

ANSI/ASSP A10.7 - 2018

Safety and Health Requirements for Construction and Demolition Use, Storage, Handling and Site Movement of Commercial Explosives and Blasting Agents



AMERICAN SOCIETY OF
SAFETY PROFESSIONALS



This is a preview of "ANSI/ASSP A10.7-2018". [Click here to purchase the full version from the ANSI store.](#)

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 A10.7 – 2018

**American National Standard
Construction and Demolition Operations**

**Safety and Health Requirements for
Construction and Demolition Use, Storage, Handling and
Site Movement of Commercial Explosives and Blasting Agents**

Secretariat

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

Approved July 25, 2018

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 they have 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 September 2018 by

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

Copyright ©2018 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 A10.7-2018.)

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 in the A10 series for Safety Requirements in Construction and Demolition Operations follows.

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 (under development)
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	Aerial Platforms in Construction (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
A10.37	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

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:

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

Organization Represented

Name of Representative

3M	Raymond A. Mann
Accident Prevention Corporation	Mike Boraas
AGC of America	Frank Burg, CSP, P.E.
American Insurance Services Group	Terry Krug, CSP, CIH
American Society of Civil Engineers	Michael McCaffrey
American Society of Safety Professionals	Kevin Cannon
American Wind Energy Association	Thad Nosal
American Work Platform Training Inc.	James G. Borchardt, CSP, CPE, CPSM, CRIS
APT Research, Inc.	John O'Connor, P.E.
Associated Builders and Contractors, Inc.	Harlan Fair, P.E.
A-Z Safety Resources, Inc.	Ken Shorter, CSP, ARM, TCDS
Barton Malow Company	A. David Brayton, CSP, CPC
Black & Veatch	Christopher Daniels
Building & Construction Trades Department	Michele Myers Mihelic
Century Elevators	Dennis W. Eckstine
Clark Construction Group	Saralyn Dwyer
Cole-Preferred Safety Consulting, Inc.	Stephen Wiltshire, MSc
Construction & Realty Safety Group, Inc.	Greg Sizemore
CPWR – The Center for Construction Research & Training	Jane F. Williams, CPEA, CCA
Edison Electric Institute	Jeffrey Oliver, CSP, CHST
Elevator Industry Work Preservation Fund	Mark Haggenmaker
Ellis Fall Safety Solutions, LLC	Richard F. King, CSP
Engineering Systems, Inc.	John H. Johnson, CSP
Fluor Corporation	Chris Cain, CIH
Gilbane Building Co.	Gary Gustafson
Richard D. Hislop	Paula Manning
	Eric Schmidt, P.E.
	Kurt Dunmire, CSP, CHST
	Barry Cole
	Ron Lattanzio
	Frank Marino
	Bruce Lippy, Ph.D., CIH, CSP
	Babak Memarian, Ph.D.
	Jonathan Kerns
	Adam Frederick
	Michael D. Morand
	James Demmel
	J. Nigel Ellis, Ph.D., P.E., CSP, CPE
	John T. Whitty, P.E.
	David Ahearn, P.E.
	Edward J. Tuczak, P.E.
	Michael Weatherred, CSP
	Jim Bates, CSP
	Robert Hinderliter, ASP
	Thomas Trauger, CSP, ARM, CRIS
	Richard Hislop
	Shawn Bradfield

Independent Electrical Contractors, Inc.

Innovative Safety, LLC

Institute of Makers of Explosives

International Association of Bridge, Structural,
Ornamental and 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

Lendlease Corporation

Liberty Mutual

Marsh LLC
Maryland Occupational Safety & Health

Mechanical Contractors Association of America

Miller & Long Concrete Construction

National Association of Home Builders

National Association of Railroad Safety
Consultants & Investigators

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.

