

---

## NJ650.14 Glossary

*The glossary defines some of the specific terms used in this chapter. The listing is not intended to be complete, but should assist in providing a quick reference to many terms that may not be commonly understood.*

- Aquifer** A geologic formation that holds and yields useable amounts of water. Aquifers can be classified as confined or unconfined.
- Artesian aquifer** Aquifer that contains water under pressure as a result of hydrostatic head. For artesian conditions to exist, an aquifer must be overlain by a confining material of aquiclude and receive a supply of water. The free water surface stands at a higher elevation than the top confining layer.
- Bedding** (1) A surface drainage method accomplished by plowing land to form a series of low narrow ridges separated by parallel dead furrows. The ridges are oriented in the direction of the greatest land slope (crowning or ridging). (2)Preparation of furrow-irrigated rowcropped field with wide, flattened ridges between furrows on which one or more crop rows are planted. (3) The process of laying a pipe or other conduit in a trench with the bottom shaped to the contour of the conduit or tamping earth around the conduit to form its bed. The manner of bedding may be specified to conform to the earth load and conduit strength. (4) Material placed under a pipe or other conduit for mechanical support.
- Blind drain** Type of drain consisting of an excavated trench, refilled with pervious materials (coarse sand, gravel, or crushed stones) through whose voids water percolates and flows toward an outlet (also called a trench drain).
- Blind inlet** Surface water inlet in which water enters by percolation rather than through open flow conduits.
- Blinding** Material placed on top of and around a drain tile or conduit to improve the flow of water to the drain and to prevent displacement during backfilling of the trench
- Capillary fringe** A zone in the soil just above the water table that remains saturated or almost saturated the extent of which depends on the size-distribution of pores.
- Confined aquifer** An aquifer whose upper, and perhaps lower, boundary is defined by a layer of natural material that does not readily transmit water
- Controlled drainage** Regulation of the water table by means of control dams, check drains, or a combination of these, for maintaining the water table at a desired depth.
- Deep percolation** Water that moves downward through the soil profile below the root zone and is unavailable for use by vegetation.
- Diversion** A channel with supporting berm constructed across a slope, generally uphill of the area to be protected, to intercept surface runoff and divert it to a safe or convenient discharge point.
- Drain** Any closed conduit (perforated tubing or tile) or open channel used for removal of surplus ground or surface water.
- Drainage** Process of removing surface or subsurface water from a soil or area.

---

<b>Drainage coefficient</b>	Rate at which water is to be removed from a drainage area, expressed as depth per day or flow rate per unit of area.
<b>Drainage curves</b>	Flow rate versus drainage area curves giving prescribed rates of runoff for different levels of crop protection.
<b>Drainage pumping plant</b>	Pumps, power units, and appurtenances for lifting drainage water from a collection basin to an outlet
<b>Drainage system</b>	Collection of surface or subsurface drains, or both, together with structures and pumps, used to remove surface or ground water
<b>Drop structure</b>	Hydraulic structure for safely transferring water in a channel to a lower elevation without causing erosion.
<b>Envelope, Drain</b>	Generic name for materials placed on or around a drainage conduit, irrespective of whether used for structural support, improvement in flow, or to stabilize surrounding soil material.
<b>Envelope, Hydraulic</b>	Permeable material placed around a drainage conduit to improve flow conditions in the area immediately adjacent to the drain.
<b>Envelope, Filter</b>	Permeable material placed around a drainage conduit to enhance water entry and to stabilize the structure of the surrounding soil material.
<b>Field ditch</b>	A shallow channel, usually constructed with relatively flat side slopes, that collects surface water within a field.
<b>Geotextile</b>	A woven or non-woven fabric of synthetic polymer fibers used to enhance soil properties or to improve structural performance.
<b>Grade stabilization structure</b>	Hydraulic structure used to control the grade and head cutting in natural or artificial channels.
<b>Ground water</b>	Water occurring in the zone of saturation in an aquifer or soil.
<b>Hardpan (soil)</b>	A hardened soil layer, in the lower A or B horizon, caused by cementation of soil particles.
<b>Hydraulic conductivity</b>	The ability of a porous medium to transmit a specific fluid under a unit hydraulic gradient; a function of both the characteristics of the medium and the properties of the fluid being transmitted (usually a laboratory measurement corrected to a standard temperature and expressed in units of length/time).
<b>Hydraulic gradient</b>	Change in the hydraulic head per unit distance (water surface slope in an open channel).
<b>Impermeable barrier layer</b>	A soil stratum with a permeability less than ten percent of the soil permeability between the layer and the ground surface.
<b>Infiltration</b>	The downward entry of water through the soil surface into the soil.
<b>Infiltration rate</b>	The quantity of water that enters the soil surface in a specified time interval (often expressed in volume of water per unit of soil surface area per unit of time).
<b>Interceptor drain</b>	A channel or perforated conduit located across the flow of ground water; and sometimes surface water, to collect flow before reaching an area to be protected.

