

Entertainment Services and Technology Association



American National Standard
E1.8 - 2005
Entertainment Technology
Loudspeaker Enclosures Intended
for Overhead Suspension - Classification,
Manufacture and Structural Testing

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American National Standard E1.8 - 2005 Entertainment Technology Loudspeaker Enclosures Intended for Overhead Suspension - Classification, Manufacture and Structural Testing Rig/1997-2021r12a

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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, 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 Rigging 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 Rigging 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.

Contents

Foreword	ii
1 Scope	1
2 Definitions	1
3 Reference to Other Codes and Standards	2
4 Enclosure Definition and Classification	2
4.1 TYPE 1 Enclosure Definition	2
4.2 TYPE 2 Enclosure Definition	2
4.3 TYPE 3 Enclosure Definition	3
4.4 Classification of Enclosures	3
5 Manufacture	3
5.1 Enclosure Construction	3
5.2 Component Part Security	4
5.3 Enclosure Suspension Hardware	5
6 Control Systems	5
6.1 Marking	5
6.2 Enclosure Product Traceability	6
6.3 Hardware Product Traceability	6
6.4 Quality Control	7
6.5 Training Program	7
6.6 Print Revision Policy	7
7 Testing	7
8 Manufacturer Product Representation	8
8.1 Rigging Inquiry Policy	8
8.2 Print Availability Policy	8
9 Instructions for the Installer and User	8
9.1 Enclosure Suspension Instructions	8
9.2 Maintenance and Inspection Instructions	8
9.3 Customer Service	8

Foreword

(This foreword contains no requirements and is not part of E1.8)

There are no American National Standards, British Standards, German Standards, Japanese Standards or Australian Standards that cover the design, manufacture and use of enclosures that are intended for overhead suspension. In an attempt to improve safety and standard in the industry, the Entertainment Services and Technology Association (ESTA) has developed a Speaker Rigging Task Group that has participated with loudspeaker manufacturing industry professionals in order to prepare this draft standard.

This standard presents a coordinated set of rules that may serve as a guide to government and other regulatory bodies and municipal authorities responsible for the guarding and inspection of the equipment falling within its scope. The suggestions leading to accident prevention are given both as mandatory and advisory provisions; compliance with both types may be required by employers of their employees.

Safety codes and standards are intended to enhance public safety. Revisions result from committee consideration of factors such as technology advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate. Compliance with this Standard does not itself confer immunity from legal obligations.

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1 Scope

This standard encompasses the requirements for enclosures intended for overhead suspension and addresses only the structural characteristics relating to the suspension of the enclosure which include: enclosure construction, component part security, enclosure suspension hardware, manufacturing control systems, structural testing, and product representation.

2 Definitions

competent: a person who is capable of identifying existing and predictable hazards in the workplace and who is authorized to take prompt corrective measures to eliminate them.

component: parts of a whole.

design factor: a ratio between a defined value and a divisor, the divisor being called the design factor. Example: a design factor of 10 would result in the following formula $x / 10 = y$.

enclosure: all parts of the loudspeaker system housing or assembly exclusive of the enclosure suspension hardware, electrical wiring, electrical components, acoustical radiating elements and cover material intended to be user removable.

enclosure suspension hardware: suspension components permanently affixed to the enclosure by the manufacturer.

manufacturer: person or company that fabricates enclosures.

permanent: not temporary. Intended for the lifetime of the use.

qualified person: a person who, by possession of a recognized degree or certificate of professional standing, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter and work.

rated load: the manufacturer's stated maximum load for an enclosure or component of an enclosure.

shall: indicates that the rule is mandatory and must be followed.

should: indicates that the rule is a recommendation, the advisability of which depends on the facts and conditions in each situation.

type: this standard refers to enclosures as explained in the Classification section of this standard. Wherever TYPE is designated within this standard, the content of the section containing the designation shall apply only to the designated TYPE. Wherever TYPE is not designated within this standard, the content of the section shall apply to every TYPE.

material and/or component failure: stress in excess of the maximum stress value of a material and/or component causing fracture or failure.

ultimate load: the maximum load that can be applied without failure occurring.