

	<i>The American Association for Laboratory Accreditation</i>	
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## INTRODUCTION

This document describes the accreditation requirements applicable to the special putting green laboratory accreditation program designed to meet the requirements of the United States Golf Association (USGA). These requirements cover tests under the A2LA Geotechnical Field of Testing.

Internationally accepted criteria and individual user requirements such as those of the USGA form the basis for the requirements of this program.

One of the major objectives of this program is to provide those responsible for using or approving putting green testing laboratories with an effective alternative to their own action of evaluating and recognizing qualified laboratories. A thorough and balanced assessment is provided as individual requirements are coordinated with A2LA requirements in other areas to provide overall accreditation of a laboratory with a minimum disruption to laboratory operations. A2LA is committed to working with government and non-government users to provide accreditation over an appropriate scope to realize this objective.

## GENERAL CRITERIA

The general criteria for accreditation are contained in ISO/IEC 17025:2005.

## SPECIFIC CRITERIA

Specific criteria are generally an elaboration on or interpretation of the general criteria plus those requirements of accreditation applicable to a certain field of testing, testing technology, type of test or specific test. Although this program falls under the Geotechnical field of testing, the specific requirements of the Geotechnical field do not apply to this program.

Additional specific requirements for this program approved by the A2LA Criteria Council are described below and include an elaboration of ISO/IEC 17025:

- 5.2 Personnel. The Technical Manager of the laboratory must possess at least a B.S. degree in agronomy, horticulture, soils science, agricultural engineering or a closely related science, or have a minimum of ten years experience in the turf testing industry.
- 5.5.2 Equipment ASTM D2974 requires the use of ASTM E145 for the calibration of drying ovens. The nine point calibration procedure specified in ASTM E145 shall be used to calibrate drying ovens, except the required temperature with tolerance shall be 105°C ±5°C.  
Exception to ASTM E145 is that the temperature points may be measured sequentially rather than concurrently. The required



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temperature tolerance shall be  $105^{\circ} \pm 5^{\circ}\text{C}$ . A thermometer traceable to the SI shall be used.

5.6.3.2 Reference Materials When performing ASTM D2976 (Test Method for pH of Peat Materials) or ASTM D4972 (Test Method for pH of Soils), the laboratory shall use commercially available traceable pH standards.

In addition, in order to be accredited in this program, a testing laboratory must be competent to perform, at a minimum, the following turf tests:

- ASTM D2974 Standard Test Method for Moisture, Ash and Organic Matter of Peat and other Organic Soils
- ASTM F1632 Standard Test Method for Particle Size Analysis and Sand Shape Grading of Golf Course Putting Green and Sports Field Root Zone Mixes
- ASTM F1647 Standard Test Method for Organic Matter Content of Putting Green and Sports Turf Root Zone Mixes (Method A –Loss of Ignition and/or Method B – Walkley-Black)
- ASTM F1815 Standard Test Method for Saturated Hydraulic Conductivity, Water Retention, Porosity, and Bulk Density of Putting Green and Sports Turf Root Zones

Additionally, in order to fulfill the particle density requirement of ASTM F1815, a testing laboratory must be competent to perform one or more of the following test methods:

- ASTM D854 Standard Test Method for Specific Gravity of Soils, with the exception for allowing use of a 50 ml or 250 ml pycnometers provided that the deviation from the test method is noted on the test report; and/or
- ASTM D5550 Standard Test Method for Specific Gravity of Soil Solids by Gas Pycnometer and/or
- Particle Density: Soil Science Society of America, Methods of Soil Analysis, Part 4, Physical Methods, pages 229-240

Additional turf tests can be added to a laboratory's scope as desired.



## PROFICIENCY TESTING

Applicants under this program are required to participate in the USGA Green Section Proficiency Testing Program geared to the putting green materials testing industry. Participation is required for each accredited test method, if proficiency testing for that test method is offered by in the USGA Green Section Proficiency Testing Program.

Laboratories shall submit to A2LA, promptly upon receipt, any proficiency testing results received. In addition, should any of the laboratory's results be deemed outliers or unacceptable, then the laboratory shall investigate and determine the cause(s) for such unacceptable results, correct any problems identified, and promptly report to A2LA the outcome of such investigation.

The document titled A2LA Proficiency Testing Requirements for Accredited Testing and Calibration Laboratories details the proficiency testing requirements for laboratories in this program. There are two applications to the proficiency testing requirements for putting green testing laboratories:

- 1) Proficiency testing for sand shape grading in ASTM F1632 (particle size) is not needed to meet the A2LA requirement for participation in *commercially available* proficiency testing programs, but sand shape grading, ASTM F1632 must still be considered for any internal performance-based quality control programs the laboratory conducts. Proficiency testing is required for the particle size analysis portion of ASTM F1632.
- 2) Laboratories accredited for ASTM D4972 (pH of soils) shall participate in proficiency testing for the pH salt (0.01 M CaCl<sub>2</sub>) method (1:1) rather than the pH water (1:1) method.
- 3) Laboratories that receive an outlier in the proficiency testing program in 5 of 6 samples in 2 consecutive rounds for a particular parameter would be placed on suspension until the next round of samples is performed and received by A2LA. If in the following round there are outliers in 2 of 3 samples for the same parameter the laboratory will have the test method removed from their Scope of Accreditation until a successful round has been performed. A successful round is defined as one where no more than 1 outlier (in three samples) is received for that parameter that was the cause of the original suspension.

### DOCUMENT REVISION HISTORY

Date	Description
January 13, 2011	Removal of ASTM D421

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