

Welcome to WCC Safety Challenge

Many Thanks go to the following:

- Becky Patterson – West Coast Chapter Administrator
- Jared Bradt – Condon-Johnson – Co-Chair
- Dan Crawford – DBM – Co-Chair
- ADSC West Coast Chapter Safety Committee
- Craig Hamelund - Oregon OSHA Staff Education



ADSC-IAFD:

The International Association of Foundation Drilling

We are a trade association incorporated in 1969 comprised of industry related people working together to advance all aspects of the activities it serves. We are comprised of:

- Contractor Members: foundation drilling, anchored earth retention and geo-support contractors
- Associate Members: manufacturers and suppliers
- Technical Affiliates: engineering and design professionals

ADSC-IAFD

Work of the ADSC includes:

- Establishing standards & specifications for the industries it serves
- Promoting ethical practice
- Conducting design, construction and inspection seminars worldwide
- Developing technical materials
- Funding and conducting original research
- Create added value for our members through best-in-class performance in environment, safety and health
- Providing a forum for the free flow of ideas
- Stimulating industry growth
- Interfacing with corresponding industries and agencies (FHWA, OSHA, DOTs, USACOE)

www.adsc-iafd.com - ADSC Home Page

The International Association of Foundation Drilling

ADSC

The International Association of Foundation Drilling

(469) 359-6000 | adsc@adsc-iafd.com | Member Sign In | 0 Items

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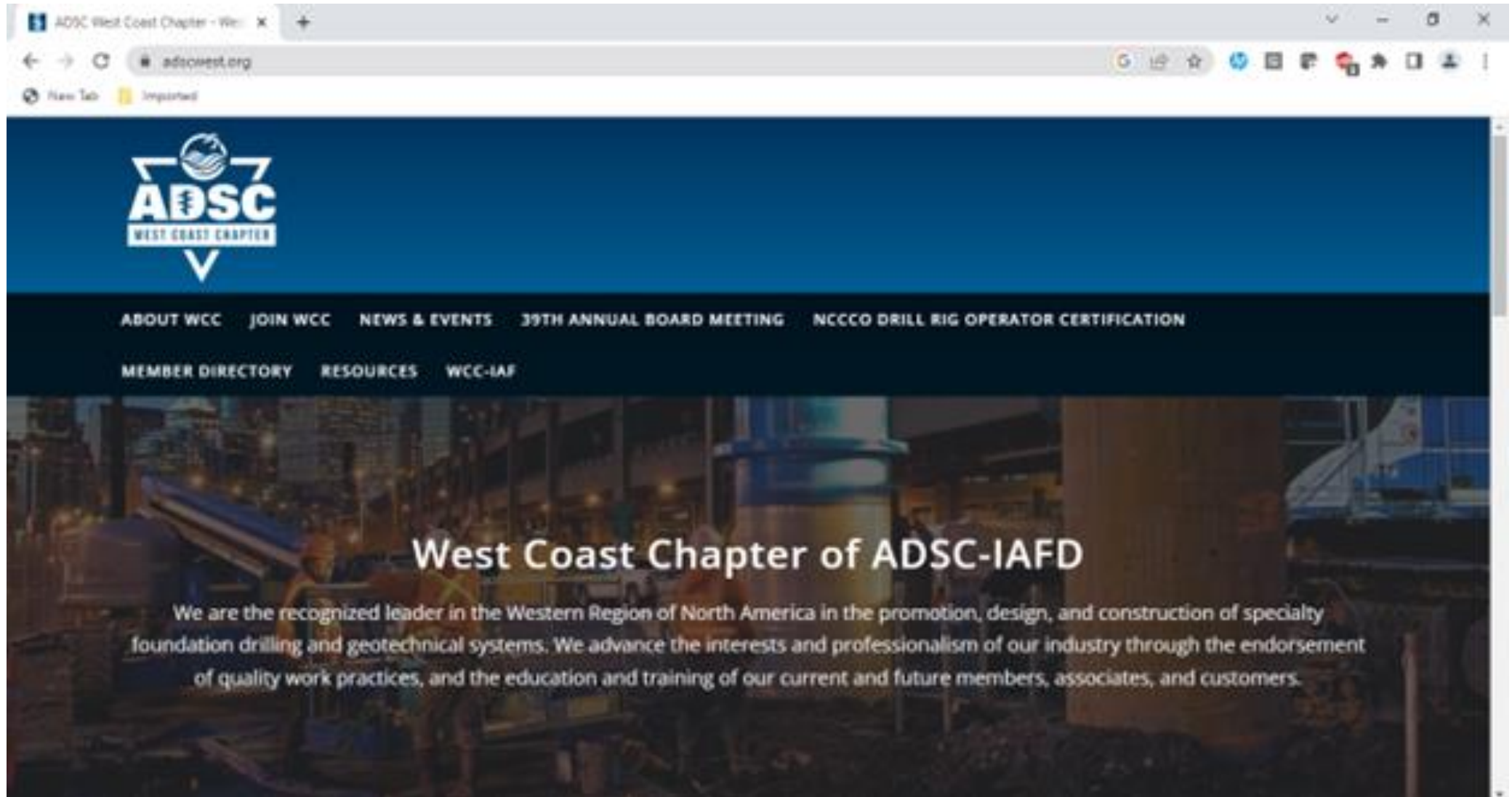
About Us | Membership | Events | Chapters | Committees | Publications | Research & Scholarships

