

# Pile Driving Safety Program

Guy's Construction  
123 Main Street, Anytown, CA 90210

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29 CFR 1926.603 - Pile Driving  
29 CFR 1926.604 - Site Clearing

Effective Date: June 08, 2026  
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**SAMPLE DOCUMENT - NOT FOR COMPLIANCE USE**

## JURISDICTION AND REGULATORY FRAMEWORK

OSHA regulates workplace safety through two parallel systems:

- Federal OSHA: enforces standards in states without an approved state plan
- State plan OSHA: states that operate their own program with standards that meet or exceed federal requirements

**STATE-SPECIFIC NOTICE: California operates a state plan. The following state requirements apply:**

- aligned with the pile and pile hammer as a pile is driven
- kept aligned with the pile and pile hammer as a pile is driven
- unclamping from the pile when there is any line pull on the suspension or when the pile hammer is still vibrating
- from the pile when there is any line pull on the suspension or when the pile hammer is still vibrating
- §§ 1926.1433(d)(1) through (d)(6)
- any space containing a dip tank, including its drain boards, associated drying or conveying equipment, and any surrounding area where the va
- section 516
- immediately disconnect the power supply to the high-voltage transformer and signal the operator
- all other applicable standards contained in this part 1910
- Pile driving equipment, effective January 19, 2005
- Oregon
- § 1926.603 (Pile driving equipment)
- 29 CFR 1926.603
- compliance with 29 CFR 1926.603
- the required medical surveillance including multiple physician review under paragraph (j)(3)(iii) without cost to employees and at a reasona
- at least the following hazards are addressed: (A) Reproductive/developmental toxicity; (B) Central nervous system effects; (C) Kidney effect
- by vacuuming or other methods that minimize the likelihood of lead becoming airborne wherever possible
- exposure which would occur if the employee were not using a respirator
- the use of reclaimed water in oil and gas operations

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## 1.0 PURPOSE AND SCOPE

This Pile Driving Safety Program establishes requirements for the safe operation of pile driving equipment on Guy's Construction projects. It covers: equipment inspection, hammer operations, lead systems, personnel protection, over-water operations, noise controls, and crane coordination during pile driving activities.

*29 CFR 1926.603*

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## 2.0 PILE DRIVING EQUIPMENT REQUIREMENTS

- a jib attached during pile driving operations

29 CFR 1926.1417(p)

- Boilers/Piping Meeting ASME Power Boilers Section I

1926.603(a)(1)

- 1926.605 Marine Operations and Equipment

1926.603(b)

- employees standing at grounding location when possibility of overhead line contact exists
- Pile driving equipment, effective January 19, 2005
- Oregon
- § 1926.603 (Pile driving equipment)
- 29 CFR 1926.603
- compliance with 29 CFR 1926.603

## 3.0 PILE HAMMER OPERATIONS

Pile hammers must have adequate blocking devices to support the hammer when employees work below.

29 CFR 1926.603(a)(5)

**DANGER: Never allow employees under a raised pile hammer without the blocking device in place. The blocking device must be capable of supporting the full weight of the hammer.**

## 4.0 LEAD SYSTEMS AND GUIDE EQUIPMENT

Fixed leads must have ladder and safety belt attachment points for loft workers.

29 CFR 1926.603(a)(8)

## 5.0 BOILERS AND PRESSURE VESSELS

## 6.0 PERSONNEL SAFETY AND FALL PROTECTION

Pile driving operations create multiple hazards for personnel: falling objects, struck-by from equipment/materials, falls from leads and equipment, noise exposure, and hand/arm vibration.

### 6.1 PPE Requirements

- Hard hat: required for all personnel within the pile driving exclusion zone
- Hearing protection: mandatory (see Section 8.0 - Noise Controls)
- Safety glasses with side shields
- Steel-toed boots
- High-visibility vest
- Fall protection: required when working at heights on leads or equipment per 29 CFR 1926.501
- Gloves: as appropriate for the task

### 6.2 Exclusion Zones

Establish an exclusion zone around the pile driving operation. No unauthorized personnel within the zone during driving operations. The zone must account for: the swing radius of the crane/rig, the potential fall zone of the pile and hammer, and material handling areas.

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## 7.0 PILE DRIVING FROM BARGES AND OVER WATER

When pile driving is conducted from barges or over water, 29 CFR 1926.605 (Marine Operations) applies in addition to 1926.603.

