

# ANSI/ASSP A10.5-2020

## Safety Requirements for Material Hoists



AMERICAN SOCIETY OF  
**SAFETY PROFESSIONALS**



The information and materials contained in this publication have been developed from sources believed to be reliable. However, the American Society of Safety Professionals (ASSP) as secretariat of the ANSI accredited A10 Committee or individual committee members accept no legal responsibility for the correctness or completeness of this material or its application to specific factual situations. By publication of this standard, ASSP or the A10 Committee does not ensure that adherence to these recommendations will protect the safety or health of any persons or preserve property.

**ANSI®**  
**ANSI/ASSP A10.5 – 2020**

**American National Standard  
Construction and Demolition Operations**

**Safety Requirements for Material Hoists**

Secretariat

**American Society of Safety Professionals**  
520 N. Northwest Highway  
Park Ridge, Illinois 60068

**Approved July 7, 2020**

**American National Standards Institute**

## **American National Standard**

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution. The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he/she has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards. The American National Standards Institute does not develop standards and will in no circumstance give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretation should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

Caution Notice: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Published August 2020 by

**American Society of Safety Professionals**  
**520 N. Northwest Highway**  
**Park Ridge, IL 60068**  
**(847) 699-2929 • [www.assp.org](http://www.assp.org)**

Copyright ©2020 by American Society of Safety Professionals  
All Rights Reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

Printed in the United States of America

## **Foreword** (This Foreword is not a part of American National Standard A10.5-2020.)

This standard is one of a series of safety standards that have been formulated by the Accredited Standards Committee on Safety in Construction and Demolition Operations, A10. It is expected that the standards in the A10 series will find a major application in industry, serving as a guide to contractors, labor and equipment manufacturers. For the convenience of users, a list of existing and proposed standards and technical materials in the A10 series for Safety Requirements in Construction and Demolition Operations follows.

A10.0	The Construction and Demolition Compendium of Standards
A10.1	Pre-Project & Pre-Task Safety & Health Planning
A10.2	Safety, Health and Environmental Training (under development)
A10.3	Powder-Actuated Fastening Systems
A10.4	Personnel Hoists and Employee Elevators
A10.5	Material Hoists
A10.6	Demolition Operations
A10.7	Use, Storage, Handling and Site Movement of Commercial Explosives and Blasting Agents
A10.8	Scaffolding
A10.9	Concrete and Masonry Construction
A10.10	Temporary and Portable Space Heating Devices
A10.11	Personnel Nets
A10.12	Excavation
A10.13	Steel Erection
A10.15	Dredging
A10.16	Tunnels, Shafts and Caissons
A10.17	Safe Operating Practices for Hot Mix Asphalt (HMA) Construction
A10.18	Temporary Roof and Floor Holes, Wall Openings, Stairways and Other Unprotected Edges
A10.19	Pile Installation and Extraction Operations
A10.20	Ceramic Tile, Terrazzo and Marble Work
A10.21	Safe Construction and Demolition of Wind Generation/Turbine Facilities
A10.22	Rope-Guided and Non-Guided Workers' Hoists
A10.23	Safety Requirements for the Installation of Drilled Shafts
A10.24	Roofing – Safety Requirements for Low-Sloped Roofs
A10.25	Sanitation in Construction
A10.26	Emergency Procedures for Construction Sites
A10.27	Hot Mix Asphalt Facilities
A10.28	Work Platforms Suspended from Cranes or Derricks
A10.29	Pre-Planning, Installation, Inspection and Use of Fall Protection for Construction and Demolition (under development)
A10.30	Installation of Anchors and Micropiles (under development)
A10.31	Digger-Derricks
A10.32	Personal Fall Protection Used in Construction and Demolition Operations
A10.33	Safety and Health Program Requirements for Multi-Employer Projects
A10.34	Public Protection
A10.35	Pressure Testing of Steel and Copper Piping Systems (under development)
A10.37	Debris Nets
A10.38	Basic Elements of a Program to Provide a Safe and Healthful Work Environment
A10.39	Construction Safety and Health Audit Program
A10.40	Reduction of Musculoskeletal Problems in Construction
A10.42	Rigging Qualifications and Responsibilities in the Construction Industry
A10.43	Confined Spaces in Construction and Demolition Operations
A10.44	Lockout/Tagout in Construction
A10.46	Hearing Loss Prevention
A10.47	Highway Construction Safety
A10.48	Communication Structures
A10.49	Control of Health Hazards
A10.50	Heat Stress Management in Construction and Demolition Operations (under development)

