

I. Components

The sequential primary components of the **EPIC™** System are:

- Laser level subgrade, ½" tolerance, 90% Proctor Density
- 4oz Non-Woven Geo-textile Felt Fabric (optional)
- 45 mil EPDM Rubber Liner on sub-grade and upright perimeter wall
- EPIC Chambers w/ non-pressurized 2" PVC connectors
- 2" of washed bridging gravel (ASTM C33 no.89)
- 13" (+/-) washed concrete sand (ASTM F2396)
- Total average profile depth +/- 15"-16"
- Inlet vault / Drain Vault
- Recirculation Tank with float valve, pump, fertigation unit (optional) and 7-day electrical timer



II. Operation

Inlet Vault

Inlet vaults are the starting point of the EPIC cell flow patterns, and supplied from the submersible pump in the recirculation tank. Check inlet regularly to verify pump operation.

Drain Vault

Drain vaults are the end point of EPIC system. Check drain vault to verify water has reached the entire length of EPIC flow pattern. An extension inserted in the vertical 6" drain can raise sub-surface water levels during planting. Remove extension from outlet for normal operation.

Recirculation Tank

Houses the submersible pump, water Point of Connection (POC) to float valve, fertigation unit (optional) and within close proximity a 7-day electrical timer to control pump operation. 6" final drain overflow located in the tank reservoir which drains to the project outfall.

EPIC Weekly 24 hour irrigation cycle

Running the submersible pump too long per cycle (+24-48 hrs) will not create a problem. Running the pump too often / frequent every day non-stop can eventually cause a problem; too much water will not allow the system to fluctuate water levels to exchange O₂ & CO₂.

III. Turf & Landscape Planting Establishment

Establishment Period Preparation

Smooth dry finish grade sand with drag mat. Begin "charging" pump operation at recirculation tank. Check the flow rates in the inlet vaults. Confirm flow of water reaches the drain vaults. Verify capillary irrigation moisture has reached all areas of each flow pattern (day after charging). Apply establishing fertilizer nutrients granules on surface and/or fertigation in water.

Mulch

Mulch around landscape plants and trees where applicable.

First Week

Remove excess soil from landscape plants root ball prior to transplant into sand. Compact sand around each planting. Hand water as *heat relief only* 2-3 times daily, at the hottest parts of the day, as the landscape / sod will be very stressed and can easily overheat until a new root system establishes into the sand. Hand water misting only in short durations. This practice only necessary above 75F. Operate pump 24/7 to maintain maximum saturation level.

Second Week

Use a USGA Standard Sized Golf Cup Cutter or a soil probe to check root growth (optional). Reduce pump inlet operation to EPIC system from 24/7 to 24/3.

Third Week.

Root growth should be well established, sod should not lift when pulled / tugged with hands. Use a USGA Standard Golf Cup Cutter or a soil probe to check root growth (optional). Once root growth reaches an average of 6”, reduce pump operation program cycle to 24/1. Core aeration operation of the field is recommended with a piston driven core aerator.

Routine Maintenance

Mow frequently and keep mower blades sharp. Keep records and be observant of change. Be observant for harmful bugs or diseases and apply treatment as necessary.

Time	Material/Procedure	Rationale
All months	Maintain grass height to recommendation by sod grower for selected species	Mow at least once per week in the early and late months and <u>twice per week</u> during May, June, July, August with a sharp mower. Mow in alternating patterns.
All months	Maintain moisture levels	Normal operating level is operating the pump 24 hrs. / 1-2 times per week.
All Months	Fertility	Fertilize as needed from soil tests and visual plant inspections. *Sand-based fields will require a more comprehensive fertility program*
Seasonally	Aeration	Sand fields grow aggressively. Aeration is critical to avoid anaerobic conditions. Aerate every 8-12 weeks. Rake & remove aeration plugs and schedule nutrient and over-seed operations to follow aeration schedules.

IV. Agronomic Overview

Rely on testing semi-annual soil and water analysis, recommended every 4-6 months to establish the appropriate nutrient formula. Landscape maintenance is a matter of routine.

Water Management

The plants themselves determine the water uptake provided by sand capillary rise. EPIC System water will dry out from the top surface down. Moisture levels require periodic inspections.

Aerobic Conditions

Aerobic (oxygen sufficient) conditions must be available for respiration in roots, which in turn is necessary for plant growth. **Aeration is critical!**

Plant Essential Nutrients

Eight inorganic elements have been recognized as **essential nutrients** for plant growth, each with a specific function in plant physiology. These include Calcium, Iron, Magnesium, Manganese, Nitrogen, Potassium, Phosphorus, and Sulfur.

Agricultural Laboratories

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