ASME A17.3-2017

(Revision of ASME A17.3-2015)

Safety Code for Existing Elevators and Escalators

Includes Requirements for Electric and Hydraulic Elevators and Escalators

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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The American Society of Mechanical Engineers
Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: May 23, 2018

The next edition of this Code is scheduled for publication in 2021. This Code will become effective 6 months after the Date of Issuance.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Code. The interpretations are included with this edition. Interpretations are also published on the ASME website under the Committee Pages at http://cstools.asme.org/ as they are issued.

Errata to codes and standards may be posted on the ASME Web site 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.

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The American Society of Mechanical Engineers
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FOREWORD

The American Society of Mechanical Engineers (ASME) has published since 1921 a safety code for elevators, escalators, and related equipment. The following is a brief history of how the various editions of this Code addressed the matter of retroactive requirements for existing installations.

The 1921 edition did not differentiate between new and existing installations.

The second edition (1925) and third edition (1931) contained the following statements in their Introductions:

> New and Old Installations. After the date on which the Code becomes effective, all new construction and installations shall conform to its provisions. Equipment installed prior to that date need not, however, be modified to conform to its rules except where required by the key number opposite the rule. Reference figures attached to the various rules or paragraphs indicate when such rules or paragraphs become effective when applied to existing installations as follows:
>
> *Key to Index Figures*
>
> (0) To be applied immediately.
>
> (1) Not to be applied to existing installations.
>
> (2) To be applied to existing installations only to the extent ordered by the administrative authority.
>
> (3) To be applied to existing installations when next renewal of cables or other parts affected is made.
>
> (6) To be applied to existing installations six months after the adoption of this Code.
>
> (12) To be applied to existing installations 1 year (12 months) after the adoption of this Code.
>
> (24) To be applied to existing installations two years after the adoption of this Code.

This practice was discontinued with the fourth edition. Quoting from ASA A17.1-1937:

> This Edition of the Code makes no reference to the application of the individual rules to Existing Installations, and the key numbers in the previous Edition have been omitted. This matter is left to the authorities drafting legal regulations, who are familiar with the local conditions. A too extensive retroactive application is not advisable in any case. The Code contains many rules intended to obviate minor hazards which can be easily eliminated in a new installation, but the change of an existing installation might involve a financial outlay entirely out of proportion to the benefits secured.
>
> The Sectional Committee recommends that rules for hoistway-door interlocks, car-gate contacts, hoistway limit switches, and the entire Part VI (Inspection, Maintenance, and Operation) be made applicable to every installation already existing at the time of the adoption of the Code, and that provisions be made also to secure adequate under-car safeties for such installations.

This practice remained essentially unchanged through all later editions of the Code. Only the requirements for inspection, maintenance, alteration, repair, and replacement apply retroactively to existing installations. Quoting from the Preface of ANSI/ASME A17.1-1981:

> Not all of the Rules of the Code apply to equipment installed prior to its adoption by jurisdictional authorities, but those which do apply to existing as well as to new installations are outlined under Scope in the Introduction.
>
> The Code contains many Rules intended to obviate hazards which can be avoided in new installations; but, if such Rules were made to apply to existing installations, they would entail financial outlay out of proportion to the benefits derived.
>
> In view of past accident experience resulting in serious injuries at hoistway and car entrances, it is recommended that, as a minimum, the Rules covering safety requirements for hoistway and car doors in this Code be made to also apply to existing elevator installations.
>
> The accident experience on elevators has also indicated that accidents occur on the older existing equipment, especially with a winding-drum-type machine and where the car safety device and the terminal stopping devices are either absent or inadequate. It is, therefore,

recommended that adequate under-car safeties and terminal stopping devices be required for existing installations as well as new installations.

On the basis of experience supported by accident records, the jurisdictional authority adopting the Code should decide on what requirements, if any, are to be applied to existing installations.

Numerous state and local jurisdictions had taken this advice and developed their own codes for existing installations. The need for a nationally recognized consensus code for existing installations became evident and the ASME A17 Elevator and Escalator Committee undertook the task and issued the first edition of the A17.3 Safety Code for Elevators and Escalators in 1986.