Paul Dolenc
Jerry Rivera
Daniel M. Paine
Barbara Paine
Joshua Hoffman
Susan JP Flanagan
Steven Rank

Tim Keane

Mark Garrett
Bridget Connors
David Mullen
Dan Gardner
LaMont Byrd, CIH
Asher Tobin
Cristine Fargo
Michael Kassman, CHST
Gerard Scarano
Christopher Trembl
Barbara McCabe
Kenneth Seal
Rusty Brown, CSP
Dave Hinz

Walter A. Jones, MS, CIH
Travis Parsons

Chuck Wigger, CSP
Beth Phelps

Joel Pickering, CET, CHMM
Michael Lentz

Daniel P. Lavoie, CSP, ARM
Stan Williams, ARM, CHST

Timothy Bergeron, CSP
Mischelle Vanreusel

Michael Daughaday
Peter Chaney, MS, CSP

Dennis Langley
Frank Trujillo

Alex Rodas, CHST
Robert Matuga

Chelsea Vetick
Lewis Barbe, P.E., CSP, CRSP

Michael J. Johnston
Wesley Wheeler

Thomas G. Bobick, Ph.D., P.E., CSP, CPE
G. Scott Earnest, Ph.D., P.E, CSP

Jeffrey D. Meddin, CSP, CHEP, CHCM

Harry Dietz
Tom Shanahan

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

Michael Hayslip, P.E., CSP
Jack Madeley, P.E., CSP

Operative Plasterers and Cement Masons
International Association
PATMI

Phoenix Fabricators and Erectors, Inc.

Professional Safety Consultants, Inc.

Safety Environmental Engineering, Inc.
Scaffold & Access Industry Association

Shafer Safety Solutions, LLC
Sheet Metal & Air Conditioning Contractors
National Association
SMART Union

SPA Incorporated
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 & Pipefitters

United Brotherhood of Carpenters and
Joiners of America
United Union of Roofers, Waterproofers &
Allied Workers
West Virginia University Extension Service

ZBD Constructors, Inc.

Deven Johnson

James A. Borchers
Craig Pratt
Luke Humphrey
Frank Massey
Jim E. Lapping, MS, P.E., CSP
Kathryn Stieler
Matthew Murphy
Ted Beville
DeAnna Martin
Carmen Shafer, CSP, CHST
Mike McCullion, CSP, ARM

Randall Krocka
Charles Austin, MS
Stanley Pulz, CSP, P.E.
Steve Stock, P.E., PLS
Wayne Creasap, II
Kathleen Dobson, CSP, CHST, STS.C
Cindy L. DePrater, ALCM
Abdon Friend, CSP
Michelle Brain
Steven Washington
Terry Meisinger
Maurice Haygood
Cheryl Ambrose, CHST, OHST
Rich Benkowski
William Irwin
Dale Shoemaker
Richard Tessier
Keith J. Vitkovich
Brandon Takacs, CSHM
Mark Fullen, Ed.D., CSP
Greg Thompson, CSP
Jeffrey D. Meddin, CSP, CHEP, CHCM

Independent Experts & Observers:

Alliance of Hazardous Materials Professionals
Conner Strong & Buckelew

Lockton Companies
National Association of Tower Erectors

U.S. Department of Labor – OSHA

Warfel Construction Company

Carl Heinlein, CSP, ARM, CRIS
Eric Voight
Ken Bogdan
Jason Scollin, CSP, ASP, MS, STC-C
John P. Jones
Kathryn Stieler
Dean McKenzie
Scott Ketcham
Jeffrey I. Pierce
Kevin Stoltzfus

Subgroup A10.7 had the following members:

Lon Santis, Chair
J. Winston Forde, Vice Chair
Susan JP Flanagan
Mike Koehler
Jerry Wallace

