



Standard Guide for Open Office Acoustics and Applicable ASTM Standards¹

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^{ε1} NOTE—Keywords were added editorially in March 1998.

INTRODUCTION

There are no full height partitions in an open-plan office to block sound transmission between adjacent work stations. Instead, partial height barriers, a sound absorbing ceiling and absorption on vertical surfaces are used to provide sound attenuation between individuals. These, in combination with work station layout and appropriate levels of broad band masking sound are used to obtain acceptable degrees of acoustical privacy.

1. Scope

1.1 This guide discusses the acoustical principles and interactions that affect the acoustical environment and acoustical privacy in the open office. In this context, it describes the application and use of the series of ASTM standards that apply to the open office.

1.2 The values stated in inch-pound units are to be regarded as standard. The SI units in parentheses are provided for information only.

1.3 *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:

- E 1041 Guide for Measurement of Masking Sound in Open Offices²
- E 1110 Classification for Determination of Articulation Class²
- E 1111 Test Method for Measuring Interzone Attenuation of Ceiling Systems²
- E 1130 Test Method for Objective Measurement of Speech Privacy in Open Offices Using Articulation Index²
- E 1179 Specification for Sound Sources Used for Testing Open Office Components and Systems²
- E 1375 Test Method for Measuring the Interzone Attenuation of Furniture Panels Used as Acoustical Barriers²
- E 1376 Test Method for Measuring the Interzone Attenua-

tion of Sound Reflected by Wall Finishes and Furniture Panels²

E 1414 Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling and Plenum²

3. Summary of Guide

3.1 *Acoustical Privacy*—The attenuation of sound between neighboring work stations in an open-plan office is typically much less than that potentially available between closed-plan offices. Nevertheless, a degree of acoustical privacy can be achieved if component selection and interaction are understood. A successful open plan office is the result of careful coordination of the several components, ceiling, wall treatments, furniture and furnishings, heating, ventilating and air-conditioning system, and masking sound system. (See Section 7.)

3.1.1 This guide delineates the role and interaction of the several components and the application of the relevant ASTM Standards.

4. Significance and Use

4.1 This guide is intended for the use of architects, engineers, office managers, and others interested in designing, specifying, or operating open offices.

4.2 It is not intended to be applied to other than office environments, for example, open plan schools.

4.3 While this guide attempts to clarify the many interacting variables that influence office privacy, it is not intended to supplant the experience and judgment of experts in the field of acoustics. Competent technical advice should be sought for success in the design of open offices, including comparisons of test results carried out according to ASTM standards.

5. General Open Office Acoustical Considerations

5.1 *Introduction—Attenuation with Distance*—In almost any enclosed space, there is some reduction of sound level with

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² *Annual Book of ASTM Standards*, Vol 04.06.