The second edition of the Code incorporated the revisions in A17.3a-1989 as well as additional revisions.

The third edition of the Code incorporated the changes made in A17.3a-1991 and A17.3b-1992 as well as the revisions shown in its Summary of Changes. Part VII, Hand Elevator, and Part VIII, Sidewalk Elevator, appeared for the first time in that edition.

The fourth edition of the Code incorporated the changes made in A17.3a-1994 and A17.3b-1995 as well as the revisions shown in its Summary of Changes. Part X, Private Residence Elevators, and Nonmandatory Appendix D appeared for the first time in that edition.

The fifth edition of the Code incorporated the changes made in A17.3a-2000 as well as the revisions shown in its Summary of Changes.

Issuance of addenda to ASME A17.3 was discontinued after publication of the fifth edition.

This tenth edition of the Code incorporates the revisions shown in the Summary of Changes.

The following is a list of the final approval dates, dates of issuance, and effective dates for the previous and current editions and addenda:

	Editions and Addenda	Approved	Issued	Effective
First Edition	ASME/ANSI A17.3-1986	February 12, 1986	May 30, 1986	November 30, 1986
Addenda	ASME/ANSI A17.3a-1989	November 10, 1989	December 31, 1989	July 1, 1990
Second Edition	ASME A17.3-1990	October 8, 1990	December 31, 1990	July 1, 1991
Addenda	ASME A17.3a-1991	October 7, 1991	December 12, 1991	June 12, 1992
	ASME A17.3b-1992	October 16, 1992	December 15, 1992	June 16, 1993
Third Edition	ASME A17.3-1993	September 29, 1993	December 31, 1993	July 1, 1994
Addenda	ASME A17.3a-1994	August 18, 1994	November 30, 1994	June 1, 1995
Addenda	ASME A17.3b-1995	August 10, 1995	November 30, 1995	June 1, 1996
Fourth Edition	ASME A17.3-1996	October 7, 1996	February 20, 1997	August 21, 1997
Addenda	ASME A17.3a-2000	January 7, 2000	February 29, 2000	August 30, 2000
Fifth Edition	ASME A17.3-2002	March 12, 2002	July 22, 2002	January 22, 2003
Sixth Edition	ASME A17.3-2005	March 29, 2005	September 30, 2005	March 31, 2006
Seventh Edition	ASME A17.3-2008	July 16, 2008	January 9, 2009	July 9, 2009
Eighth Edition	ASME A17.3-2011	July 6, 2011	August 26, 2011	February 26, 2012
Ninth Edition	ASME A17.3-2015	April 17, 2015	August 28, 2015	February 28, 2016
Tenth Edition	ASME A17.3-2017	December 12, 2017	May 23, 2018	November 23, 2018

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(17)

PREFACE

GENERAL This Code is intended to serve as the basis for state and local jurisdictional authorities in adopting retroactive requirements for existing elevators and escalators to enhance the safety of the general public. It is also intended as a standard reference of safety requirements for the guidance of architects, engineers, insurance companies, manufacturers, and contractors, and as a standard of safety practices for building owners and managers of structures where existing elevator equipment covered in the scope of the Code is used.

The purpose of this Code is to establish minimum requirements that will provide a reasonable degree of safety for the general public. While many of these requirements will also increase the degree of safety for the elevator mechanic and inspector, this area has not been specifically addressed at this time.

Operation and maintenance instructions in this Safety Code are intended for general applications. The equipment manufacturer or installer or both shall be consulted for specific operating or maintenance instructions.

FORM AND ARRANGEMENT This Code consists of ten Parts, each covering a specific subject so as to facilitate reference to the requirements.

As an introduction in each Part, the Scope is described to clearly indicate the applicability of the requirements contained therein. Each requirement has been given an appropriate title with a number to facilitate referencing.

The Foreword, Preface, and Appendices that are included in this document have been approved by the A17 Committee, but are not part of this American National Standard.