- A10.100 Prevention through Design in Construction
- A10.101 Drones in Construction (under development)
- A10.102 Emerging Technology in Construction (under development)

One purpose of these standards is to serve as guides to governmental authorities having jurisdiction over subjects within the scope of the A10 Committee standards. If these standards are adopted for governmental use, the reference of other national codes or standards in individual volumes may be changed to refer to the corresponding regulations.

**Normative Requirements:** This standard uses the single column format common to many international standards. The normative requirements appear aligned to the left margin. To meet the requirements of this standard, machinery, equipment and process suppliers and users must conform to these normative requirements. These requirements typically use the verb "shall."

*NOTE: The informative or explanatory notes in this standard appear indented, in italics, in a reduced font size, which is an effort to provide a visual signal to the reader that this is informative note, not normative text, and is not to be considered part of the requirements of this standard; this text is advisory in nature only. The suppliers and users are not required to conform to the informative note. The informative note is presented in this manner in an attempt to enhance readability and to provide explanation or guidance to the sections they follow.*

**Revisions:** The A10 Committee welcomes proposals for revisions to this standard. Revisions are made to the standard periodically (usually five years from the date of the standard) to incorporate changes that appear necessary or desirable, as demonstrated by experience gained from the application of the standard. Proposals should be as specific as possible, citing the relevant section number(s), the proposed wording and the reason for the proposal. Pertinent documentation would enable the A10 Committee to process the changes in a more-timely manner.

**Interpretations:** Upon a request in writing to the Secretariat, the A10 Committee will render an interpretation of any requirement of the standard. The request for interpretation should be clear, citing the relevant section number(s) and phrased as a request for a clarification of a specific requirement. Oral interpretations are not provided.

No one but the A10 Committee (through the A10 Secretariat) is authorized to provide any interpretation of this standard.

**Approval:** Neither the A10 Committee nor American National Standards Institute (ANSI) approves, certifies, rates or endorses any item, construction, proprietary device or activity.

**Appendices:** Appendices are included in most standards to provide the user with additional information related to the subject of the standard. Appendices are not part of the approved standard.

**Checklists:** Checklists included in A10 standards may be copied and used in non-commercial settings only.

**Committee Meetings:** The A10 Committee meets twice per year. Persons wishing to attend a meeting should contact the Secretariat for information.

**Standard Approval:** This standard was processed and approved for submittal to ANSI by the American National Standards Committee on Safety in Construction and Demolition Operations, A10. Approval of the standard does not necessarily imply (nor is it required) that all Committee members voted for its approval. At the time ANSI approved this standard, the A10 Committee had the following members:

John Johnson, CSP, Chair  
Steven Rank, Vice Chair  
Timothy R. Fisher, CSP, CHMM, CPEA, CAE, ARM, STS, Secretary  
Lauren Bauerschmidt, MS Engr, CSP, STS, Assistant Secretary  
Jennie Dalesandro, Administrative Technical Support

### **Member Organizations**

### **Member Representative(s)**

3M

Raymond Mann

AGC of America

Heidi Lopez-Hidalgo, P.E.

Alliance of Hazardous Materials Professionals  
American Insurance Services Group

Michael McCaffrey

Kevin Cannon

American Society of Civil Engineers

Carl Heinlein, CSP, ARM, CRIS

Thad Nosal

American Society of Safety Professionals

James Borchardt, CSP, CPE

John O'Connor, P.E.

American Wind Energy Association

Harlan Fair, P.E.

Ken Shorter, CSP, ARM, TCDS

APT Research, Inc.

A. David Brayton, CSP, CPC

Christopher Daniels

Associated Builders & Contractors, Inc.