The ADSC-IAFD is continually engaged in a process of evaluation and reinvention. As times change, so do

ADSC Members

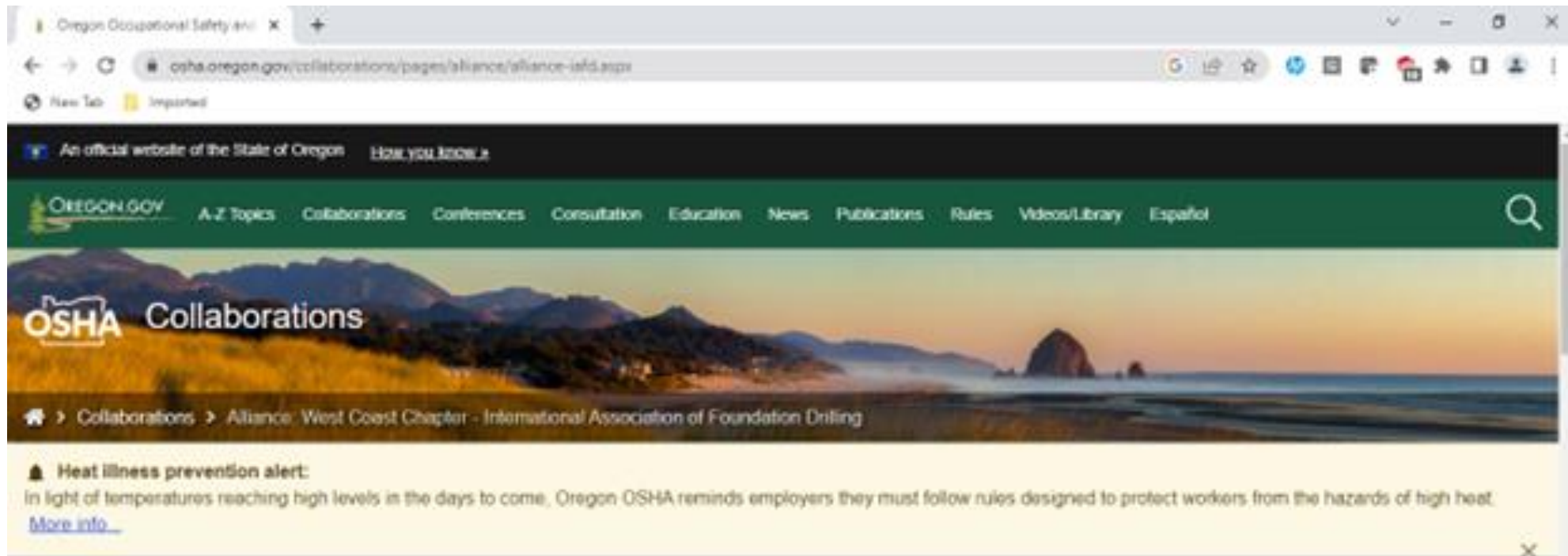
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www.adscwest.org - West Coast Chapter



