ASME B20.1-2009
(Revision of ASME B20.1-2006)

Safety Standard for Conveyors and Related Equipment

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

ASME
SETTING THE STANDARD

Date of Issuance: March 16, 2009

The next edition of this Standard is scheduled for publication in 2012. This Standard will become effective 1 year after the Date of Issuance. There will be no addenda issued to this edition.

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

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

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FOREWORD

The first edition of the Safety Standard for Conveyors, Cableways, and Related Equipment was sponsored by the National Conservation Bureau and the American Society of Mechanical Engineers. It was approved by the American Standards Association (now known as the American National Standards Institute, Inc.) as American Standard B20.1-1947.

In 1950, the Sectional Committee B20 was reorganized under the sponsorship of the Accident Prevention Department of the Association of Casualty and Surety Companies and the American Society of Mechanical Engineers. Four Subcommittees were formed to make specific recommendations for revisions. These were:

Subcommittee No. 1 — Scope and Intent
Subcommittee No. 2 — Nomenclature and Definitions
Subcommittee No. 3 — Portable Conveyors
Subcommittee No. 4 — Conveyors in General

Section 5, Definitions, was based on the conveyor industry dictionary, Conveyor Terms and Definitions, as prepared by the Technical Committee (now the Engineering Conference) of the Conveyor Equipment Manufacturers Association (CEMA).

The second edition of this Standard, dated April 1955, was submitted in draft form to the Sectional Committee for approval and distributed to industry in general for criticism and comment. Approval was then given by the Sectional Committee, the sponsors, and the American Standards Association. The Standard was designated as American Standard B20.1-1957 on December 4, 1957.

In 1967, the third edition of the Safety Standard for Conveyors and Related Equipment was submitted in draft form to representatives of industry for comment. It was subsequently approved by the Sectional Committee, the sponsors, and the American National Standards Institute for issuance as American National Standard B20.1-1972 on February 17, 1972.

The fourth edition of the Safety Standard for Conveyors and Related Equipment was undertaken in 1973 to assist the Office of Safety and Health Standards, U.S. Department of Labor, which indicated interest in the Standard.

A change in format from a specification standard to a performance standard was deemed necessary. Simply stated, the Standard describes what end result should be achieved without the limiting specification usually given by a design and without the inclusion of finite material selection or dimensions.

The fourth edition was subsequently approved by the B20 American National Standards Committee, the Secretariat, and the American National Standards Institute for issuance as American National Standard B20.1-1976 on June 14, 1976.

In accordance with the policy of the American National Standards Institute, Inc., the B20 Committee began working on a revision of B20.1-1976 in February 1980. The fifth edition was approved by the B20 Committee, the sponsor (ASME), and the American National Standards Institute for issuance as American National Standard B20.1-1984 on March 13, 1984.

Per the procedures outlined and implemented in the fifth edition, the sixth edition was approved by the B20 Committee, the sponsor (ASME), and the American National Standards Institute for issuance as American National Standard B20.1-1987 on March 11, 1987. The seventh edition was approved for issuance as an American National Standard on March 26, 1990. The eighth edition was approved for issuance as an American National Standard on August 9, 1993.

The ninth edition was a compilation of changes occurring in the 1993 edition, B20.1a-1994, and B20.1b-1995. It was approved for issuance as an American National Standard on May 23, 1997.

The 2000 edition was a compilation of changes from the B20.1a-1997 and B20.1b-1998 addenda. It was approved for issuance as an American National Standard on December 14, 2000.

Following approval by the B20 Committee and ASME, and after public review, ASME B20.1-2003 was approved by the American National Standards Institute on October 9, 2003. The 2003 edition was a revision to B20.1-2000.

ASME B20.1-2006 was approved by the American National Standards Institute on September 7, 2006. The 2006 edition was a revision to B20.1-2003.

ASME B20.1-2009 was approved by the American National Standards Institute on February 2, 2009. This 2009 edition is a revision to ASME B20.1-2006. This Standard shall become effective 1 year from the date of issuance.

