



Concrete formwork is essential for shaping and supporting poured concrete until it gains sufficient strength. Improper design, installation, or removal of formwork can lead to structural failure, injuries, and fatalities. Washington State regulations require strict adherence to safety standards to protect workers and ensure structural integrity.

Safety Hazards

- Collapse due to inadequate support or bracing
- Falls from elevated formwork platforms
- Struck-by incidents from shifting or falling materials
- Overloading due to improper load calculations
- Electrical hazards from equipment used near formwork

Safety Guidelines

1. Design and Planning

- All formwork must be designed to support anticipated vertical and lateral loads without failure.
- Complex formwork or high-pressure systems must be approved by a qualified engineer or experienced form designer.
- Plans must include load calculations, bracing details, and shoring layouts.

2. Installation

- Use proper materials—No. 9 tie wire, fiber rope, or makeshift lashing is prohibited.
- Forms must be securely attached to slings with a minimum safety factor of 5 when lifted.
- Taglines must be used when moving large panels by crane or hoist.

3. Shoring and Reshoring

- Shoring must be designed to resist live loads, dead loads, and lateral forces such as wind and equipment impact.
- Inspect shoring before, during, and after concrete placement.
- Do not use damaged or weakened shoring equipment.
- Shoring from soil or fill must be evaluated by a qualified person to ensure load-bearing capacity.

4. Inspection and Documentation

- Keep drawings and revisions for formwork, shoring, and scaffolding on-site.
- Inspect all components regularly and document findings.
- Deviations from the shoring plan must be approved by the original designer.

5. Removal and Reshoring

- Do not remove shoring until approved by a qualified engineer.
- Ensure reshoring is properly placed and capable of supporting loads.
- Avoid placing construction loads on partially cured concrete.

Best Practices

- Train workers on formwork hazards and safe practices.
- Use only approved lifting and hoisting equipment.
- Maintain clear communication between crews during concrete placement.
- Monitor weather conditions that may affect soil or structural stability.