The image shows a screenshot of a web browser displaying the homepage of the ADSC West Coast Chapter. The browser's address bar shows the URL adscwest.org. The website features a dark blue header with the ADSC West Coast Chapter logo, which includes a globe icon and the text "ADSC WEST COAST CHAPTER". Below the logo is a navigation menu with the following items: ABOUT WCC, JOIN WCC, NEWS & EVENTS, 39TH ANNUAL BOARD MEETING, NCCCO DRILL RIG OPERATOR CERTIFICATION, MEMBER DIRECTORY, RESOURCES, and WCC-IAF. The main content area has a dark background with a cityscape and industrial equipment. The text on the page reads: "West Coast Chapter of ADSC-IAFD" followed by a paragraph: "We are the recognized leader in the Western Region of North America in the promotion, design, and construction of specialty foundation drilling and geotechnical systems. We advance the interests and professionalism of our industry through the endorsement of quality work practices, and the education and training of our current and future members, associates, and customers."

<https://osha.oregon.gov/collaborations/pages/alliance/alliance-iafd.aspx> - OROSHA



Alliance: West Coast Chapter - International Association of Foundation Drilling

COLLABORATIONS

[Alliances](#)

[Interagency agreements](#)

The alliance between Oregon OSHA and the West Coast Chapter of the Association of Drilled Shaft Contractors (ADSC-IAFD) will host a [free event and outreach effort](#) on **Thursday, June 8, 2023** from 8:00am - 4:30pm at Oregon OSHA's Portland field office (16760 SW Upper Boones Ferry Rd. Tigard, OR 97224). Lunch is provided but you need to pre-register.

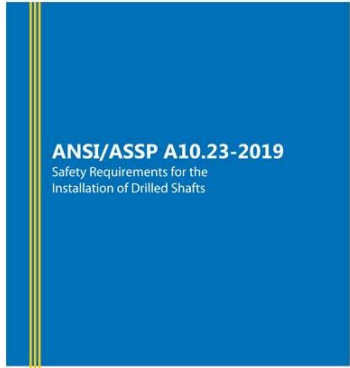
This day is ideal for Top Management, Estimators, Project Managers, Superintendents, Insurance and Safety Professionals, and contractors who use drilling companies and promote safe use.

Augmenting Drilled Shaft and Ground Anchor / Micropile Installation Safety Using the ANSI/ASSP A10.23 – 2019 and A10.30-2020 Standards