METRIC (SI) UNITS This edition of the Code contains metric (SI) units as well as imperial units. The SI units in the text have been directly (soft) converted from the imperial units. The tables and graphs have not been converted; however, the applicable conversion factors are included for each table and graph. Further information on the use of SI units is contained in ASTM E380, Metric Practice Guide, and ASME Guide SI-1, Orientation and Guide for Use of SI (Metric) Units.

Current committee policy is to have standards published with information in the form that will best serve the needs of Code users. It is not the intent of the Code to favor a design in SI units over one made in imperial units, or conversely. In converting to SI units, an effort has been made to maintain the precision of the original values so that the accuracy of the converted values is neither exaggerated nor understated. Therefore, if there is a difference in the dimensions or the results of calculations between the two systems of units, the imperial units will govern.

RECOMMENDED ADOPTION PROCEDURES Prior to an adoption of this Code, a public hearing should be held to permit all interested parties to voice objections they may have to particular Rules, and to provide an opportunity for the adopting authority to explain the reasons for such Rules. Many state laws and city ordinances require such hearings but even where not required, it is strongly recommended that hearings be held.

Drafts of the proposed Code should be made available to all interested parties at least 30 days prior to the date set for the public hearing.

The responsibility of complying with this Code rests with the owner of the existing installation. The owner may assign the responsibility to another party by contract. Authorities, in their legislation adopting this Code, should address this subject.

DATE OF APPLICATION At the time of adoption of the Code, the authority having jurisdiction should determine the date existing installations must conform to the requirements.

It is recommended that a local committee, consisting of representatives of groups directly interested, be appointed to study the existing local conditions and to determine the length of time existing installations should be given between adoption of this Code and compliance with each provision.

Representatives of the following groups should be considered for serving on such a committee:

(a) building owners
(b) real estate management companies
(c) architects and consulting engineers
(d) manufacturers of the equipment
(e) maintenance companies
(f) insurance companies
(g) city and state enforcement officials
(h) elevator labor unions

Abbreviations Used in This Code			
Abbreviation	**Unit**	**Abbreviation**	**Unit**
A	ampere	lb	pound (mass)
°C	degree Celsius	lbf	pound (force)
deg	degree (angle)	lx	lux
°F	degree Fahrenheit	m	meter
ft/min	foot per minute	m^2	square meter
ft/sec	foot per second	m^3	cubic meter
ft	foot	mA	milliampere
fc	footcandle	m/s	meter per second
ft^2	square foot	m/s^2	meter per second per second
ft^3	cubic foot	mm	millimeter
ft/sec^2	foot per second per second	mm^2	square millimeter
h	hour	mm^3	cubic millimeter
Hz	hertz	MPa	megapascal
in.	inch	N	newton
$in.^2$	square inch	psi	pound per square inch
$in.^3$	cubic inch	s	second
kg	kilogram	V	volt
kPa	kilopascal		

ASME ELEVATOR PUBLICATIONS The American Society of Mechanical Engineers (ASME) has developed and published safety codes and standards for elevators, escalators, and related equipment since the first edition of A17.1, Safety Code for Elevators and Escalators, which was published in 1921.

This Code is one of the numerous codes and standards that have been or are being developed by The American Society of Mechanical Engineers.

The following publications are of special interest to users of this Code. For prices and availability:

Tel: 800-843-2763
Fax: 973-882-1717
E-Mail: customercare@asme.org
ASME Website: www.asme.org/shop

ASME A17.1/CSA B44, Safety Code for Elevators and Escalators. This American National Standard Safety Code covers the design, construction, installation, operation, testing, maintenance, alteration, and repair of elevators, dumbwaiters, escalators, moving walks, and material lifts.

ASME A17.2, Guide for Inspection of Elevators, Escalators, and Moving Walks. This Guide gives detailed procedures for the inspection and testing of elevators, escalators, and moving walks required to conform to the Safety Code for Elevators and Escalators, A17.1-1955 and later editions and the Safety Code for Existing Elevators and Escalators, A17.3. Subsections are arranged to focus on periodic inspection and test requirements, as well as acceptance criteria.