- access to void compartments to allow for inspection and pumping

*29 CFR 1926.1432(n)(7)(iii)*

- a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free surface effect

*29 CFR 1926.1432(n)(7)(ii)*

- structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick's maximum rated capacity with all anticipated deck loads and ballasted compar

*29 CFR 1926.1432(n)(7)(i)*

- 29 CFR 1926.605 Marine Operations

*29 CFR 1926.603(b)*

- 1926.605 Marine Operations and Equipment

*1926.603(b)*

- pressure tests at 1.15 times the pressure calculated to result from carbon dioxide inerting (concrete containments)
- HAZWOPER Trained Personnel
- Permanent signs shall clearly designate electrolytic cell areas

**All employees working over water where the danger of drowning exists must be provided with U.S. Coast Guard-approved life jackets or buoyant work vests. Ring buoys with at least 90 feet of line must be available.**

## 8.0 NOISE AND VIBRATION CONTROLS

Impact pile driving generates noise levels typically between 95-115 dBA at the operator position. This exceeds OSHA's permissible exposure limit (PEL) of 90 dBA TWA and action level of 85 dBA TWA. Hearing protection is mandatory for all personnel in the pile driving zone.

- Ship engine rooms commonly reach 95-115+ dBA. Double protection (earplugs + earmuffs) required when noise exceeds 105 dBA. Hearing conservation program per 1910.95. Ship repair operations (grinding, c

*29 CFR 1910.95; OSHA guidance*

- jet engine testing, riveting, grinding, and composite layup create noise levels 90-140 dBA; hearing conservation program at 85 dBA action level; engineering controls (sound barriers, isolation), heari

*29 CFR 1910.95 (Occupational noise exposure)*

- noise levels exceed 105 dBA; combination of earplugs + earmuffs; ship engine rooms commonly reach 95-115+ dBA

*1910.95 / OSHA guidance*

## 8.1 Vibration Monitoring

Pile driving generates ground vibration that can damage adjacent structures. Before driving, document the condition of adjacent structures (pre-construction survey). Monitor vibration levels during driving. Stop work if vibration exceeds project limits or if visible damage occurs to adjacent structures.

## 9.0 CRANE OPERATIONS DURING PILE DRIVING

Cranes used in pile driving operations must comply with 29 CFR 1926 Subpart CC (Cranes and Derricks).

*29 CFR 1926.1438(b)(2)(i)*

- Crane must be rated for the combined weight of the leads, hammer, pile, and all rigging
- Annual inspection current and documented
- Operator certified per 29 CFR 1926.1427
- Crane set up on firm, level ground with adequate bearing capacity
- Outriggers fully extended and on adequate cribbing/pads
- Swing radius barricaded

## 10.0 PRE-DRIVING SITE ASSESSMENT

Before pile driving begins, conduct and document a site assessment covering:

- Underground utilities: contact 811 and verify utility locations. Positive identification required before driving within 5 feet of a marked utility.
- Soil conditions: borings, geotechnical report, soil classification per Appendix A of Subpart P
- Adjacent structures: pre-construction condition survey (photos/video)
- Overhead utilities: maintain required clearances per Table A (29 CFR 1926.1408)
- Environmental restrictions: waterway permits, species protection, noise limits, work windows
- Ground bearing capacity: verify adequate for crane/rig setup and material storage
- Access/egress: emergency vehicle access, evacuation routes

## 11.0 TRAINING REQUIREMENTS

All employees involved in pile driving operations must receive training on:

- This Pile Driving Safety Program
- Specific hazards of pile driving (struck-by, noise, falls, caught-between)
- Equipment-specific operation and inspection procedures
- Emergency procedures including man overboard (for over-water operations)
- Signal person communication (hand signals or radio protocol)
- PPE requirements and proper use

Training must be documented. Refresher training is required when new equipment is introduced, procedures change, or an employee demonstrates unsafe practices.