Richard Marshall, CHST

Director of Safety

The International Association of Foundation Drilling



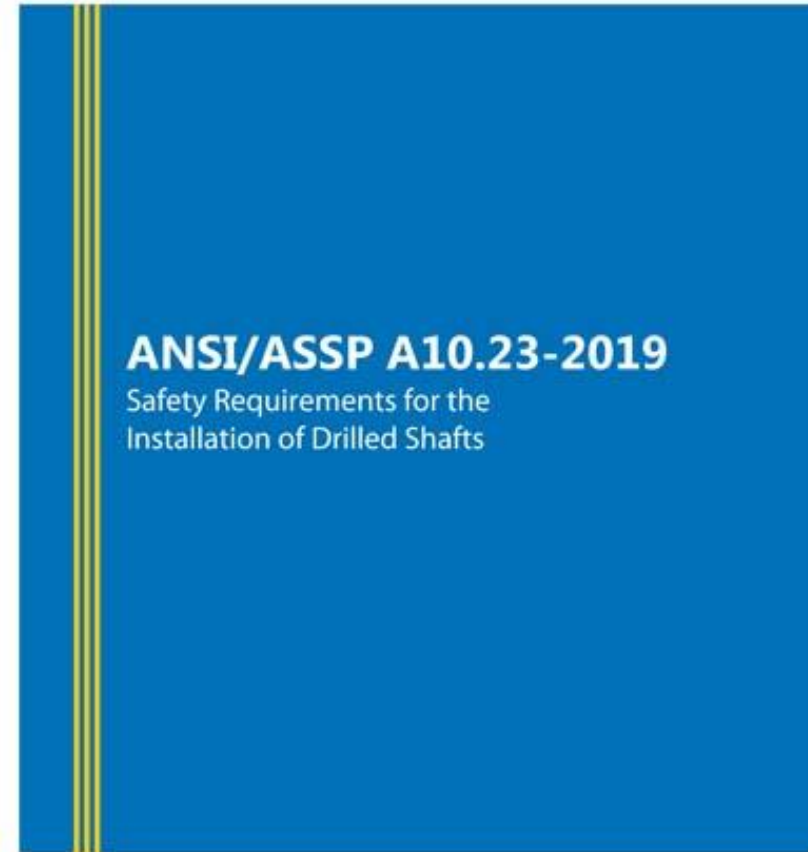
What is an ANSI Standard?

ANSI standards such as A10.23 or A10.30 are not a law. Government standards such as the OSHA CFR 1926 Construction standards are laws and for that reason, compliance is always mandatory. Compliance with an ANSI Standard is voluntary. They represent a consensus on what industry subject matter experts consider safe.

Not following industry specific consensus standards may be considered a violation of the OSHA “general duty” clause. Section 5(a)(1) *“Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.”* This is a very basic requirement that has a very broad interpretation.

ANSI / ASSP Voluntary Standards

- A10.19 R2017 - Safety Requirements for Pile Installation and Extraction Operations
- A10.23 R2019 – Safety Requirements for the Installation of Drilled Shafts
- A10.30 2020 – Safety Requirements for the Installation of Ground Anchors and Micropiles



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A10.23-2019

ANSI/ASSP A10.23-2019

Safety Requirements for the
Installation of Drilled Shafts

<https://store.assp.org/PersonifyEbusiness/Store/Product-Details/productId/192660042>



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ANSI/ASSP A10.30-2020
Safety Requirements for the Installation of
Ground Anchors and Micropiles



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A10.30-2020

<https://store.assp.org/PersonifyEbusiness/Store/Product-Details/productId/213257306>

Key Definitions Found in Each ANSI Standard for Deep Foundations

Competent Person. One who is capable of identifying existing and predictable hazards in the surroundings or identifying working conditions that are unsanitary, hazardous or dangerous to employees, and who has the authority to take prompt corrective measures to eliminate them.

Project Constructor. A person, firm or corporation, (i.e., the construction manager, general contractor, prime contractor or other entity), as designated in the project documents, responsible for supervising and controlling all construction work performed on the project.

4. Site-Specific Safety Plan

A10.23 requires the drilled shaft contractor to develop a written Site-Specific Safety plan and Job Hazard Analyses for the unique drilled shaft activities and tasks to be performed.

Procedures such as utility location, fall protection, confined space rescue, assembly / disassembly of equipment, equipment operation, concrete placement, personal protective equipment, and project demobilization shall be addressed.

The drilled shaft contractor's competent person shall review the plan with all workers potentially exposed to hazards posed by the drilled shaft operations.

5. Site Investigation

A geotechnical investigation shall be performed to identify subsurface conditions such as:

- geological history, including information on prior excavations and fills,
- existing and potential groundwater conditions,
- engineering data addressing foundation types for proposed structures, retaining systems, grading considerations, stability of cut-slopes and constructed embankments,
- geological and environmental hazards and an explanation of their potentially harmful effects to workers involved in the drilled shaft operations.

