ASME HST-1–2017
(Revision of ASME HST-1–2012)

Performance Standard for Electric Chain Hoists

AN AMERICAN NATIONAL STANDARD

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Two Park Avenue • New York, NY • 10016 USA

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This Standard will be revised when the Society approves the issuance of a new edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the Committee web page and under http://go.asme.org/InterpsDatabase. Periodically certain actions of the ASME HST Committee may be published as Cases. Cases are published on the ASME website under the HST Committee Page at go.asme.org/HSTcommittee as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The HST Committee Page can be found at http://go.asme.org/HSTcommittee. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting "Errata" in the "Publication Information" section.

The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

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FOREWORD

This Standard is one in a series that provides performance requirements for hoists; it was originally issued in 1982. It was developed by the ASME HST Standards Committee, Hoists — Overhead. It is intended to serve as a guide to manufacturers of the equipment and to the purchasers and users of the equipment.

Standards in this series are as follows:

Designator	Title
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

ASME HST-1–2012 incorporated an appendix that, in conjunction with ASME HST-1, was intended to replace MIL-H-15317, which was previously used by the Department of Defense (DoD) to procure electric chain hoists. ASME HST-1–2012 was rewritten and reorganized to harmonize with ASME B30.16 to eliminate duplication and conflicts in content. The requirements for this Standard shall be applied together with the requirements of B30.16 for the products covered.

ASME HST-1–2012 was approved by ANSI as an American National Standard on October 4, 2012.

This edition of ASME HST-1 includes revised definitions and other changes, and addresses two-speed and variable speed operation.

Following the approval of the ASME HST Standards Committee and ASME, and after public review, ASME HST-1–2017 was approved by the American National Standards Institute on November 17, 2017.

ASME HST COMMITTEE
Hoists — Overhead

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

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CORRESPONDENCE WITH THE HST COMMITTEE

General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, HST Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016-5990
http://go.asme.org/Inquiry

Proposing Revisions. Revisions are made periodically to the Standard 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 periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Proposing a Case. Cases may be issued to provide alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the Standard and the paragraph, figure, or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Standard to which the proposed Case applies.

Interpretations. Upon request, the HST Standards Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the HST Standards Committee.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at http://go.asme.org/InterpretationRequest. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of the HST Standards Committee at the above address. The request for an interpretation should be clear and unambiguous. It is further recommended that the Inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry in one or two words.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. Please provide a condensed and precise question, composed in such a way that a "yes" or "no" reply is acceptable.
Proposed Reply(ies):	Provide a proposed reply(ies) in the form of "Yes" or "No," with explanation as needed. If entering replies to more than one question, please number the questions and replies.
Background Information:	Provide the Committee with any background information that will assist the Committee in understanding the inquiry. The Inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

Moreover, ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Standard requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the Inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

Attending Committee Meetings. The HST Standards Committee regularly holds meetings and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the HST Standards Committee. Future Committee meeting dates and locations can be found on the Committee Page at http://go.asme.org/HSTcommittee.

Chapter 1-0
Scope, Definitions, References, and Appendices

SECTION 1-0.1: SCOPE

(a) This Standard establishes performance requirements for electric 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
(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 used for marine and other applications as required by the Department of Defense (DoD)

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 1-0.2: DEFINITIONS

abnormal operating conditions: environmental conditions that are unfavorable, harmful, or detrimental to the operation of a hoist, such as excessively high or low temperature, 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 power is off.

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 any additional load on the motor when lifting a load. This type of brake 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 generator, with the energy being dissipated in resistors.

braking, mechanical: a method of controlling or reducing speed by friction.

braking, regenerative: a method of controlling speed in which the electrical energy generated by the motor is fed back into the power system.

chain, load: the load-bearing chain in a 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 B29.1 or ASME B30.9.

contactor: an electromechanical device for opening and closing an electric power circuit.

control actuator: a manual means at the operating station by which hoist controls are energized.

control enclosure: the housing containing the electrical control components.

cushioned start: an electrical or mechanical method for reducing the rate of acceleration of trolley motion.

hazardous (classified) locations: locations where fire or explosion hazards may exist. Locations are classified depending on the properties of the flammable vapors, liquids or gases, or combustible dusts or fibers that may be present, and the likelihood that a flammable or combustible concentration or quantity is present. Refer to NFPA 70.