Michele Myers Mihelic

Saralyn Dwyer

Barton Malow Company

Stephen Wiltshire, MSc

Greg Sizemore

Black & Veatch

Mark Haggemaker, CHST, CCHT

Ryan Monahan

Building & Construction Trades Department

John Johnson, CSP

Jason Scollin, CSP, MS, STSC, CRIS

Chris Cain, CIH

Century Elevators

Gary Gustafson

Paula Manning

Clark Construction Group

Eric Schmidt, P.E.

Kurt Dunmire, CSP, CHST

Cole-Preferred Safety Consulting, Inc.

Barry Cole

Conner Strong & Buckelew

Eric Voight, CSP

Construction & Realty Safety Group, Inc.

Ken Bogdan

Ron Lattanzio

CPWR - The Center for Construction Research & Training

Frank Marino

Bruce Lippy, Ph.D., CIH, CSP

Babak Memarian, Ph.D.

Eckstine & Associates, Inc.

Dennis Eckstine

Matthew Eckstine

Edison Electric Institute

Elevator Industry Work Preservation Fund

Ellis Fall Safety Solutions, LLC

Engineering Systems, Inc.

Fluor Corporation

Gilbane Building Co.

Hislop, Richard D.

Independent Electrical Contractors, Inc.

Innovative Safety, LLC

Institute of Makers of Explosives

International Association of Bridge, Structural, Ornamental & Reinforcing Iron Workers

International Association of Heat & Frost Insulators & Allied Workers

International Brotherhood of Boilermakers

International Brotherhood of Electrical Workers

International Brotherhood of Teamsters

International Safety Equipment Association

International Union of Bricklayers & Allied Craftworkers

International Union of Operating Engineers

IUPAT

Kiewit Power Constructors Co.

Laborers' International Union of North America

Lamar Advertising Company

Lendlease Corporation

Liberty Mutual

Joseph DiPlacido, MS CSP

Carren Spencer

Michael Morand

James Demmel

J. Nigel Ellis, Ph.D., P.E., CSP, CPE

John Whitty, P.E.

David Ahearn, P.E.

Edward Tuczak, P.E.

Michael Weatherred, CSP

Jim Bates, CSP

Robert Hinderliter, ASP

Thomas Trauger, CSP, ARM, CRIS

Richard Hislop, P.E., CSP, ARM

Shawn Bradfield, CSP

Paul Dolenc

Jerry Rivera

Barbara Paine

Joshua Hoffman, Ph.D., P.E.

Susan Flanagan

Steven Rank

Wayne Creasap II

Tim Keane

Mark Garrett

Bridget Connors

David Mullen

Dan Gardner

LaMont Byrd, CIH

Cristine Fargo

Daniel Glucksman

David Wysocki

Gerard Scarano

Christopher Trembl

Russell Duke

Kenneth Seal

Rusty Brown, CSP

Cody Williams, ASP

Walter Jones, MS, CIH

Travis Parsons

Chuck Wigger, CSP

Beth Phelps

Joel Pickering, CET, CHMM

Michael Lentz

Stan Williams, ARM, CHST

Kevin Newlan, ASP, CHST



Lockton Companies

Marsh LLC

Maryland Occupational Safety & Health

Mechanical Contractors Association of America

Miller & Long Co., Inc.

National Association of Home Builders

National Electrical Contractors Association

National Institute for Occupational Safety & Health

National Railroad Construction & Maintenance Association

National Roofing Contractors Association

National Society of Professional Engineers

NESTI, Inc.

Operative Plasterers & Cement Masons International  
Association

PATMI

Phoenix Fabricators & Erectors, Inc.

Professional Safety Consultants, Inc.

Safety Environmental Engineering, Inc.

