



# Standard Test Method for Conducting Outdoor Sound Measurements Using a Digital Statistical Sound Analysis System<sup>1</sup>

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## INTRODUCTION

This is one of a series of standards on the measurement and evaluation of community noise. Others in the series include Guide E1014 which covers manual measurement, using a simple meter, and analysis of the resulting data, and Guide E1780, which covers measurement of sound received from a nearby fixed source.

## 1. Scope

1.1 This test method covers the measurement of outdoor sound levels at specific locations using a digital statistical sound analysis system and a formal measurement plan.

1.1.1 This test method provides basic requirements for obtaining either a single set of data or multiple sets of related data. However, because there are numerous circumstances and varied objectives requiring multiple sets of data, the test method does not address planning of the measurement program.

1.2 The use of results of measurements performed using this test method include, but are not limited to, the following:

1.2.1 To characterize the acoustical environment of a site,

1.2.2 To characterize the sound emissions of a specific sound source which exhibits a temporal variation in sound output, and

1.2.3 To monitor the effectiveness of a noise impact mitigation plan.

1.3 This test method is intended to be used in conjunction with a measurement plan that references this test method. Changes or additions to the provisions of this test method shall be clearly stated in the plan.

1.3.1 In the event it is necessary, for example, because of time constraints, to conduct measurements without first formalizing a plan, this test method can be used if an operator/observer whose qualifications are satisfactory to both the performing organization and the client is present at all times during the measurements and who complies, to the extent

possible, with all the applicable requirements of this test method, including record keeping.

1.4 The data obtained using this test method enable comparison of sound level data with appropriate criteria.

1.4.1 The data obtained with this test method can be used in the derivation of loudness levels provided the necessary requirements regarding sample duration and signal bandwidth are observed in collecting the data. It is recommended that a specialist in the area of loudness evaluation be consulted in preparing a plan for measurements intended to produce data which will be used for this purpose.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

C634 Terminology Relating to Building and Environmental Acoustics

E1014 Guide for Measurement of Outdoor A-Weighted Sound Levels

E1686 Guide for Applying Environmental Noise Measurement Methods and Criteria

E1780 Guide for Measuring Outdoor Sound Received from a Nearby Fixed Source

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee E33 on Building and Environmental Acoustics and is the direct responsibility of Subcommittee E33.09 on Community Noise.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.