



# AMERICAN NATIONAL STANDARD

*ANSI/ASSE A10.12-1998 (R2005)  
Safety Requirements for  
Excavation—American National  
Standard for Construction and  
Demolition Operations*

ANSI/ASSE A10.12-1998 (R2005)



AMERICAN SOCIETY OF  
SAFETY ENGINEERS

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**ANSI®**  
**A10.12-1998 (R2005)**

American National Standard for  
Construction and Demolition Operations

## Safety Requirements for Excavation

Secretariat

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**Foreword** (This Foreword is not a part of American National Standard A10.12-1998 (R2005))

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 Planning for Construction Safety and Health (under development)
- 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 (under development)
- A10.6 Demolition Operations
- A10.7 Transportation, Storage, Handling, and Use 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 and Debris Nets
- A10.12 Excavation
- A10.13 Steel Erection
- A10.15 Marine Dredging
- A10.16 Tunnels, Shafts, and Caissons
- A10.17 Safe Operating Practices for Hot Mix Asphalt (HMA) Construction
- A10.18 Temporary Floor Holes, Wall Openings, Stairways, and Other Unprotected Edges
- A10.19 Pile Installation and Extraction Operations (under development)
- A10.20 Ceramic Tile, Terrazzo, and Marble Work
- A10.21 Proper Cleaning and Disposal of Contaminated Work Clothing
- A10.22 Rope-Guided and Non-guided Workers' Hoists
- A10.23 Back Injury Prevention Programs (under development)
- A10.24 Roofing – Safety Requirements for Low Sloped Roofs (under development)
- A10.25 Sanitation in Construction (under development)
- A10.26 Emergency Procedures for Construction Sites (under development)
- A10.27 Hot Mix Asphalt Facilities
- A10.28 Work Platforms Suspended from Cranes or Derricks
- A10.29 Aerial Lifts in Construction (under development)
- A10.30 Construction Workplace Security
- A10.31 Digger-Derricks
- A10.32 Fall Protection Systems for Construction Industry Users
- A10.33 Safety and Health Program Requirements for Multi-Employer Projects
- A10.34 Public Protection
- A10.35 High Pressure Hydro Blasting (under development)
- A10.36 Railroad Construction Safety (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 Ergonomics in Construction (under development)
- A10.41 Equipment Operator and Supervisor Qualifications and Responsibilities (under development)
- A10.42 Rigging Qualifications and Responsibilities in the Construction Industry
- A10.43 Confined Spaces in Construction (under development)
- A10.44 Lockout/Tagout in Construction (under development)
- A10.45 Disaster Response Preparedness for Construction Workers (under development)
- A10.46 Hearing Loss Prevention (under development)
- A10.47 Highway Construction Safety (under development)
- A10.48 Communication Tower Erection (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.

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## AMERICAN NATIONAL STANDARD A10.12 SAFETY REQUIREMENTS FOR EXCAVATION

### 1. SCOPE, APPLICATION AND DEFINITIONS APPLICABLE TO THIS STANDARD

#### 1.1 Scope and Application.

This standard applies to all open excavations made in the earth's surface that require worker and/or property protection. See Section 3, Requirements for Protection Systems. Excavations are defined to include trenches.

#### 1.2 Definitions.

##### 1.2.1 Accepted Engineering Practices.

Those requirements that are compatible with standards of practice required by a registered (licensed) professional engineer.

**1.2.2 Adjacent.** The area within a horizontal distance from the edge of a vertical sided excavation equal to the depth of the excavation.

**1.2.3 Aluminum Hydraulic Shoring.** A pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (walers). Such system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

**1.2.4 Benching (Benching System).** A method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

**1.2.5 Cave-In.** The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure or immobilize a person.

**1.2.6 Competent Person.** One who is capable of identifying existing and predictable

hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these hazards.

**1.2.7 Confined Space.** A space that:

**1.2.7.1** Is large enough and so configured that an employee can bodily enter and perform assigned work; and

**1.2.7.2** Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits); and

**1.2.7.3** Is not designed for continuous employee occupancy.

**1.2.8 Contractor.** A contractor, sub-contractor, specialty contractor or other entity as designated in the project documents, responsible for part of the construction process on a construction project.

**1.2.9 Cross-Braces.** The horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

**1.2.10 Design.** To formulate, evaluate, and prepare plans and/or specifications for a device, system, slope or other means to protect workers in excavations. All worker-protection designs shall be prepared by registered professional engineers.

**1.2.11 Excavation.** Any man made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

**1.2.12 Excavation Competent Person.** One who has received training and can demonstrate knowledge, skills, and abilities to fulfill the duties required by this standard and who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has the