



DRAFT

BSR E1.81
Rigging System Signage Requirements

Approved by the ANSI Board of Standards Review on

Rig/2026-2006r0

© 202x Entertainment Services and Technology Association (ESTA)
All rights reserved.

Notice and Disclaimer

This document is the intellectual property of ESTA and is protected by copyright law. No parts hereof may be distributed in any manner without the explicit permission of ESTA.

ESTA does not approve, inspect, or certify any installations, procedures, equipment or materials for compliance with codes, recommended practices or standards. Compliance with an ESTA standard or recommended practice is the sole and exclusive responsibility of the manufacturer or provider and is entirely within their control and discretion. Any markings, identification or other claims of compliance do not constitute certification or approval of any type or nature whatsoever by ESTA.

ESTA neither guaranties nor warrants the accuracy or completeness of any information published herein and disclaim liability for any personal injury, property or other damage or injury of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on this document.

In issuing and distributing this document, ESTA does not either (a) undertake to render professional or other services for or on behalf of any person or entity, or (b) undertake any duty to any person or entity with respect to this document or its contents. Anyone using this document should rely on their own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstance.

Published By:

Entertainment Services and Technology Association (ESTA)
271 Cadman Plaza PO Box 23200
Brooklyn, NY 11202-3200
USA
Phone: +1-212-244-1505
Email: standards@esta.org

ESTA's Technical Standards Program

ESTA's 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 and safety within the entertainment industry by creating recommended practices and standards, monitoring standards issues around the world on benefit of our members, and improving communications and safety within the industry. In its technical standards development activities, ESTA works closely with other industry organizations, including ESA, CITT, USITT and VPLT, in addition to representing the interests of ESTA members to ANSI, UL, ASCE, ICC, and NFPA. ESTA is an ANSI Accredited Standards Developer.

The Technical Standards Council (TSC) established by ESTA's Board of Directors to oversee and coordinate the Technical Standards Program. Made up of individuals experienced in standards development work from throughout our industry, the Committee approves all projects undertaken and assigns them to the appropriate working group. The Technical Standards Council employs a Technical Standards Manager to coordinate the work of the Committee and its working groups as well as maintaining a "Standards Watch" on behalf of members. Working groups include: Control Protocols, Electrical Power, Event Safety, Floors, Fog and Smoke, Followspot Positions, Mental Health & Well-being Management, Photometrics, Rigging, Stage Machinery, and Prop Weapons Safety.

ESTA encourages active participation in the Technical Standards Program. There are several ways to become involved. The easiest way to actively participate is to respond to any of the public reviews advertised on ESTA's [public review web page](#). The next level of participation requires completion of an application to become a working group member; applications are available from the TSP's [procedural documents web page](#). Application as an Observer with non-voting status affords access to updates on standards development documents. Application as a voting participant affords full access to a consensus voice that helps shape the industry. Voting status carries responsibilities of responding to letter ballots and attending meetings, but membership in ESTA or any other organization is not a requirement for participation in the TSP. One can also become involved by requesting that the TSC develop a standard or a recommended practice in an area of concern to them.

The 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.

Investors in Innovation

The Technical Standard Program (TSP) is financially supported by ESTA and by companies and individuals who make donations to the TSP. Contributing companies and individuals who have helped fund the TSP are recognized as "Investors in Innovation". The Investors in Innovation when this standard was approved by ANSI's Board of Standards Review are gratefully acknowledged as follows:

[Insert the current Investors table here]

Memorial donor: The Estate of Ken Vannice

All donations to the Technical Standards Program benefit the entire program, and are not directed to any specific use or project within the program. Please help support the Technical Standards Program by becoming an Investor in Innovation. Visit our website at <http://tsp.esta.org/invest>, or contact the ESTA office at 1-212-244-1505 and select "TSP" from the menu.

Contact Information**Technical Standards Manager**

Richard J. Nix
ESTA
271 Cadman Plaza PO Box 23200
New York, NY 11202-3200
USA
+1-212-244-1505
richard.nix@esta.org

Technical Standards Council Co-chairpersons

Alan Rowe
I.A.T.S.E Local 728
+1-310-702-2909
amrowe@iatse728.org

Dan Culhane
Wenger Corp
+1-612-868-4769
culhane.dan@gmail.com

Rigging Working Group Co-chairpersons

Bill Sapsis
Sapsis Rigging, Inc.
+1-215-228-0888
bill@sapsis-rigging.com

Chris Kaiser
Syracuse Scenery & Stage Lighting, Inc.
+1-315-453-8096
ckaiser@syracusescenery.com

Acknowledgments

The Rigging Working Group members, when this document was approved by the working group on , are gratefully acknowledged below.

