

Ground Asphalt Roofing Kettle Operation JHA

Worked instructional example

Work and worksite

A trained operator runs a fuel-gas-fired roofing-asphalt kettle at an accepted outdoor ground station and supplies an already planned roof-delivery system. The work covers setup, dry charging, controlled heating, attended transfer and shutdown; it excludes roof mopping. This fictional learning example describes planned controls; it records no actual inspection or work authorization.

- Partial hot-asphalt and material-supply coverage: the selected fuel-gas-fired ground kettle stage only, with no coal-tar pitch or kettle repair.
- The actual kettle manual, asphalt product data, fuel arrangements and emergency plan are available before startup.
- The station has controlled access, stable support and a planned fume-control arrangement away from occupied air intakes.

Questions before work

- Who confirms the actual product, temperature limits and kettle controls from the current manual and product data?
- Where can fumes, hot splashes and fuel reach other workers, building occupants or an ignition source?
- How will the operator stop supply and respond to a fire, hot-material leak or control failure without improvisation?

Task Hazard Control

1 Accept the kettle station and operating plan

Hazard: Poor location exposes people to fumes, hot discharge and fire or obstructs emergency access.

Control: Use the planned outdoor station with stable support and restricted access. Review the actual kettle and product instructions, fume controls, fuel arrangement and emergency roles before delivering asphalt.

Verification: Lead records station acceptance and availability of the product-specific operating and emergency information.

Reasoning: A ground location alone does not separate the hot process from occupants, traffic and air intakes.

2 Inspect the cold kettle and fuel system

Hazard: Damaged heating controls, fuel leaks or obstructed equipment can create uncontrolled heat or fire.

Control: While equipment is safely cold and isolated, inspect it using the actual manual. Check temperature indication, controls, lids, discharge and fuel condition; reject defects instead of bypassing safeguards.

Verification: Operator records the pre-use result and confirms defects are resolved before any startup action.

Reasoning: A kettle capable of heating asphalt may still lack reliable control of the process.

3 Prepare and charge dry approved asphalt

Hazard: Water or unsuitable feed can create violent hot-material splashes; lifting blocks strains workers.

Control: Verify the correct dry product and planned charging method. Keep packaging and wet materials out, control handling positions and use the specified splash protection; charge only as the actual manual permits.

Verification: Operator checks feed condition and the clear charging position before each planned addition.

Reasoning: Moisture and improvised charging can change a controlled heating task into an immediate splash exposure.

Complete the work and hand over

4 Start and attend the controlled heating process

Hazard: Excess temperature, flame or poor fume control exposes workers and can ignite the process.

Control: Follow the trained actual-model startup sequence and product limits. Attend the kettle, monitor its indicators and fume-control condition, and stop through its procedure if control is lost; never substitute guessed settings.

Verification: Operator records required readings and confirms the actual controls remain within the accepted criteria.

Reasoning: The temperature and fuel sequence must come from this equipment and asphalt, not a general JHA.

5 Supply the accepted roofdelivery system

Hazard: Hot discharge, leaks and confused receiving signals can burn workers or contaminate access.

Control: Use the accepted transfer arrangement with secured connections, clear routes and agreed stop signals. Keep people outside the splash path, observe for leakage and suspend supply when the receiving crew loses readiness.

Verification: Operator and receiver confirm readiness before transfer and check the connection area during supply.

Reasoning: A ready kettle does not mean the receiving system or roof crew can safely accept material.

6 Shut down and secure the station

Hazard: Residual heat and live fuel can injure the next worker or start a fire after attendance ends.

Control: Use the actual-model shutdown and cooling procedure. Secure fuel as specified, keep residual hot material isolated and identify remaining heat; do not refuel, clean or repair hot equipment through an improvised method.

Verification: Operator records shutdown status and the conditions that must be met before maintenance or removal.

Reasoning: Stopping the burner does not immediately remove the thermal and fuel hazards.

Pause and reassess

- Stop for wet feed, a fuel or asphalt leak, unreadable indication, uncontrolled temperature, ineffective fume control or lost receiving communication.
- Replan for a different product, indoor placement, coal-tar process or maintenance intervention.

Improve the controls

Needs improvement: Work carefully and wear PPE.

More useful: Verify the correct dry product and planned charging method. Keep packaging and wet materials out, control handling positions and use the specified splash protection; charge only as the actual manual permits.

Needs improvement: Check that everything is ready.

More useful: Use the planned outdoor station with stable support and restricted access. Review the actual kettle and product instructions, fume controls, fuel arrangement and emergency roles before delivering asphalt.

Decisions that change the analysis

Is the published hot-asphalt roofing example a duplicate?

No. That roof example starts with accepted material delivery and covers the roof application. This task addresses the ground kettle, fuel, charging, heating controls, supply interface and residual-heat shutdown.

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

- Qualify the operator on the actual kettle, asphalt product, indicators, charging and shutdown procedures.
- Brief both ends of the supply system on stop signals, burn response, fume controls and emergency roles.

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

References and adaptation

NIOSH Reducing worker exposure to asphalt fumes from roofing kettles
<https://www.cdc.gov/niosh/engcontrols/ecd/detail1.html>

NIOSH Asphalt fume exposures during hot-asphalt roofing
<https://www.cdc.gov/niosh/publications/numbered/2003-107.html>

OSHA 1926.150 Fire protection
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.150>

OSHA 1926.152 Flammable liquids
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.152>

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

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

References reviewed October 9, 2026. Use actual equipment and product instructions, project design and site requirements. This original draft supplies no fabricated inspection, signature or approval.