



ANSI E1.6-1 – 2012  
Entertainment Technology—Powered Hoist  
Systems

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# ANSI E1.6-1 – 2012

## Entertainment Technology—Powered Hoist Systems

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This standard was originally published when the Entertainment Services and Technology Association was  
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ESTA has reverted to its original name, and this document has been rebranded with the current corporate  
name and logo. No changes have been made to the contents of the standard.

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The Rigging Working Group, which authored this Standard, consists of a cross section of entertainment industry professionals representing a diversity of interests. ESTA is committed to developing consensus-based standards and recommended practices in an open setting.

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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 standard establishes requirements for the design, manufacture, installation, inspection, and maintenance of powered hoist systems for lifting and suspension of loads for performance, presentation, and theatrical production.

This standard does not apply to the structure to which the hoist is attached, attachment of loads to the load carrying device, systems for flying people, welded link chain hoists, and manually powered hoists.

The provisions of this standard are not intended to prohibit any design, materials, or methods of fabrication, provided that any such alternative is at least the equivalent of that described in this standard in quality, strength, and effectiveness. ([See Annex note.](#))

## 2 References

All equipment shall be manufactured to comply with this standard and any applicable codes or jurisdictional regulations where the requirements of such codes or regulations are more stringent.

The following documents are referenced. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any amendments, shall apply.

Aluminum Design Manual, 2010 edition<sup>1</sup>

American Welding Society standards<sup>2</sup>

ANSI/AISC 360-05 Specification for Structural Steel Buildings

ANSI B11.TR3 2000 Risk Assessment and Risk Reduction

ANSI/ASME B29.4 2002 Roller Load Chains for Overhead Hoists

ANSI E1.2 2006 Design, Manufacture and Use of Aluminum Trusses and Towers

ANSI Z535 2006

1 - Safety Color Code

2 - Environmental and Facility Safety Signs

3 - Criteria for Safety Symbols

4 - Product Safety Signs and Labels

6 - Product Safety Information re Product Manuals, Instruction and Other Collateral Materials

NFPA 70: National Electric Code, 2008 edition<sup>3</sup>

NFPA 79: Electrical Standard for Industrial Machinery, 2007 edition<sup>4</sup>

## 3 Definitions

**3.1 characteristic load:** the maximum force applied to a component of a hoist system resulting from normal intended operating conditions while the system is at rest or in motion. This includes the apportioned fractions of the working load limit (WLL), self weight including that due to load carrying devices and lifting media, and the forces due to inertia in normal use. ([See Annex note.](#))

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<sup>1</sup> The Aluminum Association 1525 Wilson Boulevard, Suite 600 Arlington, VA 22209, [www.aluminum.org](http://www.aluminum.org)

<sup>2</sup> American Welding Society 550 N.W. LeJeune Road Miami, FL 33126, [www.aws.org](http://www.aws.org)

<sup>3</sup> National Fire Protection Society 1 Batterymarch Park Quincy, MA 02169-7471, [www.nfpa.org](http://www.nfpa.org)

<sup>4</sup> National Fire Protection Society 1 Batterymarch Park Quincy, MA 02169-7471, [www.nfpa.org](http://www.nfpa.org)