Voting members:

Observer (non-voting) members:

Interest category codes:

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

Table of Contents

Notice and Disclaimer.....	ii
Investors in Innovation.....	iv
Contact Information.....	v
Acknowledgments.....	vi
Table of Contents.....	vii
1 Introduction.....	1
2 Scope and Purpose.....	1
3 Definitions.....	1
4 Sign Categories.....	2
4.1 Hazard alerting sign.....	2
4.2 System information and operation signs:.....	2
5 Sign Content.....	2
5.1 General.....	2
5.2 Hazard alerting signs.....	2
5.3 System information and operation signs (See Annex G).....	3
6 Sign Design (See Annex C).....	3
6.1 General.....	3
6.2 Hazard alerting signs (See Annex A and Annex F).....	4
6.3 System information and operation signs.....	5
7 Sign Placement.....	5
Annex A.....	6
Annex B.....	7
Annex C.....	8
Annex D.....	9
Annex E.....	10
Annex F.....	11
Annex G.....	12
ANNEX A HAZARD SIGN COMPONENTS AND COLORS.....	8
ANNEX B SUPPLEMENTAL INFORMATION.....	9
ANNEX C GUIDING PRINCIPLES FOR RIGGING SIGNAGE.....	10
ANNEX D RA/RR GENERAL EXAMPLE.....	11
ANNEX E TYPICAL RESIDUAL HAZARDS.....	12
ANNEX F HAZARD SIGN SAMPLE LAYOUTS.....	13
ANNEX G SYSTEM INFORMATION AND OPERATION SIGN SAMPLES.....	14

1 Introduction

At the time the ESTA Technical Standards Program Rigging Working Group began work on the ANSI E1.81 Rigging System Signage standard, many E1 Entertainment Rigging Standards and rigging specifiers reference the ANSI Z535 standard set or components of the set. ANSI Z535 is a set of standards developed to improve the identification of potential hazards in the workplace and ensure effective communication of safety information.

Rigging signage is specified or produced by, and affects a wide entertainment rigging system audience; users, facilities managers, system contractors, installers, manufacturers, consultants, and design professionals. Access to the ANSI Z535 standards set is limited, and in keeping with its mission, encompasses many areas beyond entertainment rigging systems concerns. This standard is created to apply to specific concerns and conditions of entertainment rigging systems as a replacement standard to ANSI Z535.2 Environmental and Facility Safety Signs. This standard continues use of ANSI Z535.1 Safety Colors for hazard related signs, and diverges for other non-hazard venue sign types to better fit the specific needs of the entertainment industry. This standard does not affect the additional components of the ANSI Z535 standards set.

ANSI E1.81 distills and incorporates the intent of existing ANSI hazard warning sign design requirements while considering the typical environment for sign placement, and elaborates on the process for identifying and determining the degree of rigging system hazards.

2 Scope and Purpose

2.1 This standard establishes requirements for the design, construction, and placement of signs used to identify hazards and inform persons working with static, manual, or motorized entertainment rigging systems, and fire safety curtains. A recommended method is provided for the determination of the hazards of which persons must be warned, as well as examples of the method applied to typical rigging systems.

2.2 This standard does not apply to labels attached to equipment at the time of manufacture or safety signage not pertaining to the installed rigging systems; for example exit signs and fire extinguisher locations. When fall protection systems are considered a component of the rigging system, this standard applies to fall protection systems. (See [Annex note B.2.2](#))

2.3 The provisions of this standard are not intended to prohibit any design, or methods of communicating sign content, provided that the alternative is at minimum the equivalent in quality and effectiveness of that described in this standard.

2.4 This standard shall not serve to allow signage that would replace training.

2.5 Annex note references – This document uses annex notes to provide additional reference information about certain specific section requirements, concepts, or intent. Subject matter with corresponding annex notes is identified by (See Annex note). The associated reference text is found in the Annex B section, identified with the referring text section number, e.g. an Annex Note to section 3.2 will be identified in the annex section as B.3.2.

