European Turfgrass Laboratories Ltd

Information Sheet – Test Sequence for New Golf Green Construction

This is a guide for the different testing required for a new golf green construction.

STEP 1
Source USGA Approved Testing Laboratory

STEP 2
Source Suitable Construction Materials Close to Project

STEP 3
Check Particle Size Distribution & pH of Sand
Check Particle Size Distribution of Gravel

STEP 4
Check Sand/Gravel Compatibility

STEP 5
Check Organic / Inorganic Amendments for Suitability

STEP 6
Select the Best Materials for Rootzone Mix

STEP 7
Determine the Best Mix Ratio for Rootzone

STEP 8
Prepare a Small Bulk Mix for Testing

STEP 9
Establish a Quality Control Program for Use During Construction

Please allow time during each stage for the laboratory to process your testing needs.
Some tests take longer than others to complete.

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STEP 1
Source a USGA approved testing laboratory. The USGA website displays the list of A2LA-accredited laboratories. The USGA only recommend the use of A2LA-accredited laboratories.

STEP 2
Begin to source suitable construction materials close to the project. Choose potential sands for greens rootzone. Choose gravel for use as a drainage layer in golf green construction. Ideally, silica sands are best. Sands with no lime content are preferable.

STEP 3
Check particle size distribution and pH of the sand. Check the particle size distribution of the gravel. The results are compared to the 2004 USGA Recommendations.

STEP 4
Check the sand/gravel compatibility (bridging, permeability and gravel uniformity) to ensure that these materials satisfy the USGA recommendation for bridging and permeability factors. This is based on engineering principles that rely on the largest 15% of the rootzone particles bridging with the smallest 15% of the gravel particles. Compatibility is calculated mathematically.

STEP 5
Check the organic and inorganic amend-ments to be used in the greens rootzone for suitability. Organic amendments include peat, soil, compost (aged for at least 1 year), rice hulls, finely ground bark or sawdust. Inorganic amendments include zeolite, calcined diamtomites or calcined clays (porous ceramics).

STEP 6
From the results obtained in Steps 3 - 5, select the materials to be used in the rootzone mix. Instruct the laboratory which materials have been selected for use in the greens rootzone.

STEP 7
Determine the best mix ratio for the rootzone. The laboratory will conduct a USGA-Design test where we produce 3 mixes using the selected sand organic/inorganic materials. Each root-zone is tested for particle size distribution, pH, particle shape, organic matter content, percolation rate, bulk density, total porosity, air-filled porosity, water-filled porosity and water retention. The results are compared to the 2004 USGA Recommendations.

STEP 8
Prepare a small bulk mix of the best rootzone chosen from Step 7 and submit to the laboratory for testing. This is to ensure that the bulk mix produced in the field is comparable with the laboratory developed rootzone mix.

The laboratory will conduct a USGA test. The rootzone is tested for particle size distribution, pH, particle shape, organic matter content, percolation rate, bulk density, total porosity, air-filled porosity, water-filled porosity and water retention. The results are compared to the 2004 USGA Recommendations.

STEP 9
Establish a quality control program during the rootzone blending phase. The sand particle size distribution should be checked for consistency at regular intervals. We suggest a minimum sampling of the rootzone at every 1000 tonnes. The rootzone should be submitted for a full USGA test – this enables the rootzone blender, if necessary to make adjustments to the peat content to maintain the desired physical properties.

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