Scaffold & Access Industry Association

Sheet Metal & Air Conditioning Contractors National  
Association

SMART Union

SPA, LLC

Stock Enterprises

The Association of Union Constructors

Turner Construction Company

U.S. Army Corps of Engineers

U.S. Department of Energy

United Association of Plumbers and Pipefitters

Marcus Reiter, CSP, ARM, CRIS

Drew Youpel, CRIS, STSC

Timothy Bergeron, CSP, CRIS

Mischelle Vanreusel

Michael Daughaday, CHST

Peter Chaney, MS, CSP

Frank Trujillo

Alex Rodas, CHST

Robert Matuga

Christian Culligan

Michael Johnston

Wesley Wheeler

Thomas Bobick, Ph.D., P.E., CSP,  
CPE

G. Scott Earnest, Ph.D., P.E., CSP

Jeffrey Meddin, CSP, CHEP, CHCM

Harry Dietz

Thomas Shanahan

E. Ross Curtis, P.E., DFE, F.ASCE,  
F.NSPE

Michael Hayslip, P.E., CSP

Jack Madeley, M.S., P.E., CSP

Deven Johnson

James Borchers

Frank Massey

Dmitry Stott, CHST, GSP

Jim Lapping, MS, P.E., CSP

Kathy Stieler

Matthew Murphy

DeAnna Martin

Jackie Brown

Mike McCullion, CSP, ARM

Jamie Devan, CHST

Randall Krocka

Stanley Pulz, CSP, P.E.

Steve Stock, P.E., PLS

Kathleen Dobson, CSP, CHST,  
STS.C

Cindy DePrater, ALCM

Abdon Friend, CSP

Todd "Marty" Werdebaugh, MS, CSP,  
PMP

Craig Schumann

Maurice Haygood

Cheryl Ambrose, CHST, OHST

Rita Neiderheiser, CHST, CIT

United Brotherhood of Carpenters & Joiners of America

United Union of Roofers, Waterproofers & Allied Workers

West Virginia University Extension Service

ZBD Constructors, Inc.

William Irwin

Royce Peters

Richard Tessier

Keith Vitkovich

Brandon Takacs, CSP, CSHM

Mark Fullen, Ed.D., CSP

Greg Thompson, CSP

Jeffrey Meddin, CSP, CHEP, CHCM

**Independent Experts & Observers:**

DPR Construction

National Association of Tower Erectors

U.S. Department of Labor - OSHA

Warfel Construction Company

James Alexander, CSP, CHST, CET

Paul Butler, CSP, CHST

John "JP" Jones

Kathryn Stieler

Scott Ketcham

Eric Kampert, P.E., CSP, OHST

Jeffrey Pierce

Kevin Stoltzfus

**Subgroup A10.5 had the following members:**

Michael Morand (Chair)

Shanon Beekman (Vice Chair)

Richard Hislop, P.E., CSP, ARM (Liaison)

Ted Beville

James Demmel

J. Nigel Ellis, Ph.D., P.E., CSP, CPE

Charles Ernstes

Andrew "Drew" Gaskins, CHST, STS-C

Richard Gregory

Greg Janda

Glenn Johnston

Paula Manning

Duane McWilliams

Jeffrey Meddin, CSP, CHEP, CHCM

John Miller

David Morgan

John O'Connor, P.E.

Kevin O'Shea

Brennan Paterson

Jim Runyan

Eric Schmidt, P.E.

Todd Sharpe

Steve Simpson

Josh Snead

Francois Villeneuve

## Contents

1. General .....	12
1.1 Scope.....	12
1.2 Purpose.....	12
1.3 Exceptions .....	12
2. References .....	12
2.2 Related Standards.....	12
2.3 Other Related Standards.....	13
2.4 Abbreviations Used in This Standard .....	14
2.5 Typical Examples of Material Hoists.....	15
3. Definitions .....	16
4. Hoist Designation/Location.....	18
4.1 Design and Construction of Foundations.....	18
5. Requirements for Hoist Mast.....	18
5.1 Design.....	18
5.2 Base Enclosure .....	21
5.3 Access at Landings .....	22
5.4 Materials for Enclosure and Guarding .....	27
5.5 Operating Station .....	29
6. Hoist Platforms and Cages.....	29
6.1 Prohibition of Riders .....	29
6.2 Leveling, Loading and Unloading .....	29
6.3 Overhead Protection .....	29
6.4 Securing Material .....	30
6.5 Slip-Resistant Floors .....	30
6.6 Horizontal Clearances for Material Hoists.....	30
6.7 Platform/Cage Guarding for Hoists Located Inside a Structure.....	31
6.8 Platform/Cage Guarding for Hoists Located Outside a Structure.....	32
6.9 Load-Rating Marking Plate.....	32
6.10 Drop Plates .....	32
6.11 Bridging Devices .....	32
7. Characteristics of Hoisting Machines .....	32
7.1 General .....	32
8. Material Hoist Wire Rope/Sheaves/Fastening.....	36
8.1 Hoist Wire Rope and Sheaves .....	36
8.2 Drums and Sheaves.....	36
9. Inspections and Test of Material Hoists.....	39