3 Definitions

3.1 competent person: 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 hazards.

3.2 hazard pictogram: a graphic representation intended to convey a safety message without the use of words.

3.3 label: for this standard, label is a term used to denote manufacturer supplied product information affixed to the product.

3.4 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.

3.5 safety alert symbol: the equilateral triangle surrounding an exclamation point used only on hazard alerting signs.

3.6 shall: a term used in this standard to indicate that an action is mandatory.

3.7 should: a term used in this standard to indicate that an action is recommended under most conditions, but is not mandatory.

3.8 sign: for this standard, sign is a visual alerting device located in a workplace or public area that provides safety information, hazard warnings, operational or general information.

3.9 signal word: signal words (DANGER, WARNING, and CAUTION) identify the level of hazard specific to the situation. Signal words are located in the top panel of the sign.

3.10 word message: description of the hazard or any required mitigation actions.

4 Sign Categories

4.1 Hazard alerting sign

A sign that directly relates to a hazard.

4.1.1 This sign shall identify the hazard, the level of risk, the probable consequence of involvement with the hazard, and how the hazard may be avoided or mitigated.

4.1.2 Hazard classifications

4.1.2.1 Danger – indicates a hazardous situation that, if not avoided, will result in death or serious injury.

4.1.2.2 Warning – indicates a hazardous situation that, if not avoided, could result in death, serious injury, or significant damage to property or system components.

4.1.2.3 Caution - indicates a hazardous situation that, if not avoided, could result in minor/moderate injury, or minor/moderate damage to property or system components. .

4.2 System information and operation signs:

A sign that provides system and related information such as:

4.1.2 Operational limits such as line set capacities and hoist capacities.

4.2.2 Contact information (e.g. architect/engineer, system designer, consultant, installer, major equipment manufacturers).

4.2.3 Operating/loading bridge capacity.

4.2.4 Lifting media size and type.

4.2.5 Location of Operations and Maintenance Manual.

4.2.6 Operational guidance (e.g. manual release station operation).

4.2.7 Fire safety curtain systems signs – signage content as required per ANSI E1.22.

5 Sign Content

5.1 General

5.1.1 Signs content shall be designed for quick and easy comprehension by the intended audience. (See [Annex C](#))

5.2 Hazard alerting signs

Sign content shall be derived from risk assessment and risk reduction (RA/RR) documents generated for the entertainment rigging systems, and as determined by the systems' established ANSI Entertainment Rigging Standards, or qualified person(s). (See [Annex D](#) and [Annex E](#))

5.3 System information and operation signs (See [Annex G](#))

5.3.1 Signs shall be used to inform persons of:

5.3.1.1 Limits of use of the system, as identified by the manufacturer and RA/RR; (See [Annex note B.5.3.1.1](#))

5.3.1.2 The requirement that the system be operated only by trained and authorized users;

5.3.1.3 Procedural strategies for use of the system, including required actions, prohibited actions, and required personal protective equipment, as identified by RA/RR;

5.3.1.4 Contact information as is available for the system designer, major system components manufacturers, and system installer;

5.3.1.5 Other information as is available relevant to using the system as determined by the system designer, major system components manufacturer, or system installer. (See [Annex note B.5.3.1.5](#))

5.3.1.6 Sign content shall not be provided in lieu of operator training. (See [Annex note B.5.3.2](#))

6 Sign Design (See [Annex C](#))

6.1 General

6.1.1 Lettering shall be in a sans serif font.

6.1.2 Text should be left justified. (See [Annex note B.6.1.2](#))

6.1.3 Lettering shall be of a size that enables a person with normal vision, including corrected vision, to read the safety sign message panel text at a safe viewing distance from the hazard under normal, non-production lighting conditions.

6.1.4 In situations where signage is required for warnings or information under production lighting conditions, the signage should be designed for legibility under those conditions.

6.1.5 Base background color of signs shall have a high contrast ratio to provide enhanced text legibility.

6.1.6 An adequate number of signs shall be provided that will enable individuals operating or using the rigging system equipment to be informed by the sign(s). (See [Annex note B.6.1.6](#))

6.1.7 Language

6.1.7.1 Signs shall be in the commonly understood language of the operators and occupants of the venue. (See [Annex note B.6.1.4.1](#))

6.1.7.2 For multilingual venues, signage may be posted in more than one language on the same sign or by the provision of additional signage.

