

# American National Standard

*for Passenger Ropeways –  
Aerial Tramways, Aerial Lifts,  
Surface Lifts, Tows and Conveyors –  
Safety Requirements*

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**B77.1-2011**  
Revision of  
ANSI B77.1-2006

American National Standard  
for Passenger Ropeways –

**Aerial Tramways, Aerial Lifts,  
Surface Lifts, Tows and Conveyors –  
Safety Requirements**

Secretariat

**National Ski Areas Association**

Approved May 2, 2011

Editorially revised October 3, 2011

**American National Standards Institute, Inc.**

# American National Standard

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Published by

**American National Standards Institute, Inc.**  
**25 West 43rd Street, New York, NY 10036**

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Printed in the United States of America

## Contents

	Page
Foreword .....	iii
<b>1</b> General requirements .....	<b>1</b>
1.1 Scope .....	1
1.2 Purpose .....	1
1.3 Reference to other codes and standards .....	2
1.4 Definitions .....	2
1.5 Quality assurance program .....	2
<b>2</b> Aerial tramways .....	<b>7</b>
2.1 Design and installation .....	7
2.2 Electrical design and installation .....	19
2.3 Operation and maintenance .....	23
<b>3</b> Detachable grip aerial lifts .....	<b>31</b>
3.1 Design and installation .....	31
3.2 Electrical design and installation .....	50
3.3 Operation and maintenance .....	54
<b>4</b> Fixed grip aerial lifts .....	<b>61</b>
4.1 Design and installation .....	61
4.2 Electrical design and installation .....	77
4.3 Operation and maintenance .....	82
<b>5</b> Surface lifts .....	<b>89</b>
5.1 Design and installation .....	89
5.2 Electrical design and installation .....	99
5.3 Operation and maintenance .....	103
<b>6</b> Trolleys .....	<b>109</b>
6.1 Design and installation .....	109
6.2 Electrical design and installation .....	115
6.3 Operation and maintenance .....	118
<b>7</b> Conveyors .....	<b>125</b>
7.1 Design and installation .....	125
7.2 Electrical design and installation .....	129
7.3 Operation and maintenance .....	132
<b>8</b> Normative references .....	<b>137</b>

**Annexes**

**A** Wire rope and strand requirements (Normative)..... 139

A.1 Physical properties..... 139

A.2 Testing ..... 142

A.3 Connections for wire rope and strand ..... 143

A.4 Maintenance and replacement..... 145

**B** Wire Rope - Measuring the diameter and formulas for  
calculating broken wires (Informative) ..... 149

**C** Loading Conveyors (Normative) ..... 150

**D** Signs (Normative) ..... 151

**E** Control button colors (Normative) ..... 158

**F** Internal combustion engines and fuel handling (Normative)..... 159

**G** Chains, welded link (Normative) ..... 165

**H** Chains, roller and leaf (Informative)..... 167

**I** International system of units (SI)  
metric conversion factors (Informative)..... 169

Index..... 171

**Foreword** (This foreword is not part of American National Standard ANSI B77.1-2011.)

This standard deals with passenger transportation systems that use cables, ropes, or other flexible elements for power transmission in the system. These systems include aerial tramways, detachable and fixed grip aerial lifts, surface lifts, tows, and conveyors.

This standard is a revision of American National Standard for Passenger Ropeways - Aerial Tramways Aerial Lifts, Surface Lifts, Tows and Conveyors - Safety requirements, ANSI B77.1-2006. Section 1 provides the scope and general definitions for systems covered in this standard. Sections 2 through 7 cover the specific passenger transportation types. Six (6) Normative Annexes and three (3) Informative Annexes are included in the standard. Normative Annexes are considered part of the standard. Informative Annexes are presented for the information provided and are not considered part of this standard.

The B77 standard had its inception in 1956. At that time, the industry dealing with recreational passenger transportation had reached such proportions that safeguards were required for the protection of the public and progress of the industry. At the request of the Eastern Ski Area Operators Association, one of the original sponsors of the project, a general conference was held in New York City. As a result of that conference, the American National Standards Committee B77, composed of operators, users, authorities having jurisdiction, designers, and manufacturers of aerial passenger tramways, was established to develop safety requirements. The first standard was approved by ANSI on June 8, 1960, and revisions were developed and approved in 1970, 1973, 1976, 1982, 1990, 1992, 1999, and 2006.