Inspection Checklists. The checklist forms shown in ASME A17.2 are posted on the ASME website: www.asme.org.

ASME A17.4, Guide for Emergency Personnel. This guide for emergency personnel (fire, police, etc.), building owners, lessees, and building operating managers explains the proper procedures to be used for the safe removal of passengers from stalled cars as well as firefighters' service operating procedures.

CAN/CSA-B44.1/ASME A17.5 Elevator and Escalator Electrical Equipment. This Code contains requirements for obtaining, labeling, and listing of drive machine controllers, logic controllers, and operating devices for stating, stopping, regulating, controlling, or protecting electric motors, generators, and all other electrical equipment, for elevators, escalators, moving walks, dumbwaiters, wheelchair lifts, and stairway lifts.

Published Interpretations. Interpretations of the various A17 standards are published periodically.

Interpretations of A17.1 and A17.2 approved by the A17 Committee from June 14, 1972, through June 1979 were published in a separate book in 1980.

Starting with the 1981 edition of the Code, interpretations are published with each new edition and supplement of the applicable standard. A compilation of Interpretations Nos. 2–13 (June 1979–May 1989) has also been published by ASME.

ASME A17.1/CSA B44 Handbook. This Handbook augments the ASME A17.1 and CSA B44 Codes with commentary, diagrams, and illustrations that are intended to explain the requirements of these Codes.

The commentary contained in the Handbook is the opinion of the author and has not been approved by the A17 Committee.

ASME QEI-1, Standard for the Qualification of Elevator Inspectors. This Standard covers requirements for the qualification and duties of inspectors and inspection supervisors engaged in the inspection and testing of equipment within the scope of the A17.1 Code. It also includes requirements for the accreditation of organizations that certify inspectors and inspection supervisors as meeting the QEI criteria.

ASME A18.1, Safety Standard for Platform Lifts and Stairway Chairlifts. This safety Standard covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of inclined stairway chairlifts and inclined and vertical platform lifts intended for transportation of a mobility impaired person only.

CORRESPONDENCE WITH A17 COMMITTEE ASME codes and standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this and other ASME A17 codes and standards may interact with the committee by requesting interpretations, proposing revisions, and attending committee meetings. Correspondence should be addressed to:

Secretary, A17 Standards Committee
The American Society of Mechanical Engineers
Two Park Avenue
New York, NY 10016
http://go.asme.org/Inquiry

All correspondence to the Committee must include the individual's name and post office address in case the Committee needs to request further information.

Proposing Revisions. Revisions are made periodically to the Code to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the procedures, and in order to conform to developments in the elevator art. Approved revisions will be published periodically.

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

Requesting Interpretations. Upon request, the A17 Committee will render an interpretation of any requirement of the Code. Interpretations can only be rendered in response to a written request sent to the Secretary of the A17 Standards Committee.

Requests for interpretation should preferably be submitted through the 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 A17 Standards Committee at the above address. The request for 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 Section number(s) and the topic of the inquiry in one or two words.
Edition:	Cite the applicable edition and supplement of the Code 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 will be rewritten in this 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 A17 Standards Committee and the various Working Committees regularly hold meetings and/or telephone conferences, all of which are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the Standards Committee.

ASME A17.3-2017
SUMMARY OF CHANGES

Following approval by the ASME A17 Committee and ASME, and after public review, ASME A17.3-2017 was approved by the American National Standards Institute on December 12, 2017. It was issued on May 23, 2018, and is effective as of November 23, 2018.