6.1.8 Sign Materials

6.1.8.1 Signs shall be made of materials that allow for good color stability, symbol and pictogram legibility, and word message legibility for the life of the sign, and are suitable for the anticipated environment and duration of use.

6.1.8.2 Signs shall be regularly inspected as components of the rigging system. Signs shall be replaced when they are no longer legible, or when venue conditions have changed rendering a sign no longer accurate or appropriate.

6.2 Hazard alerting signs (See [Annex A](#) and [Annex F](#))

6.2.1 General

6.2.1.1 Signs for entertainment rigging systems shall be designed to identify hazards under existing or anticipated site conditions.

6.2.1.2 Background color for pictogram and word message panels shall be black with white text or white with black text.

6.2.1.3 For multi-hazard/multi-signal word formats each hazard shall be ordered according to its seriousness level and be placed below the appropriate signal word. Additional pictograms or word messages may be located under or adjacent to the signal word. Outline format should be used to separate portions of the word message with additional lines and/or bullets.

6.2.1.4 Operational instructions shall not be included on hazard alerting signs.

6.2.2 Signal words and symbols

6.2.2.1 Hazard alerting signs shall have a signal word matching the appropriate hazard classification.

6.2.2.2 Safety alert symbols can be used in combination with a word message, but shall not replace the word message.

6.2.2.3 The solid triangle portion shall be the same color as the signal word lettering, and the exclamation mark portion shall be the same color as the signal word panel background.

6.2.2.4 As an alternative, the safety alert symbol may consist of a black triangle band and black exclamation mark on a safety yellow triangle.

6.2.2.5 Signal words shall be in upper case letters.

6.2.2.6 Signal word panel colors (See [ANNEX A – COLORS](#))

6.2.2.6.1 DANGER: The word DANGER shall be in white letters on a safety red background.

6.2.2.6.2 WARNING: The word WARNING shall be in black letters on a safety orange background.

6.2.2.6.3 CAUTION: The word CAUTION shall be in black letters on a safety yellow background.

6.2.3 Hazard pictograms:

6.2.3.1 Hazard pictograms may be used to clarify, supplement, or substitute a portion of a word message found in the message panel of the sign, provided there is a means to inform persons of the pictogram's meaning or the associated hazards would be evident to a reasonable, untrained individual. (See [Annex note B.6.2.3.1](#))

6.2.3.2 When used with a word message, pictograms shall be compatible with the word message.

6.2.3.3 Pictograms shall be visible and legible in the hazard area(s).

6.2.4 Word message design

6.2.4.1 Message panel lettering shall be a combination of upper and lower case letters. Upper case only lettering may be used for short messages or emphasis of individual words.

6.2.4.2 Word message content shall be separated with bullets, numbers, or blank lines.

6.3.4.3 Determination of safe viewing distance for the message panel text shall take into consideration a reasonable hazard avoidance reaction time.

6.2.4.4 Signal word letter height should be at least 50 percent greater than the height of a capital H in the majority of the message panel wording.

6.3 System information and operation signs

6.3.1 Lettering shall be of a size that enables a person with normal vision, including corrected vision, to read the safety sign from the expected viewing distance under normal, non-production lighting conditions.

6.3.2 Safety alert words, symbols, and panel colors are not required be used with this sign category. (See [Annex note B.6.3.2](#))

6.3.3 Signage colors should be chosen to allow for adequate visual separation from the surrounding area.

6.3.4 In situations where signage is required for information under production lighting conditions, the signage should be designed for legibility under those conditions.

7 Sign Placement

7.1 Signs shall be placed to alert and inform the viewer from a safe and appropriate viewing distance.

7.2 Hazard signs shall be placed in the immediate vicinity of the hazard, or in the access area or pathway leading to the hazard. (See [Annex note B.7.2](#))

