



ANSI E1.26 – 2006 (R2017)
Entertainment Technology—
Recommended Testing Methods and
Values for
Shock Absorption of Floors Used in
Live Performance Venues

Document number: Floors/2004-8002r3.2

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Approved as an American National Standard by the ANSI Board of Standards Review on
23 February 2017.

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Published by:

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Reed Rigging
Reliable Design Services
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Sapsis Rigging Inc.
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Theatre Projects
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Stageworks
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Oasis Stage Werks
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Stagemaker
TMB
Total Structures
Vincent Lighting Systems

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Interest category codes:

CP = custom-market producer	DE = designer
DR = dealer rental company	G = general interest
MP = mass-market producer	U = user

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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 General

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

4.1.1 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.

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

4.1.3 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.

4.1.4 A minimum of 5 points (as defined in Appendix A) shall be tested, the values recorded, and an average value computed. The high, low, and average values shall be reported. Additional points may be tested and used to compute the average value.

4.2 Shock Absorption Test

Shock absorption is determined by analyzing two measurements taken using the apparatus shown in Figure 1. These two measurements are taken at each designated test point. Each point shall be tested a minimum of five times without moving the apparatus. The recorded values shall be averaged and the average value shall be used as the value for that test point.