Because of the diverse nature of the industries that may use this standard, it is recommended that authorities having jurisdiction consider an effective date of one year from the approval date of the standard. The "effective date" of this standard is a criterion selected by the committee and not by the American National Standards Institute.

Suggestions for the improvement of this standard will be welcome. They should be sent to the ASC B77, c/o National Ski Areas Association, 133 South Van Gordon Street, Suite 300, Lakewood, CO 80228 or e-mailed to [ascb77@nsaa.org](mailto:ascb77@nsaa.org).

This standard was approved for submittal to ANSI by the Accredited Standards Committee (ASC) B77 on Aerial Passenger Ropeways. Committee approval of the standard does not necessarily imply that all the committee members voted for its approval or the approval of every requirement in the standard. At the time this standard was approved, the ASC B77 Committee had the following members:

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## American National Standard for Passenger Ropeways –

# Aerial Tramways, Aerial Lifts, Surface Lifts, Tows and Conveyors – Safety Requirements

## Section 1 General requirements

### 1.1 Scope

This document establishes a standard for the design, manufacture, construction, operation, and maintenance of passenger ropeways. For this standard, passenger ropeway categories include:

- aerial tramways (single and double reversible);
- aerial lifts (detachable lifts, chair lifts, and similar equipment);
- surface lifts (T-bar lifts, J-bar lifts, platter lifts, and similar equipment);
- tows (wire rope and fiber rope tows)
- conveyors.

### 1.2 Purpose

The purpose of this standard is to develop a system of principles, specifications, and performance criteria that will meet the following objectives:

- a) reflect the current state-of-the-art in passenger ropeway design, operation, and maintenance;
- b) be acceptable for adoption by government agencies and others.

It is recognized that certain dangers and risks are inherent in machines of this type and their operation. It is also recognized that inherent and other risks or dangers exist for those who are in the process of approaching, loading, riding, unloading, and departing from passenger ropeways. This system is intended to result in passenger ropeways that are designed, constructed, operated, and maintained in a manner that helps reduce danger and exposure to risk to passengers and maintenance and operational personnel, and to encourage improvements in productivity, efficiency, development, and progress consistent with the objectives.

Such a system with these stated objectives constitutes a safety standard.

#### 1.2.1 Other ropeway classifications

Passenger ropeway configurations that do not fall within the categories specified in 1.1, but fall within the general category of passenger ropeways, should be evaluated

by the authority having jurisdiction based upon the design engineer's specifications and the applicable provisions of this standard.

#### 1.2.2 New materials and methods for passenger ropeways

Adoption of technological improvements in materials and advances in techniques is essential to enable the industry to keep pace with progress. If a designer or manufacturer proposes to use materials or methods not covered by this standard, those materials, methods, or both, shall be clearly identified, and complete design and test information shall be provided to the purchaser or owner and the authority having jurisdiction (see 1.4 – *authority having jurisdiction*).

#### 1.2.3 Exceptions

Strict application of the provisions of this standard may not be appropriate in every instance. Wherever it may be proposed to depart from the provisions of this standard, the authority having jurisdiction may grant exceptions from the literal requirements or permit the use of other devices or methods that provide features comparable to those included in this standard.

#### 1.2.4 Installations

##### 1.2.4.1 Existing installations

Existing installations and those with design review completed by the authority having jurisdiction prior to the effective date of this standard need not comply with the new or revised requirements of this edition, except where specifically required by the authority having jurisdiction.

Operation and maintenance shall be in compliance with those requirements specifically listed (not included by reference) in the operation and maintenance subsection (2.3, 3.3, 4.3, 5.3, 6.3, 7.3) and normative Annexes A, D and F.

NOTE – Additionally, items listed under (2.3.1.1, 3.3.1.1, 4.3.1.1, 5.3.1.1, 6.3.1.1) are considered of special importance. Compliance on ropeways with design review prior to this standard shall be required.