Safety standards for mechanical power apparatus are published in ASME B15.1-1996 (Safety Standard for Mechanical Power Transmission Apparatus). Safety standards for lockout and tagout procedures are published in ANSI Z244.1-1982 (R1993) (Safety Requirements for Lock Out/Tag Out of Energy Sources) and OSHA Standard Number 29 CFR 1910.147 "The Control of Hazardous Energy (Lockout/ Tagout)." The use of recommendations and guidelines as published by the Conveyor Equipment Manufacturer's Association (CEMA) "Safety Label Brochure No. 201" and "Guidelines for Vertical Reciprocating Conveyors" published by the Conveyor Product Section of The Material Handling Institute in conjunction with ASME B20.1 is encouraged, as are the above-mentioned standards.

The values stated within this Standard are in both SI and U.S. Customary units, with the latter placed in parentheses. These units are essentially interchangeable, and, depending on the country, as well as industry preferences, the user will determine which values are to be regarded as the standard.

Safety codes and standards are intended to enhance public 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.

ASME B20 COMMITTEE
Safety Standard for Conveyors and Related Equipment

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

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SAFETY STANDARD FOR CONVEYORS AND RELATED EQUIPMENT

INTRODUCTION

Accidents resulting from the manual handling of materials have been reduced by the use of conveying and other forms of mechanical handling equipment. A further reduction in the accident rate can be gained by following safe practices in the design, construction, installation, operation, and maintenance of such equipment.

The design and installation of conveyors and conveyor systems should be supervised by qualified engineers. Likewise, the operation and maintenance of conveyors and systems should be supervised by trained personnel.

The purpose of this Standard is to present certain guides for the design, construction, installation, operation, and maintenance of conveyors and related equipment.

Those portions of this Standard relating to maintenance and operation procedures are fully as important as those relating to design and installation. The best design features may be negated by faulty maintenance and operating practices. It is important that operating and maintenance personnel be instructed in recognizing hazards and pertinent safety precautions.

(09) 1 SCOPE

This Standard applies to the design, construction, installation, maintenance, inspection, and operation of conveyors and conveying systems in relation to hazards. The conveyors may be of the bulk material, package, or unit-handling types, where the installation is designed for permanent, temporary, or portable operation.

This Standard shall apply, with the exceptions noted below, to all conveyor installations.

This Standard specifically excludes any conveyor designed, installed, or used primarily for the movement of people. This Standard does, however, apply to certain conveying devices that incorporate within their supporting structure workstations or operator's stations specifically designed for authorized operating personnel.

This Standard does not apply to conveyors such as underground mine conveyors for which specific standards are already in effect or to equipment such as industrial trucks, tractors, trailers, automatic guided vehicles, tiering machines (except pallet load tierers), cranes, hoists, power shovels, power scoops, bucket drag lines, trenchers, platform elevators designed to carry passengers or an operator, manlifts, moving walks, moving stairways (escalators), highway or railroad vehicles, cableways, tramways, dumbwaiters, material lifts, pneumatic conveyors, robots, or integral machine transfer devices. Some of the foregoing have specific standards.

The provisions of this Standard shall apply to equipment installed 1 year after the date of issuance.

2 REFERENCE TO OTHER CODES

Certain other codes and standards have been cited as references in this Standard. Reference to them does not constitute inclusion of the complete text of such codes or standards as a part of this Standard.

This Safety Standard for conveyors is supplementary to any law or code covering fire or health regulations.

3 INTENT

The intent of this Standard is to provide for safe operation and maintenance of conveying equipment.

Suggestions for improvement of this Standard may be submitted to the Secretary of the B20 Committee, ASME, Three Park Avenue, New York, NY 10016-5990.

Proposals should be written in accordance with the following format:

(a) Specify page and paragraph designation of the pertinent Standard.

(b) Indicate suggested change (addition, deletion, revision, etc.).

(c) Briefly state reason and/or evidence for suggested change.

(d) Separately submit suggested changes if more than one paragraph is affected.

The B20 Committee will consider each suggested change at its first meeting after receipt of the suggested change(s).

The B20 Committee will render an interpretation of any requirement of the Standard. Interpretations will be rendered only in response to a written request sent to the Secretary of the B20 Committee, ASME, Three Park Avenue, New York, NY 10016-5990.