## 12.0 RECORDKEEPING

Record	Retention	Notes
Daily pile driving inspection	Daily	Each driving day
Crane inspection (annual)	Life of crane	Per Subpart CC
Operator certifications	Duration of employment	Per 1926.1427
Pile driving plan	Project duration + 3 years	Per project
Pre-construction survey	Project duration + 3 years	Adjacent structures
Noise monitoring records	Duration of employment + 30 years	Per 1910.95(m)
Training records	Duration of employment	All personnel
811 utility locate records	Project duration + 3 years	Per locate

## California STATE-SPECIFIC REQUIREMENTS

### The following requirements apply under California's state plan:

- aligned with the pile and pile hammer as a pile is driven
- kept aligned with the pile and pile hammer as a pile is driven
- unclamping from the pile when there is any line pull on the suspension or when the pile hammer is still vibrating
- from the pile when there is any line pull on the suspension or when the pile hammer is still vibrating
- §§ 1926.1433(d)(1) through (d)(6)
- any space containing a dip tank, including its drain boards, associated drying or conveying equipment, and any surrounding area where the vapor concentration exceeds 25% of the LFL of the liquid in th
- section 516
- immediately disconnect the power supply to the high-voltage transformer and signal the operator
- all other applicable standards contained in this part 1910
- Pile driving equipment, effective January 19, 2005
- Oregon
- § 1926.603 (Pile driving equipment)
- 29 CFR 1926.603
- compliance with 29 CFR 1926.603
- the required medical surveillance including multiple physician review under paragraph (j)(3)(iii) without cost to employees and at a reasonable time and place
- at least the following hazards are addressed: (A) Reproductive/developmental toxicity; (B) Central nervous system effects; (C) Kidney effects; (D) Blood effects; and (E) Acute toxicity effects
- by vacuuming or other methods that minimize the likelihood of lead becoming airborne wherever possible
- exposure which would occur if the employee were not using a respirator
- the use of reclaimed water in oil and gas operations

## APPENDIX A: DAILY PILE DRIVING INSPECTION CHECKLIST

**Date:** \_\_\_\_\_ **Project:** \_\_\_\_\_  
**Inspector:** \_\_\_\_\_ **Pile Type:** \_\_\_\_\_  
**Rig/Crane ID:** \_\_\_\_\_ **Hammer Type/Model:** \_\_\_\_\_

Category	Item	OK	N/A	Notes
Crane/Rig	Annual inspection current and on file			
Crane/Rig	Pre-shift inspection completed by operator			
Crane/Rig	Outriggers fully extended and on adequate pads			
Crane/Rig	Load chart available and within rated capacity			
Leads	Ladder and safety belt attachment points in place			
Leads	Leads plumb and properly secured			
Leads	Guide rails/channels free of damage			
Hammer	Blocking device functional			
Hammer	Hammer properly seated in leads			
Hammer	Cushion/cap in acceptable condition			
Boilers/Hoses	Boiler inspection current			
Boilers/Hoses	Safety chains on all hose connections			
Boilers/Hoses	Steam/air lines in good condition			
Site	Exclusion zone established and barricaded			
Site	Swing radius barricaded			
Site	Underground utilities located and marked			
Site	Adjacent structures pre-surveyed			
PPE	Hard hats, hearing protection, safety glasses, hi-vis			
PPE	Fall protection for work at height on leads/equipment			
Communications	Signal person designated and qualified			
Communications	Radio/hand signal protocol established			
Over Water	Life jackets for all personnel			
Over Water	Ring buoys with 90 ft of line			
Over Water	Rescue skiff available			

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

Superintendent: \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX B: PILE DRIVING PLAN TEMPLATE

Project: \_\_\_\_\_  
Contractor: \_\_\_\_\_  
Prepared By: \_\_\_\_\_

Location: \_\_\_\_\_  
Plan Date: \_\_\_\_\_  
Approved By: \_\_\_\_\_

**1. Project Description (scope, number/type of piles, depths, design loads)**


**2. Equipment (crane/rig model, capacity, hammer type/energy, leads type)**


**3. Site Conditions (soil type, groundwater, adjacent structures, utilities)**


**4. Driving Sequence (order, layout, orientation, splice procedures if applicable)**


**5. Pile Handling and Storage (laydown area, pick points, storage method)**


**6. Crane Setup (location, bearing capacity, outrigger plan, swing zones)**


**7. Personnel (operator, signal person, laborers, competent person)**


**8. Safety Measures (exclusion zones, PPE, noise controls, fall protection)**


**9. Over-Water Measures (if applicable: life jackets, rescue boat, USCG coordination)**


**10. Vibration Monitoring Plan (pre-survey, monitoring locations, action levels)**


**11. Environmental Compliance (permits, noise limits, turbidity, species windows)**


**12. Emergency Procedures (man overboard, equipment failure, structural damage)**


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