

ASME HST-1–2012

[Revision of ASME HST-1–1999 (R2004)]

Performance Standard for Electric Chain Hoists

AN AMERICAN NATIONAL STANDARD



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Mechanical Engineers**

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Date of Issuance: November 28, 2012

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FOREWORD

This Standard is one in a series that provides performance requirements for hoists that 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, purchasers, and users of the equipment.

The other Standards in this series are

- HST-2 Hand Chain Manually Operated Chain Hoists
- HST-3 Manually Lever Operated Chain Hoists
- HST-4 Electric Wire Rope Hoists
- HST-5 Air Chain Hoists
- HST-6 Air Wire Rope Hoists

This revision includes an appendix that, in conjunction with ASME HST-1–2012, is intended to replace MIL-H-15317, previously used to procure electric chain hoists by the Department of Defense (DOD).

Suggestions for improvement of this Standard are welcome. They should be addressed to the Secretary, ASME HST Standards Committee, Three Park Avenue, New York, NY 10016-5990.

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



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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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, and attending Committee meetings. Correspondence should be addressed to:

Secretary, HST Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

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 for the purpose of providing 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, 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.

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.
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. 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 this format may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

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, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the HST Standards Committee.



ASME HST-1–2012

SUMMARY OF CHANGES

Following approval of the ASME HST Standards Committee and ASME, and after public review, ASME HST-1–2012 was approved by the American National Standards Institute on October 4, 2012.

ASME HST-1–2012 is rewritten and reorganized to conform to current ASME format for standards, and harmonized with ASME B30.16 to eliminate duplication and conflicts in content. The requirements of this Standard shall be applied together with the requirements of ASME B30.16 for the products covered.



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PERFORMANCE STANDARD FOR ELECTRIC CHAIN HOISTS

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 the hoist or trolley motion by friction or power means.

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 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.

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 or ASME B29.1.

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.

controlled braking means: 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 by resistance.

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.

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,