9.1 Acceptance Inspections and Tests .....	39
9.2 Acceptance Tests of Platform/Cage Arresting Device .....	39
9.3 Acceptance Tests of Hoisting Machine Brakes.....	39
9.4 Daily/Pre-shift Inspections .....	39
9.5 Monthly Inspection .....	40
9.6 Periodic Inspection and Tests .....	40
9.7 Post Incident Inspection .....	40
9.8 Inspection After Height Extension/Jumping .....	40
9.9 Wire Rope Inspections .....	40
9.10 Product-Specific Testing.....	42
9.11 Inspection of Tower Structure Components.....	43
10. Individual Requirements and Training .....	43
10.1 Responsibilities of Owner (Equipment).....	43
10.2 Responsibilities of Qualified Persons.....	45
10.3 Responsibilities of Users .....	45
10.4 Responsibilities of Authorized Personnel.....	48
11. Special Application Hoist.....	48
11.1 General .....	48
11.2 Reserved for Future Use .....	49
11.3 Requirements for Hoist Mast .....	49
11.4 Reserved for Future Use .....	49
11.5 Characteristics of Hoisting Machines.....	49
12. Revision of American National Standards Referred to in this Standard .....	49
Appendices .....	50
Appendix A: Survey of Job Site .....	50
Appendix B: Material Hoist Checklists .....	52

## AMERICAN NATIONAL STANDARD A10.5 SAFETY REQUIREMENTS FOR MATERIAL HOISTS

### 1. General

#### 1.1 Scope

This standard applies to material hoists used to raise or lower materials during construction, alteration, maintenance or demolition. It is not applicable to the temporary use of permanently installed personnel elevators as material hoists.

#### 1.2 Purpose

The purpose of this standard is to set forth minimum requirements intended to provide for the safety of life, limb and property of those engaged in occupations requiring the use of material hoists. The requirements of this standard are the minimum for that purpose.

#### 1.3 Exceptions

In cases of practical difficulties, unnecessary hardships or new developments, exceptions to the literal requirements shall be permitted by the enforcing authority to allow the use of other devices or methods, but only when it is clearly established that equivalent protection is thereby obtained.

### 2. References

2.1 This standard shall not apply to:

2.1.1 Elevators constructed and operated in conformance with ANSI/ASME A17.1, *Safety Code for Elevators and Escalators*.

2.1.2 Personnel hoists constructed and operated in conformance with ANSI/ASSP A10.4, *Safety Requirements for Personnel Hoists and Employee Elevators on Construction and Demolition Sites*.

2.1.3 Manlifts constructed and operated in conformance with ANSI/ASME A90.1, *Safety Standard for Belt Manlifts*.

2.1.4 Transport platforms and overhead winch systems are not subject to this standard.

#### 2.2 Related Standards

2.2.1 **Related American National Standards.** This standard is intended for use in conjunction with the following American National Standards (see section 12 for additional information):

ANSI/ASSP A10.4, *Safety Requirements for Personnel Hoists on Construction and Demolition Sites*

ANSI/ASSP A10.8, *Scaffolding Safety Requirements*

ANSI/ASSP A10.10, *Safety Requirements for Temporary and Portable Space Heating Devices and Equipment*

ANSI/ASSP A10.32, *Personal Fall Protection Used in Construction and Demolition Operations*

ANSI Z97.1 *Standard - Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test*

ANSI Z535.1, *Safety Color Code*