

ASME A17.6-2022
(Revision of ASME A17.6-2017)

Standard for Elevator Suspension, Compensation, and Governor Systems

AN AMERICAN NATIONAL STANDARD



**The American Society of
Mechanical Engineers**

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FOREWORD

This is the second edition of a Standard for elevator suspension and compensation systems as well as ropes for governor applications. This Standard has been developed by the American Society of Mechanical Engineers (ASME) to provide guidance to the elevator industry for the appropriate use of means for suspension, compensation, and governors. The second edition includes standards for three technologies for elevators, namely: steel wire ropes, aramid fiber ropes, and noncircular elastomeric-coated steel suspension members. Uniform standards for these important items are necessary to ensure consistent levels of safety and to provide guidance for the manufacturers of these items as well as the designers, manufacturers, installers, maintainers, and inspectors of elevator equipment.

As other technologies emerge and are deemed to be suitable for similar applications, this Standard will be expanded to include criteria for their usage.

In developing this Standard, experts were assembled from the steel wire rope, aramid fiber rope, and noncircular elastomeric-coated steel suspension members engineering and manufacturing fields. Relevant existing standards were studied during the development of this Standard and are referenced where appropriate. The scope of this Standard covers North American and international requirements in a comprehensive manner and does not conflict with existing American or international standards. This Standard is intended to be used in conjunction with the ASME A17.1/CSA B44, Safety Code for Elevators and Escalators, and related Codes and standards.

Steel Wire Rope for Elevators. Steel wire rope has been used for many years in the elevator industry, for suspension, compensation, and governor applications.

Due to the large range of applications in this diverse market, many variations of steel wire ropes are in current use. Examples include rope of regular and lang lay, left and right lay, preformed and nonpreformed. Such ropes may be of a variety of wire materials, from iron to high tensile steel and may be of corrosion resistant construction. Various core materials including natural and synthetic fiber and steel may also be used. Nominal Imperial dimensions as well as SI dimensional ropes are used.

In recognition of the importance of this vital elevator component and the unique practices of the North American industry, this Standard was developed. This Standard covers the current applications and provides strength and material criteria as well as testing, compliance, inspection, replacement, and ordering information. Imperial and SI dimensions are addressed in the Standard. The purpose of this Standard is to enhance public safety and to provide guidance to manufacturers and users of steel wire rope.

Aramid Fiber Ropes and Elastomeric-Coated Steel Belts. With the appearance in the market place of new suspension and compensation means technologies, such as aramid fiber ropes and noncircular elastomeric-coated steel suspension members for elevators, the need for standards that will ensure the safe application of these items became evident. This Standard addresses these important technologies.

In developing the standards, extensive test results were studied and the properties and durability of the new suspension and compensation means were examined. The work included visits to major laboratories at which all aspects of the noncircular elastomeric-coated steel suspension members were tested.

The work included a visit to the factory of a major manufacturer of aramid fiber and technical presentations by experts in this technology. The test work of a major laboratory and field results from the application of aramid fiber rope on elevators were also studied.

Test facilities where the noncircular elastomeric-coated steel suspension members were extensively tested on elevators were also visited. In addition, technical presentations on the noncircular elastomeric-coated steel suspension members regarding their construction and testing took place.

Testing on both aramid fiber ropes and noncircular elastomeric-coated steel suspension members included life, durability, resistance to damage, traction, replacement criteria, effects of the environment, and many other criteria. This work was extremely helpful in developing the standards and building confidence in the validity of the requirements.

ASME A17.6-2017 was approved by the American National Standards Institute (ANSI) on September 29, 2017.

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PREFACE

GENERAL

This is one of many standards developed by the American Society of Mechanical Engineers (ASME) under the general auspices of the American National Standards Institute (ANSI). Safety codes and standards are intended to enhance public health and safety. Revisions result from committee consideration of factors such as technological advances, new data, and changing environmental and industry needs. Revisions do not imply that previous editions were inadequate.

This Standard is referenced by and intended to be used in conjunction with ASME A17.1/CSA B44, Safety Code for Elevators and Escalators, and related Codes and standards. Written inquiries regarding this Standard should be addressed to the Secretary of the ASME A17 Standards Committee.

NOTE: Referenced Codes, Standards, and Test Methods that appear with no date indicated shall be the edition in effect at the time of publication of this Standard.

FORM AND ARRANGEMENT

This Standard consists of three Parts, each covering a specific technology related to elevator suspension and compensation means and governor ropes. The Foreword, Preface, and Notes that are included in this document are not part of this American National Standard. They are advisory in nature and are intended for clarification only.

SCOPE

This Standard covers the means and members of suspension, compensation, and governor systems for elevators within the scope of ASME A17.1/CSA B44.

NOTE: It must be determined by the individual working committees as to the level of appropriateness of applying the New Technologies in their particular applications.

This Standard includes the material properties, design, testing, inspection, and replacement criteria for these means. It includes the requirements for steel wire rope, aramid fiber rope, and noncircular elastomeric-coated steel suspension members, and provides direction for future constructions as new technology develops.

INTRODUCTION

This Standard is intended to be used with ASME A17.1/CSA B44, Safety Code for Elevators and Escalators, A17.2, Guide for the Inspection of Elevators, Escalators, and Moving Walks, and A17.3, Safety Code for Existing Elevators and Escalators, and other Codes and Standards referenced by these Standards as well as other related Standards.

The ASME A17.1/CSA B44 Code specifically references the suspension and compensation means and governor systems covered by this Standard. This Standard was developed to provide safe, consistent criteria for steel wire rope, aramid fiber rope, noncircular elastomeric-coated steel suspension members and other means of suspension and compensation used in the Elevator Industry.

Part 1 covers steel wire rope.

Part 2 covers aramid fiber rope.

Part 3 covers noncircular elastomeric-coated steel suspension members.

The Standard is under the auspices of the ASME A17.1 Standards Committee and is subject to the operating procedures of this Committee.

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

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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.