5. Site Investigation

The Project Constructor, as designated in the project documents, is required to inform the drilled shaft contractor of:

- known locations of subsurface hazards (voids, tanks, utilities, etc.) where drilled shaft equipment will be used.
- locations of such hazards shall be identified in documents such as site plans, as-built drawings, geotechnical reports and physical markings for utilities.

6. Site Conditions

The Project Constructor shall also:

- ensure that drilled shaft equipment not be assembled, disassembled, or used unless the ground conditions on which they are moved or placed are firm, drained (except for marshes/wetlands),
- graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.
- including the associated ramps and access points for the duration of the drilled shaft installation process.

Site Conditions



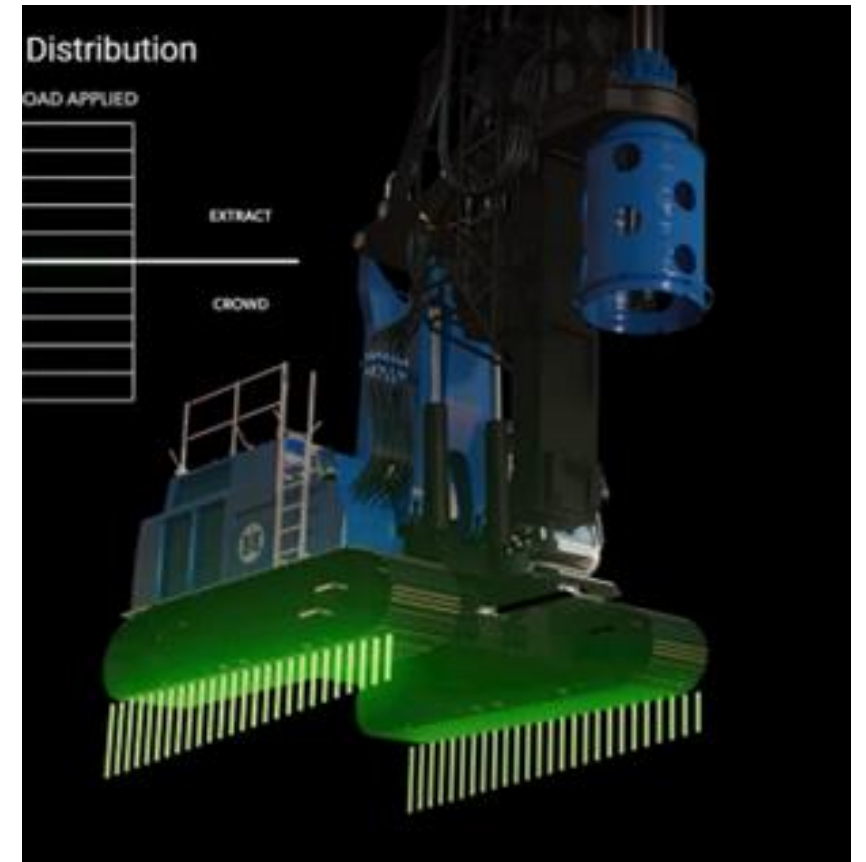
Safe ground conditions for equipment



Unsafe ground conditions for equipment

Site Conditions

- The drilled shaft contractor shall provide the project constructor with accurate ground bearing pressures generated by their equipment.
- This will enable the project constructor to design, construct and maintain adequate ground conditions for the foundation drilling equipment, auxiliary equipment, and delivery vehicles for the duration of the drilled shaft installation process.



Site Conditions

- The drilled shaft contractor shall establish a restricted access zone around the drilling and/or hoisting areas to prevent access by persons not directly involved in such operations.
- Only trained and authorized personnel engaged in the drilled shaft installation shall be allowed inside the restricted access zone.



Site Conditions

- When shaft drilling is complete, and movement of the drilling equipment is necessary, maintain a clearance distance of at least one diameter of the shaft when traveling the equipment to prevent surface cave-in and potential equipment overturning.
- Adequate temporary or surface casing installed to a depth of at least one shaft diameter may be installed in lieu of maintaining the clearance distance.



