible for performing construction quality assurance duties.
Quality assurance plan (QAP)	A plan that documents requirements for assuring a quality project is constructed.
Quality control manager (QCM)	A person employed by the contractor to manage the contractor quality control program.
Quality control personnel	Individuals employed by the construction contractor who are responsible for performing construction quality control duties.
Radially	Radiating from or converging to a common center. Cross sections in a curved spillway or dam are surveyed (or taken) radially. When volumes are computed using the average-end-area method on earthfills or excavations that are curved, the end areas are oriented radially.
Ratification of a change	Approval of an unauthorized commitment by an official at headquarters level who has the authority to do so.
Record-tests	Test made for contract/engineering documentation. Rejection or acceptance may be based on results of record-tests.
Rectangular prism	A solid three-dimensional object that has six faces that are rectangles.
Reference standards	ASTM, AASHTO, AWWA, and any other standard referenced in the specifications. Reference standards are considered a part of a specification with the same weight and effect as if the full text of the standard where included in the specification.
Relative density	The ratio of the density of a material to the density of water; it is also referred to as specific gravity. The density or unit weight of water is 62.4 pounds per cubic foot. Cement has a relative density of 3.15. Thus, the density of cement can be computed as follows: $\text{Density of cement} = 3.15 \times 62.4\ \text{lb/ft}^3$ $= 196.6\ \text{lb/ft}^3$
Request for proposal (RFP)	Publicly advertised document used in sealed-bid procurement procedures through which a purchaser advises the potential suppliers of (1) statement and scope of work, (2) specifications, (3) schedules or time lines, (4) contract type, (5) data requirements, (6) terms and conditions, (7) description of goods and/or services to be procured, (8) general criteria used in evaluation procedure, (9) special contractual requirements, (10) technical goals, (11) instructions for preparation of technical, management, and/or cost proposals. Suppliers respond with a detailed proposal, not with only a price quotation.

Term	Description
	Provides for negotiations after sealed proposals are opened, and the award of contract may not necessarily go to the lowest bidder.
Request for quotation (RFQ)	Document used in soliciting price and delivery quotations that meet minimum quality specifications for a specific quantity of specific goods and/or services. Usually not advertised publicly; commonly used for (1) standard, off-the-shelf items, (2) items built to known specifications, (3) items required in small quantities, or (4) items whose purchase price falls below sealed-bidding threshold. Suppliers respond to a RFQ with firm quotations, and generally the lowest priced quotation is awarded the contract.
Riparian planting zones	Riparian planting zones are the areas between aquatic and upland habitats.
Roller compacted concrete (RCC)	Concrete compacted by smooth-drum vibratory rollers that, in its unhardened state, will support a roller while being compacted.
Roller compaction	A process for compacting concrete using a roller, often a vibrating roller.
Safety officer	A competent supervisory employee of the contractor who is satisfactory to the contracting officer to administer the safety program.
Sand relative density	The ratio of the difference between the void ratios of sand to the difference between its void ratio in the loosest and densest states. In the laboratory, the maximum void ratio (minimum density) is determined according to ASTM D4254, and the minimum void ratio (maximum density) is determined according to ASTM D4253. If the in-place density of sand is in the exact middle between the minimum and maximum density, the density is at 50 percent relative density. For example, if the minimum density of a particular sand is determined to 80 pounds per cubic foot and the maximum 120 pounds per cubic foot, in-place sand with a density of 100 pounds per cubic foot would be at 50 percent relative density.
Sand streaking	The formation of sand pockets on a formed concrete surface that is caused by paste leaking from the form leaving behind aggregates containing little paste.
Saturated surface-dry (SDD)	The condition of an absorptive material where the material is saturated, but its surface is dry. Saturated surface dry aggregate neither absorbs water from nor contributes water to the paste in a concrete mixture.
Set	The condition reached by a cement paste, mortar, or concrete when it has lost plasticity to an arbitrary degree.
Sheepsfoot roller	A cylindrical steel drum containing knob-headed spikes, used for compacting earth. Sheepsfoot rollers are generally towed behind heavy construction equipment and compact the soil by downward force and penetration, which imparts a kneading effect on the soil.
Significant safety violation	Violations of laws and regulations or a disregard for safety and health standards that lead to conditions that cause an imminent danger of serious injury or loss of life of anyone—the owner, contractor personnel, NRCS personnel, or the public.
Site showing	Referred to in the FAR as a “pre-bid” conference, the site showing is a meeting held after the solicitation has been issued and prior to the bid opening or negotiation for the purpose of informing prospective bidders/offerors and suppliers of the nature of the work to be accomplished and to show the physical layout of the site. The site showing is generally conducted by the CO with assistance from the COR/GR. The QA Inspector should also attend the site showing.