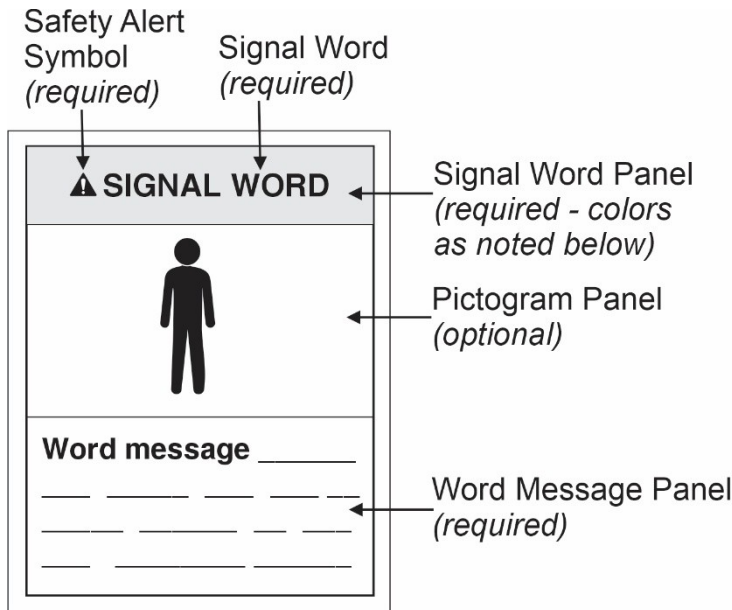
7.3 For signs warning of hazards identified as existing during low level production lighting conditions, the signs shall be located in an area where lighting conditions are sufficient to read the sign message panel text at a safe viewing distance from the hazard (where practical) or shall be sufficiently illuminated by primary or secondary sources.

7.4 Signs shall be placed so that they are legible, not distracting, and do not create an additional hazard.

7.5 Sign location shall take into account potential visual obstructions created by movements in venue systems or equipment, and lighting changes. (See [Annex note B.7.4](#))

7.6 Signs shall be mounted or otherwise attached in a secure manner, suitable for the environment, including anticipated changes, and duration of use. (See [Annex note B.7.5](#))

Annex A
(Normative)
HAZARD SIGN COMPONENTS AND COLORS



**HAZARD
WARNING
SIGN
COMPONENTS**

SIGNAL WORD PANEL COLORS

(close approximations are acceptable)



PMS 186 C
CMYK: C2,M100,Y85,K8
RGB: 200,16,46



PMS 151 C
CMYK: C0,M60,Y100,K0
RGB: 255,130,0



PMS 109 C
CMYK: C0,M9,Y100,K0
RGB: 254,209,0

SIGNAL WORD PANEL VARIATIONS



Annex B
(informative)
SUPPLEMENTAL INFORMATION

B.2.2 Fall protection systems will normally require meeting all requirements of ANSI Z359 for fall protection systems, including any signage requirements.

B.5.1.1 Language used on signs should be clear, direct, and concise. The number of concepts expressed on a single sign should be limited in order to avoid diluting the message and fatiguing the reader.

B.5.3.1.1 Load capacities, maximum and minimum speeds, maximum number of axes in motion, and duty cycle information, as well as maximum or minimum number of users, should all be included here.

B.5.3.1.5 Information about the size and weight of counterweight, references to modular elements in the system, or information about system accessories may be included here.

B.5.3.2 Signs which provide specific operational instructions should be avoided, or, if deemed necessary by RA/RR, should include a prohibition against use by untrained users.

B.6.1.2 A consistent left margin makes reading easier to navigate by providing for a more natural sweep of the eye. This is especially important for longer text lengths. Full justification often introduces odd gaps between words. The use of center alignment may be preferable for the appearance of smaller text lengths or for calling attention to text lines.

B.6.1.4.1 Consideration should be given to alternate language on signs that may be required for warnings and information to assist persons with disabilities.

B.6.1.6 The quantity of signage provided should not be in excess of what is necessary for information to be communicated.

B.6.2.3.1 Means to inform may include e.g. instructions, training materials, manuals, etc. Well-designed hazard pictograms communicate hazard information quickly and across language and literacy barriers. The use of pictograms is encouraged wherever practical.

B.6.3.2 The ANSI Z535 standard set includes sign categories not included in this standard. There is no prohibition intended in this standard for design and color requirements for ANSI Z535 series Safety Instruction or Notice signs.

B.7.2 Consideration should be given to alternate placement of signs that may be required for warnings and information to assist persons with disabilities.

B.7.4 Signs should not be located in areas where they may be removed by the motion of an identified hazardous device, or rendered ineffective by situational conditions of the hazard. Signs should not be blocked by moveable items such as curtains, scenery, doors, and racks. Placement should take into account expected situational changes that may obstruct the view of the sign, such as the movement of a curtain or other equipment.