The 2017 edition of ASME A17.3 includes revisions that are identified by a margin note, **(17)**. The following is a summary of the latest revisions and changes:

Page	*Location*	*Change*
xvi	Preface	ASME A17.2 paragraph revised
2	1.4	(1) Definitions for *base, building*; *control, mechanical-hydraulic*; *conveyor, vertical reciprocating (VRC)*; *elevator, outside emergency*; *elevator discharge level*; *occupant evacuation operation*; *pallet band*; *seal, adjustment*; *SIL rated*; and *step band* added
		(2) Definitions for *control, electrohydraulic*; *electrical/electronic/programmable electronic system (E/E/PES)*; *material lift*; *operation, group automatic*; and *safety integrity level (SIL)* revised
18	Table 1.6(a)	Sixth row and Note (1) revised
19	Table 1.6(b)	Updated
34	3.8.3	Subparagraph (b) revised
43	4.7.7	Revised
65	Part X, Scope	Penultimate paragraph revised
66	10.1.4.2	Revised
70	10.7.11	Revised
83	208.9b	First paragraph revised

SPECIAL NOTE: The interpretations to ASME A17.3 issued between April 2015 and May 2017 follow the last page of this edition as a separate supplement, Interpretations No. 10.

Part I
Introduction

SECTION 1.1
SCOPE

1.1.1 Equipment Covered by This Code

This Code of safety standards covers existing elevators, escalators, and their hoistways (except as modified by 1.1.2).

1.1.2 Equipment Not Covered by This Code

Equipment not covered by this Code includes, but is not limited to, the following:

(a) personnel hoists within the scope of ANSI A10.4

(b) material hoists within the scope of ANSI A10.5

(c) manlifts within the scope of ASME A90.1

(d) mobile scaffolds, towers, and platforms within the scope of ANSI A92

(e) powered platform and equipment for exterior and interior building maintenance within the scope of ASME A120.1

(f) conveyors and related equipment within the scope of ASME B20.1

(g) cranes, derricks, hoists, hooks, jacks, and slings within the scope of ASME B30

(h) industrial trucks within the scope of ASME B56

(i) portable equipment

(j) tiering or piling machines used to move material to and from storage located and operating entirely within one story

(k) equipment for feeding or positioning material at machine tools, printing presses, etc.

(l) skip or furnace hoists

(m) wharf ramps

(n) amusement devices

(o) stage and orchestra lifts

(p) lift bridges

(q) railroad car lifts or dumpers

(r) mechanized parking garage equipment

(s) mine elevators not located in or adjacent to a building or structure

(t) line jacks, false cars, shafters, moving platforms, and similar equipment used for installing an elevator

(u) inclined elevators within the scope of ASME A17.1/CSA B44

(v) special purpose personnel elevators within the scope of ASME A17.1/CSA B44

(w) material lifts and dumbwaiters with automatic transfer devices within the scope of ASME A17.1/CSA B44

(x) screw column elevators within the scope of ASME A17.1/CSA B44

(y) elevators used for construction within the scope of ASME A17.1/CSA B44

(z) inclined stairway chairlifts and inclined and vertical wheelchair lifts within the scope of ASME A18.1

(aa) private residence inclined stairway chairlifts and inclined and vertical wheelchair lifts within the scope of ASME A18.1

(bb) rack-and-pinion elevators within the scope of ASME A17.1/CSA B44

(cc) marine elevators within the scope of ASME A17.1/CSA B44

(dd) rooftop elevators within the scope of ASME A17.1/CSA B44

(ee) limited-use/limited-application elevators within the scope of ASME A17.1/CSA B44

(ff) equipment conforming to ASME A17.1-2000 and later editions

SECTION 1.2
APPLICATION OF CODE

There are specific requirements for existing installations in this Code that could differ from those found in the latest or previous editions of ASME A17.1/CSA B44 Safety Code for Elevators and Escalators.

Existing installations, as a minimum, shall meet the requirements of this Code; ASME A17.1/CSA B44, Safety Code for Elevators and Escalators; or ASME A17.7/CSA B44.7, Performance Based Safety Code for Elevators and Escalators (see Section 1.3). If an existing installation does not meet the requirements of this Code, it shall be upgraded. If an existing installation was required to meet more stringent requirements, it shall continue to meet those requirements.

Existing installations shall also meet the following requirements in the current edition of ASME A17.1/CSA B44, Safety Code for Elevators and Escalators:

(a) Section 8.1, Security.

(b) Section 8.6, Maintenance, Repair, Replacement, and Testing.