

**ASME HST-5-2024**  
(Revision of ASME HST-5-2020)

# Performance Standard for Air Chain Hoists

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**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

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Two Park Avenue • New York, NY • 10016 USA

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# FOREWORD

This Standard is one in a series that provides performance requirements for hoists; it was originally issued in 1985. It was developed by The American Society of Mechanical Engineers (ASME) HST Standards Committee, Hoists — Overhead. It serves as a guide to manufacturers of the equipment and to the purchasers and users of the equipment. Standards in this series are

<b>Designator</b>	<b>Title</b>
HST-1	Performance Standard for Electric Chain Hoists
HST-2	Performance Standard for Hand Chain Manually Operated Chain Hoists
HST-3	Performance Standard for Lever Hoists
HST-4	Performance Standard for Overhead Electric Wire Rope Hoists
HST-5	Performance Standard for Air Chain Hoists
HST-6	Performance Standard for Air Wire Rope Hoists

The 2020 edition contained various updates to the definitions and references in [Sections 5-0.2](#) and [5-0.3](#) and [para. A-2.2](#). A new paragraph was added to provide guidance on air supply characteristics and considerations. The scope was revised to reflect the Standard's applicability to U.S. Department of Defense (DOD) applications. When [Nonmandatory Appendix A](#) is invoked, this Standard becomes applicable to hoists used for DOD applications.

This edition introduces a [Nonmandatory Appendix B](#) that offers guidance for using hoists in potentially explosive locations. In [Nonmandatory Appendix A](#), the sections on lubrication and painting have been revised and specific recommendations for Type E hoists have been added. Hoists for marine and other applications have been added to the list for which this Standard is not applicable unless [Nonmandatory Appendix A](#) is invoked. Definitions have been editorially revised, references updated, and a Summary of Changes included.

This Standard is available for public review on a continuing basis. Public review provides an opportunity for additional input from industry, academia, regulatory agencies, and the public-at-large.

This Standard was approved as an American National Standard on November 5, 2024.

# ASME HST COMMITTEE

## Hoists — Overhead

(The following is the roster of the committee at the time of approval of this Standard.)

### STANDARDS COMMITTEE OFFICERS

**J. R. Burkey**, *Chair*  
**M. M. Correa**, *Vice Chair*  
**J. Cassamassino**, *Secretary*

### STANDARDS COMMITTEE PERSONNEL

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**M. M. Correa**, Chevron Upstream and Gas  
**J. Cassamassino**, The American Society of Mechanical Engineers  
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**General.** ASME codes and standards are developed and maintained by committees with the intent to represent the consensus of concerned interests. Users of ASME codes and standards may correspond with the committees to propose revisions or cases, report errata, or request interpretations. Correspondence for this Standard should be sent to the staff secretary noted on the committee's web page, accessible at <https://go.asme.org/HSTcommittee>.

**Revisions and Errata.** The committee processes revisions to this Standard on a continuous basis to incorporate changes that appear necessary or desirable as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published in the next edition of the Standard.

In addition, the committee may post errata on the committee web page. Errata become effective on the date posted. Users can register on the committee web page to receive email notifications of posted errata.

This Standard is always open for comment, and the committee welcomes proposals for revisions. Such proposals should be as specific as possible, citing the paragraph number, the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent background information and supporting documentation.

### Cases

(a) The most common applications for cases are

(1) to permit early implementation of a revision based on an urgent need

(2) to provide alternative requirements

(3) to allow users to gain experience with alternative or potential additional requirements prior to incorporation directly into the Standard

(4) to permit the use of a new material or process

(b) Users are cautioned that not all jurisdictions or owners automatically accept cases. Cases are not to be considered as approving, recommending, certifying, or endorsing any proprietary or specific design, or as limiting in any way the freedom of manufacturers, constructors, or owners to choose any method of design or any form of construction that conforms to the Standard.

(c) A proposed case shall be written as a question and reply in the same format as existing cases. The proposal shall also include the following information:

(1) a statement of need and background information

(2) the urgency of the case (e.g., the case concerns a project that is underway or imminent)

(3) the Standard and the paragraph, figure, or table number

(4) the editions of the Standard to which the proposed case applies

(d) A case is effective for use when the public review process has been completed and it is approved by the cognizant supervisory board. Approved cases are posted on the committee web page.

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**Committee Meetings.** The HST Standards Committee regularly holds meetings that are open to the public. Persons wishing to attend any meeting should contact the secretary of the committee. Information on future committee meetings can be found on the committee web page at <https://go.asme.org/HSTcommittee>.