B.7.5 Placement of signs should protect the signs from damage due to environmental elements (e.g., fading from exposure to ultraviolet radiation, abrasion, or degradation from substances such as lubricants, chemicals, and dirt).

Annex C
(informative)
Supplemental Information

GUIDING PRINCIPLES FOR RIGGING SIGNAGE

Signs should clearly indicate the necessary safety hazard or information.

For efficient legibility, comprehension, and reaction, signs should have the minimum amount of information needed to convey the safety hazard or information. Information should be written in a bulleted or list form and use additional spacing between lines when possible. Consistent panel background colors are helpful for ease of comprehension.

The use of a paragraph form, particularly for capacity or similar information, is inadvisable and should be avoided. The inclusion of excess or densely formatted information dilutes the legibility of the sign and the effectiveness of the message.

The most important safety or hazard information should appear first on a sign. Signs with the most important safety information should be located in prominent location(s). The nature of this information will vary based on the content of the sign, the nature of the hazard, the reaction time required to avoid the hazard, and the training level(s) of the viewers.

Care should be taken to ensure that language used on hazard and safety signs accurately reflects the level of hazard or risk as determined by the risk analysis. Alarmist language or overemphasis of perceived risk or danger should be avoided.

The same font should be used for all information on a sign. Font size or emphasis (bold, italics, underline) can be used to draw attention to the most important sign information. Fonts and justification of text should be simple and consistent to increase legibility. Font choice should allow for appropriate kerning between characters. Too little or too much spacing in the letter kerning decreases the reading speed and overall legibility of the message.

Information should be presented in an active voice and/or an actionable statement.

EXAMPLE:

Passive: "All unauthorized and untrained personnel are prohibited from operating the counterweight rigging system."

Active: "All users must be trained and authorized."

Care should be given to limit the number of signs posted in a given work area or in association with a particular rigging system. An excess of signs dilutes the most important information, or can lead to key signs being ignored. When additional signs cannot be avoided, placement should take into account whether they detract from or distract from existing safety messaging.

Signage for operational information should serve as a reminder for individuals who have completed the necessary training. Signs that contain detailed, step-by-step operational instructions may lead observers to falsely believe that the information on the sign provides adequate knowledge for safe operation without training. When creating signage with operational instructions, consideration should be given to the individuals with access to the venue and rigging system, whether authorized users or not, what additional safeguards exist against unauthorized access, and the potential risks of unauthorized or misuse of the system.

Annex D
(informative)
Supplemental Information

RA/RR GENERAL EXAMPLE GUIDELINES

RA/RR for the rigging system should be performed throughout design, fabrication, installation, and testing of the system. Additional RA/RR should be performed when the rigging system is modified.

RA/RR should be performed by a group of two or more competent persons or by one qualified person.

The group or person performing the RA/RR should determine the acceptable level of residual risk. Existing ANSI standards for manual, static, or motorized rigging, as well as manufacturer documentation, may provide specific guidelines for acceptable residual risk. Laws in force at the venue location may also define levels of acceptable residual risk.

The group or person conducting the RA/RR should:

- Identify and document the limits of use for the rigging system;
- Identify and document the tasks anticipated throughout the life of the system, as well as any foreseeable misuse;
- Identify and document the hazards associated with each task;
- Estimate the severity of harm associated with exposure to the hazard;
- Estimate the probability of occurrence of harm from exposure to the hazard;
- Quantify the risk by considering the severity and probability of harm;
- Evaluate the level of risk associated with each hazard to determine if the level of risk is acceptable;
- Take measures to reduce or mitigate unacceptable levels of risk, including:
 - Design controls wherein the system design is altered to reduce the level of risk;
 - Guarding controls wherein equipment in the system is fitted with measures to reduce the level of risk;
 - Procedural controls wherein the use of the system is defined and directed to reduce the level of risk;
- Determine whether new or additional hazards have been introduced, or if the level of existing risks have been changed;
- Repeat the process until acceptable levels of residual risk are achieved; and
- Document the RA/RR process, including the mitigating actions taken for each hazard and the resulting reductions in the levels of risk.

Where the identified residual hazard or hazards can be mitigated by signage, the group or person who conducted the RA/RR should determine the sign content.

Annex E
(informative)
TYPICAL RESIDUAL HAZARDS

Risk analysis will result in identification of hazards. The analysis will require determination of the manner of reducing the hazards. Signage is often used to warn of and take action to avoid risks. Signage is not a substitution for training or system documentation.


