

Cold Weather Concrete Protection JHA

Worked instructional example

Work and worksite

A concrete crew will protect a newly placed ground-level building slab with specified insulating blankets and a temporary enclosure heated by an indirect-fired unit located outside. A designated attendant monitors the arrangement. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- The concrete protection plan establishes temperature monitoring and the conditions for changing or removing protection.
- Heater, duct, ventilation and exhaust arrangements follow the actual unit instructions and site fire plan.
- Concrete placement, direct-fired indoor heaters and stripping or strength-based loading are outside this example.

Questions before work

- Who sets the concrete temperature criteria and reviews records?
- Where will combustion exhaust go relative to intakes and occupied areas?
- How are enclosure exits, fire clearances and monitoring maintained overnight?

Task Hazard Control

1 Release the protection plan

Hazard: Unplanned heating can expose workers or conceal an unsafe slab condition.

Control: Concrete lead establishes protection limits, monitoring locations and responsible attendants. Confirm blanket access will not damage the slab and separate curing criteria from any structural loading release.

Verification: Lead checks the plan and slab handover before blanket installation.

Reasoning: Temperature protection is not evidence of safe structural loading.

2 Install blankets and enclosure

Hazard: Wind can move coverings; frames, ties and cords can block exits or create trip hazards.

Control: Secure the enclosure using the planned supports and wind limits. Lay blankets from released access and keep designated exits and walking routes clear; protect heater clearances.

Verification: Foreperson checks tie security and exits before enclosure use.

Reasoning: Covering the slab must not remove escape access.

3 Position the external heater

Hazard: Exhaust entering a doorway or intake can cause carbon-monoxide poisoning; hot ducts can ignite coverings.

Control: Assigned heater operator positions the indirect-fired unit, exhaust and ducts using its instructions and required clearances. Verify ventilation and combustion separation; do not rely on smell or a CO alarm as the sole control.

Verification: Operator and lead check the complete air and exhaust route before startup.

Reasoning: External placement alone does not prevent exhaust recirculation.

Complete the work and hand over

4 Start and monitor heating

Hazard: A heater fault, blocked airflow or temperature change can create fire or exposure.

Control: Trained attendant performs specified startup checks and monitors heater condition, enclosure air and concrete temperature at planned intervals. Use selected exposure monitoring where required; stop for alarms, symptoms or unsafe airflow.

Verification: Attendant records actual readings and actions rather than copying planned values.

Reasoning: A monitoring plan needs real observations to function.

5 Refuel and transfer attendance

Hazard: Unattended malfunction or fuel near hot equipment can create a fire.

Control: Follow the unit's shutdown and cooling instructions for fuel service. Transfer responsibility, readings, fuel arrangements, limits and emergency actions to the next attendant; do not leave a system unattended unless its instructions and site plan permit.

Verification: Outgoing and incoming attendants confirm the handover and contact method.

Reasoning: Cold-weather protection often spans shifts.

6 Remove protection by release

Hazard: Early removal, hot ducts or unsecured coverings can expose the next crew.

Control: Obtain the concrete lead's protection-removal release, shut down and cool the heater, and remove coverings in the planned sequence. Secure equipment and communicate remaining access or loading restrictions.

Verification: Lead records release and checks the cleared access before handover.

Reasoning: Curing-protection removal and structural acceptance are separate decisions.

Pause and reassess

- Exhaust path, ventilation or heater clearances change.
- CO alarm, exposure symptoms, fire, heater fault or lost monitoring.
- Wind affects enclosure stability or concrete temperatures leave planned limits.

Improve the controls

Needs improvement: Work carefully and wear PPE.

More useful: Assigned heater operator positions the indirect-fired unit, exhaust and ducts using its instructions and required clearances. Verify ventilation and combustion separation; do not rely on smell or a CO alarm as the sole control.

Needs improvement: Check that everything is ready.

More useful: Concrete lead establishes protection limits, monitoring locations and responsible attendants. Confirm blanket access will not damage the slab and separate curing criteria from any structural loading release.

Decisions that change the analysis

Does reaching the curing temperature authorize form removal or loading?

No. Those decisions need their separate documented strength and design criteria. This analysis covers protection and heating, not structural acceptance.

What must the crew record for actual use?

Identify the actual equipment and work boundaries, responsible people, applicable criteria, inspection findings and open actions. Resolve changes with affected crews and obtain required project authorization before work.

Training needs

- Actual heater setup, ventilation, fuel service and emergency shutdown instruction.
- Concrete protection monitoring, exposure response and shift-handover responsibilities.

Confirm applicable qualifications and actual training evidence for the people assigned. Related toolbox talks support discussion; they do not establish competence.

References and adaptation

OSHA 1926.154 Temporary heating devices
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.154>

OSHA 1926.21 Safety training and education
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.21>

OSHA 1910.1200 Hazard communication
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200>

References reviewed October 9, 2026. Use actual equipment and product instructions, project design and site requirements. This instructional example supplies no actual inspection results, signatures or work approval.