

Utilizing the ITM Modular Turf System in USGA Putting Green Construction

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The ITM modular turfgrass system consists of modules molded from high-density polyethylene. Foot locator pads lock the modules together. These pads keep the modules closely aligned to assure that there are no seams or joints, which may disrupt the surface of the turfgrass. The modules are 46 inches, square, and 11 inches deep. There are channels that accommodate forklift arms on all four sides at the bottom of the module. The bottoms of the modules contain numerous small holes to enable drainage and at the same time permit airflow up into the root zone. There are 4 inch flanges at the top of the module (optional) to stabilize the turf during establishment and transportation. Once the turfgrass is sufficiently established the flanges are folded down resulting in the top 4 inches of root zone meshing exactly with the corresponding 4 inches of the adjoining module. The foot locator pads and the weight of the modules themselves (approximately 800-1000 pounds) prevent any shifting. Figure 1 below shows a schematic diagram of the module.

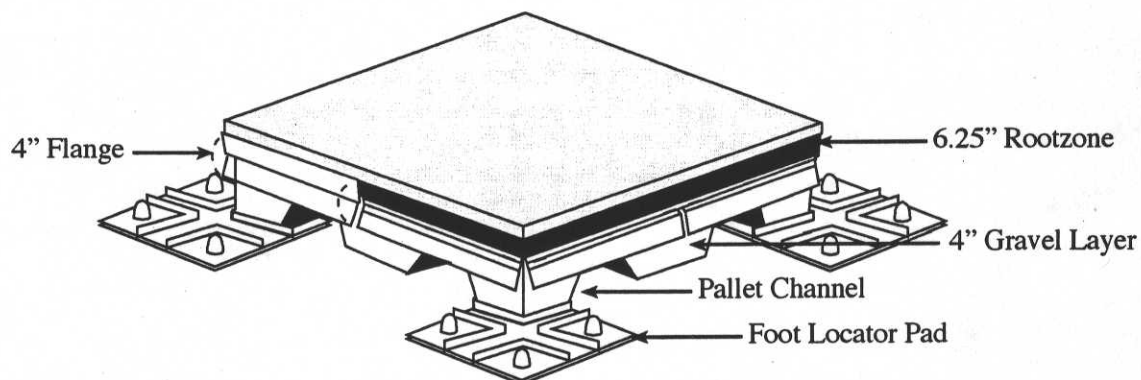


Figure 1. The GreenTech ITM Module

Currently, the Integrated Turf Module (ITM) system is being used commercially for golf course tees, practice tees, and athletic fields. In addition, research is currently underway at the Hancock Turfgrass Research Center at Michigan State University to investigate the potential benefits of this system when implemented into golf course putting greens construction. The ability to incorporate a modular turf system gives architects, golf course builders, and Superintendents a promising new technology that offers significant agronomic and economic benefit.

USGA putting green specifications focus primarily on the particle size of the root zone mix conforming to a required 12 to 14 inch depth over a 6 inch pea stone layer. Drainage tile is another component to USGA greens construction. However, the design of the drain tile in the subgrade is not limited to specific orientations. The use of the ITM modular turf system in the subgrade profile for putting green construction acts similar to the drainage tile currently being used. However, the implementation of the ITM system into the subgrade profile, in addition to the conventional drain tile, would provide increased porosity for air and water to move through the root zone horizon. Additional benefits with using the ITM system in putting green construction is the availability to heat, cool, fertilize, and alter gas exchange in the root zone by using forced air beneath the modules.