Contents

1. Scope and Purpose.....	12
1.1 Scope	12
1.2 Purpose	12
2. References	12
2.1 Referenced American National Standards	12
2.2 Referenced Institute of Makers of Explosives Standards	13
2.3 Referenced Governmental Publications	13
2.4 Referenced and Related Standards.....	14
3. Definitions	14
4. Pre-Project Safety and Health Planning	23
4.1 General Responsibilities	23
4.2 Site Preparation.....	23
4.3 Site-Specific Safety and Health Program Components	24
4.4 Multi-Employer Sites.....	24
4.5 Determination of Safety Apparatus, Personal Protective Equipment and Atmospheric Testing Devices	25
4.6 Training, Certification, Permits.....	25
4.7 Blasters	25
4.8 Mitigation of Vibration Activity and Atmospheric Overpressure	26
5. On-Site Transportation of Explosives	26
6. Storage of Explosive Materials	29
6.1 General Provisions	29
6.2 Storage of Explosive Material in On-Site Magazines and Mix Plants	29
7. Explosive Magazine Storage, Construction and Table of Distances	31
7.2 Classification of Magazines	39
7.3 Magazine Construction Outdoor	39
7.4 Types of Magazines	41
8. Bulk Storage Units and Mix Plants	45
9 Use of Explosive Materials	45
10 Loading of Explosive Materials for the Blast.....	47
11 Explosive Charges	48
12 Procedure After Blasting	49
12.2 Post-Blast Inspections	49
12.3 Misfires	50

12.4 Blasting Records / Documentation / Record Retention	50
Appendices	52
Appendix A Excavation Work in Compressed Air	52
Annex B Guide to Use of Table of Recommended Separation Distances of Ammonium Nitrate and Blasting Agents from Explosives or Blasting Agents.....	54
Annex C Surface and Underground Blasting	55
Annex D Department of Transportation 49 CFR Hazardous Materials Classes and Index to Hazard Class Definitions.....	57

**AMERICAN NATIONAL STANDARD A10.7
SAFETY AND HEALTH REQUIREMENTS FOR CONSTRUCTION AND DEMOLITION
USE, STORAGE, HANDLING AND SITE MOVEMENT OF COMMERCIAL
EXPLOSIVES AND BLASTING AGENTS**

1. Scope and Purpose

1.1 Scope

1.1.1 This standard is applicable to all entities involved in any construction or demolition project that requires the use of commercial explosives and blasting agents.

1.1.2 This standard is intended to work with the other federal, state and local regulations for use of commercial explosives and blasting agents.

1.1.3 The requirements of this standard do not apply to display or consumer pyrotechnics, small-arms ammunition or explosive power packs in the form of explosive-activated or explosive-charged construction devices such as explosive rivets, explosive bolts, explosive charges for driving pins or studs, cartridges for explosive-actuated power tools, and powder-actuated fastening systems.

1.2 Purpose

The purpose of this standard is to provide the construction industry with recommendations for establishing and maintaining a level of safety and health for the off-highway transportation, storage, storage, and use of commercial explosives and blasting agents for construction and demolition.

2. References

2.1 Referenced American National Standards.

The following ANSI/ASSE A10 standards, in addition to others listed at the front of this document, provide guidance for development of safe and healthful operations.

ANSI/ASSP A10.1, *Pre-Project & Pre-Task Safety & Health Planning*

ANSI/ASSP A10.3, *Safety Requirements for Powder-Actuated Fastening Systems*

ANSI/ASSP A10.6, *Safety & Health Program Requirements for Demolition Operations*

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

ANSI/ASSP A10.12, *Safety Requirements for Excavation*

ANSI/ASSP A10.13, *Safety Requirements for Steel Erection*

ANSI/ASSP A10.15, *Safety Requirements for Dredging*

ANSI/ASSP A10.16, *Safety Requirements for Tunnels, Shafts and Caissons*

ANSI/ASSP A10.19, *Safety Requirements for Pile Installation & Extraction Operations*

ANSI/ASSP A10.23, *Safety Requirements for the Installation of Drilled Shafts*

ANSI/ASSP A10.25, *Sanitation in Construction*

ANSI/ASSP A10.26, *Emergency Procedures for Construction & Demolition Sites*