8. Delivery and Storage of Reinforcing Steel and Casing

- The project constructor shall ensure the reinforcing steel contractor and the concrete contractor are provided adequate access roads into and through the site for the safe delivery and movement of necessary equipment and the material to be erected and placed and means and methods for pedestrian and vehicle control as required in *ANSI/ASSP A10.9, Safety Requirements for Concrete and Masonry Work*.



Delivery and Storage of Reinforcing Steel and Casing



Inadequate access



Adequate access



Materials Handling to Final Points of Use

- The drilled shaft contractor shall comply with the manufacturer's specifications and limitations applicable to the operation of drill rigs, cranes, forklifts, front-end loaders, boom trucks and other mechanized equipment used to handle material.
- Only rigging and equipment of adequate capacity and configuration shall be used to handle material.

Materials Handling to Final Points of Use

- If reinforcing steel cages require to be lifted and placed using mechanized equipment designed to handle material, the reinforcing steel cages shall be designed to be lifted from a horizontal to vertical position, the cage center of gravity identified, and the appropriate number and locations of rigging points, by the engineer of record for the reinforcing cage design.
- The rigging point connections shall be designed for a factor of safety of 2 or greater.



10. Power Equipment

- All equipment used for drilled shaft installations shall be inspected by a qualified person prior to each working shift. Such inspections shall be documented.
- All power equipment shall be operated in accordance with its manufacturer's specifications for use.



12. Specific Drilled Shaft Installation Equipment Requirements

- The drilled shaft installation equipment manufacturer's recommendations for assembly, disassembly, inspection, maintenance, stability and operation shall be followed.
- The equipment operator must be familiar with the equipment's configuration and its safe operating procedures and limitations, per the manufacturer's specifications
- Modifications to such equipment shall be subject to the equipment manufacturer's approval.



Specific Drilled Shaft Installation Equipment Requirements

Prior to any drilling operations, all overhead and underground utilities must be located. The drilled shaft contractor is responsible for contacting the local One Call Center service to locate and mark public utilities, and the project constructor or site owner to locate and mark private utilities.





Specific Drilled Shaft Installation Equipment Requirements

- The use of an auxiliary winch on drilled shaft installation equipment shall be within the limits established by the equipment manufacturer.
- A hoist or lift plan should be completed by the drilled shaft contractor prior to hoisting loads with the auxiliary winch.
- The use of a multi-part load block to increase the lifting capacity of an auxiliary winch on drilled shaft installation equipment is prohibited without written authorization from the equipment manufacturer.