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# ASME HST-5-2024 SUMMARY OF CHANGES

Following approval by the ASME HST Standards Committee and ASME, and after public review, ASME HST-5-2024 was approved by the American National Standards Institute on November 5, 2024.

ASME HST-5-2024 includes the following changes identified by a margin note, **(24)**.

<i>Page</i>	<i>Location</i>	<i>Change</i>
1	Section 5-0.1	Subparagraph (b)(6) added
1	Section 5-0.2	Definitions for <i>headroom</i> , <i>load suspension parts</i> , <i>lug suspended</i> , and <i>parts</i> editorially revised
4	Section 5-03	Updated
9	Form 5-1.7-1	Cross-references editorially revised
10	Nonmandatory Appendix A	(1) In-text reference citation updated throughout (2) SI values added throughout
10	A-1.1	Revised
10	A-1.3	Subparagraph (c) editorially revised
11	A-1.4	Updated
11	A-2.2	Second and third paragraphs revised
12	Table A-2.3.1-1	Note (1) revised and Note (2) added
13	Table A-2.3.2-1	Note (1) revised, Note (2) added, and subsequent Notes redesignated
13	Table A-2.3.3-1	Notes (1) and (2) revised and Note (3) added
12	A-2.3.4	Title revised
14	Table A-2.3.4-1	Notes revised
14	A-2.5	Revised in entirety
14	A-2.6	Revised in entirety
15	A-3.1.1	Revised
15	A-3.3	Revised
16	A-3.5.1	First sentence added
16	A-3.7.3	Second and third sentences added
18	A-4.10	First sentence added
18	A-3.1.3.3	Last sentence added
18	A-4.1	Paragraphs A-4.1.1 through A-4.1.15 revised
20	A-5	Subparagraph (k) added
21	Nonmandatory Appendix B	Added

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## Chapter 5-0

# Scope, Definitions, References, and Appendices

### SECTION 5-0.1: SCOPE

(24)

(a) This Standard establishes performance requirements for air-powered chain hoists for vertical lifting service involving material handling of freely suspended (unguided) loads using load chain of the roller or welded link types with one of the following types of suspension:

- (1) lug
- (2) hook or clevis
- (3) trolley

(b) This Standard is applicable to hoists manufactured after the date on which this Standard is issued. It is not applicable to

- (1) damaged or malfunctioning hoists
- (2) hoists that have been misused or abused
- (3) hoists that have been altered without authorization of the manufacturer or a qualified person
- (4) hoists used for lifting or supporting people, or
- (5) hoists used for the purpose of drawing both the load and the hoist up or down the hoist's own load chain(s)
- (6) hoists for marine and other applications as required by the Department of Defense (DOD) unless

[Nonmandatory Appendix A](#) has been invoked

The requirements of this Standard shall be applied together with the requirements of ASME B30.16. Please also refer to ASME B30.16 for requirements pertaining to marking, construction, and installation; inspection, testing, and maintenance; and operation.

### SECTION 5-0.2: DEFINITIONS

(24)

*abnormal operating conditions*: environmental conditions that are unfavorable, harmful, or detrimental to the operation of a hoist, e.g., excessively high or low temperatures, exposure to weather, corrosive fumes, dust-laden or moisture-laden atmospheres, and hazardous locations.

*ambient temperature*: the temperature of the atmosphere surrounding the hoist.

*beam*: an overhead standard structural or specially fabricated shape on which the trolley operates.

*brake*: a device, other than a motor, used for retarding or stopping motion by means of friction or power.

*brake, holding*: a friction brake for a hoist that is automatically applied and prevents motion when the air supply is interrupted.

*brake, mechanical load*: an automatic type of friction brake used for controlling loads in a lowering direction. This unidirectional device requires torque from the motor to lower a load but does not impose additional load on the motor when lifting a load. This may also be used as a holding brake if designed as such by the manufacturer.

*braking, control*: a method of controlling speed by removing energy from the moving body or by imparting energy in the opposite direction.

*braking, dynamic*: a method of controlling speed by using the motor as a compressor.

*chain, hand*: the chain provided to control movement of a hand chain-operated trolley.

*chain, load*: the load-bearing chain in the hoist.

*chain, roller*: a series of alternately assembled roller links and pin links in which pins articulate inside the bushings and the rollers are free to turn on the bushings. Pins and bushings are press-fit in their respective link plates.

*chain, welded link*: a chain consisting of a series of interwoven links formed and welded.

NOTE: Load chain properties do not conform to those shown in ASME B30.9.