---

<b>Iron ochre</b>	A reddish or yellowish brown gelatinous deposit formed by iron fixing bacteria
<b>Land smoothing</b>	Shaping the land to remove irregular, uneven, mounded, broken, or jagged surfaces without the need for detailed survey information.
<b>Land grading</b>	The operation of shaping the land surface to predetermined elevations for improved surface drainage or erosion control (also known as precision land forming).
<b>Lateral</b>	Secondary or side channel, ditch, or conduit that conveys flow to a mainline.
<b>Perched water table</b>	A localized condition of saturated soil held in a pervious soil stratum because of an underlying impervious layer that prevents percolation to a deeper aquifer.
<b>Percolation rate</b>	The rate at which water moves through a porous media, such as soil.
<b>Permeability</b>	(qualitative) The ease at which gases ,liquids, or plant roots penetrate or pass through a layer of soil or porous media.; (quantitative) The specific soil property designating the rate at which gases and liquids can flow through the soil or porous media.
<b>Permittivity</b>	A measure of the ability of a geotextile to permit water flow perpendicular to its plane. (The volumetric flow rate of water per unit cross-sectional area per unit head.)
<b>Quick condition</b>	Condition in which water flows through the soil material (upward or horizontally) with sufficient velocity to significantly reduce the bearing capacity of the material through a decrease in intergranular pressure.
<b>Recharge</b>	Process by which water is added to the zone of saturation to replenish an aquifer.
<b>Relief drainage system</b>	A system of subsurface drain lines, installed within an area having a high water table, to lower the water table or maintain it at a given level.
<b>Root zone</b>	Depth of soil that roots readily penetrate and in which the predominant root activity occurs.
<b>Seepage</b>	The movement of water into and through the soil from unlined canals. ditches, or water control facilities
<b>Steady flow</b>	Open channel flow in which the rate and cross-sectional area remain constant with time at a given station.
<b>Subirrigation</b>	Application of irrigation water below the ground surface by raising the water table to within or near the root zone.
<b>Subsoiling</b>	Tillage operation to loosen the soil below the tillage zone without inversion and with a minimum of mixing within the tilled zone.
<b>Subsurface drain</b>	Subsurface conduits used primarily to remove subsurface water from soil. Classifications of subsurface drains include pipe drains, tile drains, and blind drains.
<b>Surface drainage</b>	The diversion or orderly removal of excess water from the land surface by means of improved natural or constructed channels, supplemented when necessary by shaping and grading the land surface to such channels.
<b>Surface inlet</b>	Structure for diverting surface water into an open ditch, subsurface drain, or pipeline.

- Unconfined aquifer** An aquifer whose upper boundary consists of relatively porous natural material that transmits water readily and does not confine water. The water level in the aqifer is the water table.
- Vent** An appurtenance to a pipeline that permits the passage of air to or from the pipeline.
- Water table** The upper limit of a free water surface in a saturated soil or underlying material.
- Water table management** The control of ground water levels by regulating the flow of water with a controlled drainage or subirrigation system.