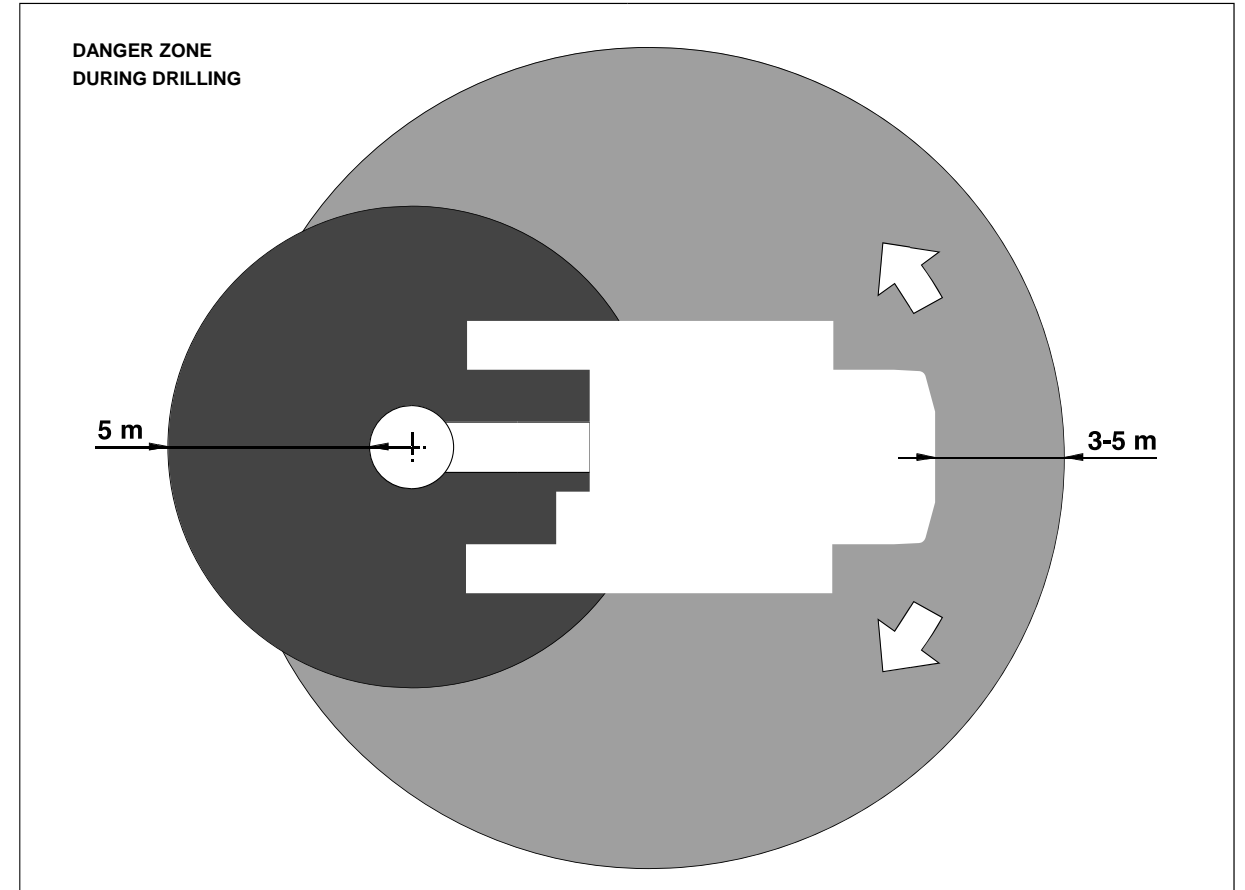
Specific Drilled Shaft Installation Equipment Requirements

- A qualified signal person shall be positioned in full view of the equipment operator before any drilled shaft equipment is relocated at the work site.
- Hand or voice signals shall be used. The operator shall accept signals only from the designated signalperson except for an emergency stop signal, which may be given by any worker.



Specific Drilled Shaft Installation Equipment Requirements

The swing radius of the drilling equipment shall be fully barricaded during all drilling operations, except when tramming or traveling the equipment onsite.



Specific Drilled Shaft Installation Equipment Requirements

- Wherever possible, methods to control dust exposure when drilling shall be used. These controls may include but are not limited to: Mechanical dust collection using shrouds, suction and filters, water misting the dust as it exits the bore hole, or injecting water through the drill steel as drilling occurs.
- The requirements for employee protection against silica exposures found in CFR1926.1153 Respirable crystalline silica, shall be met during drilled shaft installation operations.



12.23. Concrete Pumping, Placement and Slurry Operations

The drilled shaft contractor shall designate a pump/pour supervisor to oversee the placement of concrete in dry, cased, or slurried drilled shafts.



Concrete Pumping, Placement and Slurry Operations

- A signal person shall be provided when the point of operation (includes area of load travel and area immediately surrounding the load placement) is not in full view of the vehicle, machine, or equipment operator; or when concrete supply vehicles are backed in, when terrain is hazardous; or when two or more vehicles are backing in the same area.



Concrete Pumping, Placement and Slurry Operations

- Concrete pump operator shall be trained on the safe operation of the equipment, including the prevention of hose whipping due to air introduced into the delivery system.
- Before any machinery or mechanized equipment is placed in use, it shall be inspected and tested in accordance with the manufacturer's recommendations by a qualified person.