Some examples where signage is typically selected as a manner of residual risk reduction:




- Falling objects
- Moving and swinging objects
- Electrical shock
- Limited sightlines
- Unauthorized system usage
- Operator training requirements
- Systems loading capacities
- Overloading system
- Pinching/crushing
- Gallery loading limits
- Personal protection equipment requirements
- Inspection requirements
- Working at heights
- Venue structural limitations
- Access limitations
- Component weights and dimensions
- Clearance requirements
- Emergency operations procedures
- Specific procedural requirements


Annex F
(Informative)



HAZARD WARNING SIGNS SAMPLE LAYOUTS



⚠ SIGNAL WORD
Word message _____ _____ _____ _____


⚠ SIGNAL WORD
 Pictogram Panel
Word message _____ _____ _____

⚠ SIGNAL WORD		
 Pictogram Panel	 Pictogram Panel	 Pictogram Panel
Word message _____ _____ _____		

⚠ SIGNAL WORD
 Pictogram Panel
Word message _____ _____ _____

 Pictogram Panel	⚠ SIGNAL WORD	 Pictogram Panel
Word message _____ _____ _____		

 Pictogram Panel	⚠ WARNING
Word message • _____ • _____ • _____	
 Pictogram Panel	⚠ CAUTION
Word message • _____ • _____ • _____	

⚠ SIGNAL WORD	
 Pictogram Panel	Word message _____ _____ _____

Annex G
(Informative)

SYSTEM INFORMATION AND INSTRUCTION SIGN SAMPLES

COUNTERWEIGHT STORAGE

- CLorem ipsum dolor sit amet. Labore tation eirmod accusam quis vel vero nonummy. Vero dolor feugiat.
- Vel blandit nostrud velit elit. Aliquyam diam est invidunt kasd. Nonummy duo nostrud.
- Vel blandit nostrud velit elit. Aliquyam diam est invidunt kasd. Nonummy duo nostrud. Eirmod nibh elit elit.

RIGGING INSPECTIONS

Lorem ipsum dolor sit amet. Labore tation eirmod accusam quis vel vero nonummy. Vero dolor feugiat. Eos augue est blandit esse. Sea diam et gubergren te quis sit et. Clita vel tempor. Kasd eirmod aliquyam vel. Erat tempor ut. Duo eirmod eum diam lorem. Et diam stet diam ea. Takimata labore elit clita amet sed luptatum. Sit sadipscing takimata volutpat est.

Vel blandit nostrud velit elit. Aliquyam diam est invidunt kasd. Nonummy duo nostrud. Eirmod nibh elit elit. Voluptua vel praesent ut voluptua duo sit. Accusam nulla praesent liber dolores ea stet ipsum. Voluptua tempor ipsum. Consequat.

XXXXXXX

XXXXX	XXXXX	XXXXX

NOTICE

RIGGING SYSTEMS INFORMATION

PROJECT: XXXXXXXXXXXX AUDITORIUM STAGE RENOVATION

ARCHITECT: ABC ARCHITECTS ANYWHERE, ST

THEATRE CONSULTANT: GHI CONSULTANTS ANYWHERE, ST

RIGGING CONTRACTOR: JKL COMPANY ANYWHERE, ST

INSTALLED: MONTH YEAR

PROSCENIUM WIDTH: XX'X"
 PROSCENIUM HEIGHT: XX'X"
 STAGE FLOOR TO OVERHEAD STRUCTURE: XX'X"
 STAGE DEPTH FROM PLASTER LINE: XX'X"

RIGGING TYPES:
 MANUAL COUNTERWEIGHT SETS:
 Tracks/Curtains, Scenery - Max Design Set Load XXX lbs
 MOTORIZED HOIST SETS:
 Lighting - Max Design Set Load XXX lbs
 STATICALLY SUSPENDED SETS:
 Main Curtain, Leg Curtains - Max Design Load - XX lbs/ft

COUNTERWEIGHT:
 X" Weight = XX lbs, X" Weight = XX lbs

MAXIMUM SURFACE LIVE LOADS:
 STAGE FLOOR - XXX psf
 GALLERY - XXX psf
 LOADING BRIDGE - XXX psf
 CATWALKS - XXX psf

**TO OPERATE
PULL LEVER**