Term	Description
Slurry concrete	Concrete that contains small maximum size aggregate and has a high slump. It may be made without gravel and contain a superplasticizer so that it can flow into small cracks with limited or no segregation.
Small Watershed Program	A program authorized by the Watershed Protection and Flood Prevention Act (Public Law 83–566) that was signed into law on August 4, 1954. The program authorizes NRCS to cooperate with State and local agencies to carry out works of improvement for soil conservation and for other purposes including flood prevention; conservation, development, utilization and disposal of water; and conservation and proper utilization of land.
Soil mechanics engineer	Engineer who, among other tasks, performs or oversees the performance of tests to determine the relevant chemical and physical properties of the foundation soils and soils used to build a project.
Soil mechanics report	Report of chemical and physical properties of the foundation soils and soils used to build a project.
Solicitation	Any request to submit offers or quotations to the contracting agency. Under sealed bidding solicitations are called invitations for bids. Under negotiated procedures solicitations are called requests for proposals.
Solicitation package	Commonly called bid package, a full set of bidding documents including terms and conditions of bidding and of the ensuing contract.
Solution cavities	Cavities formed in certain rocks in which percolating solutions have filled with minerals; cavities formed in certain rocks, such as limestone rock, where portions have been dissolved by percolating waters.
Specific gravity	The ratio of the density of a material to the density of water (see relative density).
Sponsoring local organization (SLO)	A local unit of government which sponsors a project; responsibilities include acquisition of land rights needed to construct and maintain the works of improvement and the operation and maintenance of the works of improvement.
Springline	The imaginary line drawn horizontal across the midpoint of a pipe.
Stake	A 1-inch by 2-inch piece of wood 12 to 18 inches in length sharpened to a point and driven into the ground to identify a point.
Standard dimension lumber	Lumber that is sawn and planed smooth to standard sizes nominally ranging from 1 to 5 inches thick and 4 to 12 inches wide. After it is sawn, the sawn surfaces are planed smooth resulting in standard dimensions that are less than the sawn dimension. For example, a 2 X 4 is 1 ½ inches by 3 ½ inches after it is planed smooth.
Standard Proctor Curve	A curve that is developed by plotting the density of a soil that is compacted by the standard Proctor effort at various soil moisture contents as described in ASTM D698.
Standard Proctor effort	The compactive effort that is attained by implementing the method described in ASTM D698. The energy imparted by the standard Proctor effort is approximately 12,400 foot-pounds per cubic foot.
State administrative officer (SAO)	An NRCS employee who issues letters of appointment to government representatives and inspectors; provides guidance to the contracting local organization (CLO) and reviews the CLO solicitation; reviews and concurs in the approval of bonds, contractor, modifications, payment requests, final acceptance, and any other item on a CLO contract related to expending Federal funds.

Term	Description
State conservation engineer (SCE)	Engineer responsible for all NRCS engineering work performed within the State.
Static or vibratory smooth steel drum rollers	Heavy compaction equipment having one or two smooth steel drums. The drums generally can be filled with liquid for added weight. Many have a vibrating mode which imparts additional compactive effort (dynamic effort) and is well suited for non-cohesive granular materials such as sands and gravels. Others may only operate in a non-vibratory (static) mode. Smooth drum rollers are not well suited for compacting cohesive soils such as clays and silts.
Static or vibratory tamping foot rollers	Heavy compaction equipment having one or two steel drums that contain protruding pads are affixed to the exterior of the drum. The pads impart a kneading effect on the soil. The drums generally can be filled with liquid for added weight. Many have a vibrating mode that imparts additional compactive effort (dynamic effort) and is well suited for noncohesive granular materials such as sands and gravels. Others may only operate in a nonvibratory (static). Unlike smooth steel drum rollers, tamping foot rollers are well suited for compacting cohesive soils such as clays and silts as well as noncohesive soils. For clays and silts, the vibrating mechanism is generally disengaged because it is the kneading action that works best for compacting cohesive soils.
Stinger	A metal attachment to equipment that allows for movement of geotextile or other rolled materials. The diameter of the attachment is small enough that it will fit into the center of the roll where it can be lifted and moved by equipment.
Stokes Law	An equation for the frictional force exerted on spherical objects in a viscous fluid. It shows that larger particles fall faster than smaller particles causing segregation when filter sands are placed in water.
Stormwater Pollution Prevention Plan (SWPPP)	A plan that consists of at least five different phases—planning and organization, assessment, best management practices (BMPs) identification, implementation, and evaluation/monitoring—that must be developed and implemented by permittees.
Stratigraphy	A branch of geology devoted to the study of rock layers and layering.
Subcontractor	Contractor enlisted by the prime contractor to perform specific aspects of a project.
Submittals	Shop drawing, schematic, fabrication drawing, diagram, layout, descriptive literature, illustration, schedule, product, performance and test data, template, test, sample, and/or other material or data related to the materials, equipment systems, or methods proposed for performance of the work that is required by the contract documents and prepared or furnished by the contractor to the contracting officer or owner's representative to illustrate some part of the work.
Substrate	Soil, rock, form decking or other material upon which fresh concrete, earth, or other building material is placed.
Sulfate attack	The most common form of chemical attack on concrete caused by sulfates in the ground water or soil. Sulfates that are absorbed into the concrete react with elements in the paste causing the paste to swell and break apart (attack) the concrete.
Superintendent	A person employed by the contractor to directly superintend the work.
Supplemental agreement	See bilateral modification.