Concrete Pumping, Placement and Slurry Operations



- Closed top slurry storage tanks are confined spaces and shall be marked as such.
- No employee shall enter without first receiving confined space training, and then performing air quality monitoring and ventilation in accordance with *ANSI/ASSE A10.43 Confined Spaces in Construction*.





Concrete Pumping, Placement and Slurry Operations

- Slurry mixer/pump and de-sanding unit operator must be trained on the safe operation of the equipment.
- Before any machinery or mechanized equipment is placed in use, it shall be inspected and tested in accordance with the manufacturer's recommendations by a qualified person.



13. Fall Protection

- Employees working in the restricted access zone during shaft construction shall be protected from falls into shafts 6 feet (1.8m) or more in depth by standard guardrails, personal fall protection, or covers meeting the requirements of ANSI/ASSE A10.32, *Fall Protection Systems for Construction and Demolitions*.



14. Casing Extraction

- If casing cannot be extracted without exceeding the load rating of equipment, a casing extractor shall be used.
- The drilled shaft contractor shall follow the crane manufacturers required procedures, for this operation. At no time, shall the crane's lifting capacity for the full working radius of the driving or extraction operation, be exceeded.

Casing Extraction

- At no time shall the operator of the crane cause the load to bounce. Casing shall not be pulled by tipping the crane, releasing the load brake momentarily, and catching the load before the crane has settled.



15. Drilled Shaft Entry

- The practice of entering drilled shafts for activities such as hand cleaning, visual inspection and/or equipment retrieval should be undertaken only after a determination by a qualified person that there are no less hazardous alternative methods to accomplish the work.



Drilled Shaft Entry

- All employees assigned duties associated with a shaft entry shall receive training in the recognition of the hazards associated with shaft entries, the duties and responsibilities of personnel entering the shaft, those attending to personnel in the shaft and those supervising the shaft entry.
- The content of the training shall be documented.





Drilled Shaft Entry

- A written, site-specific rescue plan must be created for each project where shaft entry will take place. The rescue plan shall include but is not limited to:
- Emergency contact information.
- Identity of the type of rescue team to be used; self-rescue or outside emergency services.

16. Working Over or Near Water

- Land based cranes, drill rigs, derricks, or other land-based equipment working from floating barges or pontoons shall operate at less than their rated capacities on land.
- The manufacturer's recommended load rating and allowable list and trim for such equipment working from the water shall not be exceeded.
- All deck surfaces or the crane pontoon or barge shall be above the water and the entire bottom of the pontoon or barge shall be submerged.



Working Over or Near Water

- Training on the hazards associated with working over or near the water shall be provided by the drilled shaft contractor. The training shall include water rescue procedures.
- These rescue procedures shall be practiced at the start of the project and then at least monthly for the duration of the project.
- Additionally, the skiff operator shall be trained and qualified for safe boat operations including boat rescue procedures.



17. Training

Only personnel, who have received instructions regarding the inspection, application, and operation of drilled shaft installation equipment, including recognition and avoidance of hazards associated with their operation, shall operate drilled shaft installation equipment.



Training

Under the direction of a qualified person, a trainee shall operate the drilled shaft installation equipment for a sufficient period of time to demonstrate proficiency in the actual operation of the drilled shaft installation equipment.



Training

- The Drilled Shaft Contractor shall provide training for their ground personnel including recognition and avoidance of hazards associated with the installation of drilled shafts.
- A minimum of one employee per shift shall be trained in first aid and CPR, should the local emergency provider response time be greater than 15 minutes.



Summary

- This has been a brief overview of some of the key requirements of the ANSI standards for the deep foundation industry. Drilled Shafts and Ground Anchor / Micropiles Industry have their own unique hazards, not common to other types of construction.
- As such, this standard was written with a drilled shaft contractor in mind, but more specifically, for the employees who perform the work. They are meant to be a “user-friendly” document, applicable to the tasks involved with drilled shaft or anchor / micropile installation.
- The goal is to achieve 100% safe, productive, high-quality work.

Mouse traps are effective because most mice do not recognize the hazard. This mouse adheres to ANSI Standards!



Questions?

