

Entertainment Services and Technology Association



American National Standard E1.26 - 2006 Entertainment Technology Recommended Testing Methods and Values for Shock Absorption of Floors Used in Live Performance Venues

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Floors/2004-8002r3.2

This edition of ANSI E1.26 was approved by American National Standards Institute on July 13, 2006.

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Published By:

**Entertainment Services and
Technology Association**

875 Sixth Avenue, Suite 1005
New York, NY 10001 USA
Phone: 1-212-244-1505
Fax: 1-212-244-1502
Email: standards@esta.org

For Additional Copies of this Document Contact:
ESTA Publications

The ESTA Foundation
875 Sixth Avenue, Suite 1005
New York, NY 10001 USA
Phone: 1-212-244-1505
Fax: 1-212-244-1502
www.estafoundation.org

The ESTA Technical Standards Program

The ESTA Technical Standards Program was created to serve the ESTA membership and the entertainment industry in technical standards related matters. The goal of the Program is to take a leading role regarding technology within the entertainment industry by creating recommended practices and standards, monitoring standards issues around the world on behalf of our members, and improving communications and safety within the industry. ESTA works closely with the technical standards efforts of other organizations within our industry including USITT, PLASA, and VPLT as well as representing the interests of ESTA members to ANSI, UL, and the NFPA. The Technical Standards Program is accredited by the American National Standards Institute as Accredited Standards Committee E1, Safety and Compatibility of Entertainment Technical Equipment and Practices.

The Technical Standards Committee (TSC) was established by ESTA's Board of Directors to oversee and coordinate the Technical Standards Program. Made up of individuals experienced in standards-making work from throughout our industry, the Committee approves all projects undertaken and assigns them to the appropriate working group. The Technical Standards Committee employs a Technical Standards Manager to coordinate the work of the Committee and its working groups as well as maintain a "Standards Watch" on behalf of members. Working groups include: Camera Cranes, Control Protocols, Electrical Power, Floors, Fog and Smoke, Followspot Position, Photometrics, and Rigging.

ESTA encourages active participation in the Technical Standards Program. There are several ways to become involved. If you would like to become a member of an existing working group, as have over two hundred people, you must complete an application which is available from the ESTA office. Your application is subject to approval by the working group and you will be required to actively participate in the work of the group. This includes responding to letter ballots and attending meetings. Membership in ESTA is not a requirement. You can also become involved by requesting that the TSC develop a standard or a recommended practice in an area of concern to you.

The Floors Working Group, which authored this standard, consists of a cross section of entertainment industry professionals representing manufacturers, consultants, dealers, and end-users. ESTA is committed to developing consensus-based standards and recommended practices in an open setting. Future Floors Working Group projects will include updating this publication as changes in technology and experience warrant, as well as developing new standards and recommended practices for the benefit of the entertainment industry.

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1 Scope

This document sets out the energy absorption requirements for floors in venues used for live performances, and the methods for testing them. This document is to be used in conjunction with all applicable local building codes and requirements.

2 Definitions - Types of Floors

2.1 Surface elastic floors consist of an elastic layer, a rigid load distribution layer and a top surface. These floors generally have a harder surface and respond well to rolling loads.

2.2 Point elastic floors consist of an elastic layer and a top surface. The top surface is generally considered softer, and they do not respond well to rolling loads.

2.3 Area elastic floors combine the characteristics of both surface elastic and point elastic floor construction. These floors consist of an elastic layer, a load distribution layer and an elastic layer with a top surface. These floors provide point impact protection, yet respond well to rolling loads.

2.4 Rigid floors consist of a top layer with little or no elastic construction.

3 Requirements

The requirements are based on the following criteria. All of these requirements shall be taken into consideration in their entirety, with no one requirement outweighing any other:

- a. Performance floors represent a significant functional component
- b. Performance floors provide significant protection to performers
- c. These floors may, by design, have a reduced load bearing capacity

4 Test Methods

4.1 Performance tests shall be conducted by the manufacturer and the results provided to the end user.

4.2 Test sections of the floor shall be a minimum of 2.5 m X 3.5 m (8' x 12'), with at least one joint between sections.

4.3 Tests shall be conducted on a floor with a slope of less than 1/4" per foot rise per foot of run.

4.4 All tested pieces shall be acclimated to the expected ambient conditions per the manufacturer's recommendations prior to testing. Temperature and humidity conditions at the time of testing shall be recorded.