Term	Description
Surety	A corporation or individual that, for a fee paid by the contractor (the fee is akin to an insurance premium), will step in and bear the cost of completing the project if the contractor defaults on the contract or provide a means for unpaid subcontractors or material suppliers to receive payment.
Tamping foot roller	See static or vibratory tamping foot roller.
Technical assistance notes	A written account of actions taken and correspondence with a landowner or contractor. These notes are recorded in the owner's file that is maintained at the local NRCS field office.
Theoretical air-free density (TAFD)	The maximum wet density that can be attained for a specific RCC mix assuming there is no air (entrapped or entrained) in the mix. The TAFD is computed by dividing the sum of the individual weights of the mix components by the sum of the individual absolute volumes of the mix components.
Thermal shock	The rapid lowering of temperature that results in a significant difference between the surface temperature and the internal temperature of the concrete. Thermal shock can cause the concrete to crack.
Time-and-materials contract	Contract in which a contractor is paid on the basis of (1) actual cost of direct labor, usually at specified hourly rates; (2) actual cost of materials and equipment usage; and (3) agreed upon fixed add-on to cover the contractor's overheads and profit (income).
Time of exposure (TE)	Term used to describe the period, expressed to the nearest quarter hour, beginning when compaction of RCC is completed and ending when it is covered by a subsequent layer of RCC or conventional concrete.
Tort claim	Claim against an entity by an injured person for the purpose of recovering damages.
Tremie	Sometimes referred to as an "elephant trunk," a tremie is a solid or flexible pipe that is extended to the bottom of a concrete form or grout hole to convey the concrete or grout to the bottom.
Trench walls	The sides of the trench.
Unauthorized commitment	An agreement that is not binding solely because the government representative who made it lacked the authority to enter into that agreement on behalf of the government.
Unilateral modification	Contract modification signed by the contracting officer only directing a change in the contract without mutual consent of both parties.
Unrooted stems	Stems cut off above their roots.
Vebe consistency	The time required for a given mass of concrete to be consolidated by vibration in a cylindrical mold under a surcharge mass. The standard test procedure for determining the Vebe consistency of a mix, described in ASTM C1170, involves placing the mixture in a steel cylinder that is affixed to a vibrating table and placing either a 27.5-pound or 50-pound surcharge on top of the mixture. The surcharge is also cylindrical in shape, but has a slightly smaller diameter than the inside of the cylinder containing the mixture. The surcharged mixture is then vibrated so that the large aggregate settles into the mixture, causing mortar to form at the top of the mixture. The mortar oozes into the space between the perimeter of the surcharge and the inner wall of the cylinder. The time that it takes for a mortar ring to completely fill the space between the perimeter of the surcharge and the inner walls of the cylinder is reported to the nearest second as the Vebe consistency.

Term	Description
Vertex	One of three points on a triangle where two sides intersect.
Walers or wales	Structural members made of lumber, steel, or polymer materials that bridge across studs in a concrete form wall or as part of a sheet piling system. Form ties (for a concrete form wall) pass through the walers allowing the walers to transfer and distribute the load from the form ties across several studs. In a sheet piling system, bolts or cables pass through the walers.
Waterjet stringer	A tool which uses which uses high-pressure water to hydrodrill a planting hole with adequate depth to the water table.
Wattle	A soil bioengineering technique that are rows of live stakes or poles with live wattling materials woven in a basket-like fashion. A wattle fence can be used to deter erosion in ditches or small dry channel beds to resist the formation of rills and gullies
Wedge	A wedge-shaped heating element used in hot-wedge fusion welding to heat the geomembrane to a specific temperature. A single or dual-track wedge fusion welder is often referred to as a wedge.
Welding rod	A geosynthetic rod that is fed into and extruded from an extrusion gun. It should be made from the same resin class as the bonding surface of the geomembrane surfaces being extruded to.
Wellpoints	A series of closely spaced small diameter water extraction wells containing one to three feet perforated sections of pipe connected to a nonperforated pipe. The top of the perforated section is set at or below the groundwater surface elevation desired at that point and connected to the nonperforated pipe. The nonperforated pipe extends to the ground surface and is connected to a manifold or header main pipe. The manifold pipe is connected to the suction side of a suitable pump.
Yield strength	The load limit to which steel will stretch and return to its original length.
Zero air voids (ZAV) curve	A curve generally plotted on the same sheet as a Proctor curve that represents the maximum dry density of a soil at specific moisture contents. The ZAV is dependent on the specific gravity and moisture content of the soil.
Zoned fills	Earthfill structures, such as dams, that are composed of various zones of different kinds of soil. Generally, for a water impounding or flood-control dam, the most impermeable soil will be placed in Zone 1 located in the center of the dam with less permeable materials in other zones located outside of Zone 1.