Activity Hazard Analysis (AHA) — Asbestos Abatement

Overall RAC: **M** · SAMPLE formatted to EM 385-1-1 (15 March 2024) and ENG Form 6206 (SEP 2024) conventions. Adapt every step, hazard and control to actual site conditions; requires competent-person preparation, SSHO review and Government acceptance before the definable feature of work begins (EM 385-1-1 2024, para 2-6). Contracts solicited before 15 March 2024 remain governed by the 2014 edition — verify which edition your contract cites.

JOB STEPS	HAZARDS	CONTROLS	RESIDUAL RAC
Mobilization, survey review, and regulatory notification	Unidentified or mischaracterized ACM disturbed because survey data is incomplete or not keyed to the work areas	• Obtain and review the asbestos survey required by EM 385-1-1 para 17-8.b, performed by trained and licensed inspectors, before pricing or sequencing any disturbance work. • Describe each activity that will disturb ACM in the written Asbestos Management Plan — OSHA class of work, crew size, procedures, and ACM components keyed to the project drawings (para 6-7.d(1)). • Treat any suspect material not covered by the survey as presumed ACM; stop work and sample before disturbance (29 CFR 1926.1101(k)). • Label all ACM as an asbestos hazard not to be disturbed without proper protection; where ACM is inaccessible to label, create and post a site map identifying hazard locations (para 6-8.f(1)(c)).	L
	Regulatory violation from missing NESHAP notification or uncoordinated site employers	• Submit the 40 CFR 61 Subpart M notification to the administering agency at least 10 working days before regulated renovation/demolition work begins. • Implement the Asbestos Management Plan method for notifying other employers at the work site of regulated areas and scheduled abatement (para 6-7.d(2)). • Verify the AHA with its identified RAC has been reviewed, accepted, and signed by the approval authority (para 2-6.c(1)) and the Asbestos Management Plan has been accepted before mobilizing abatement crews.	L
Regulated area setup: critical barriers, containment, and decontamination unit	Fiber release beyond the work area from incomplete containment or unsealed penetrations	• Establish the regulated area, containment type, and decontamination unit exactly as described in the accepted Asbestos Management Plan (para 6-7.d(3)); demarcate and sign the regulated area per 29 CFR 1926.1101(e). • Isolate and seal HVAC intakes, grilles, and duct penetrations serving the work area before disturbing any ACM; coordinate system shutdown and lockout with the facility. • Post environmental (perimeter) air monitoring to demonstrate the absence of fiber migration outside the regulated area (para 6-7.d(4)(c)).	L
	Electrical shock from temporary power, wet methods, and negative air machines in a wet enclosure	• Feed all containment power tools, negative air machines, and lighting through GFCI protection and inspect cords before each shift. • Route cords overhead and off wet floors; de-energize and lock out circuits within the containment that will be wetted or cut. • Use low-voltage or double-insulated lighting inside shower and wash-down areas.	L
	Falls from ladders and baker scaffolds while hanging poly on ceilings and critical barriers	• Select ladders and rolling scaffolds rated for the task; maintain three points of contact and do not stand on the top two ladder steps. • Keep floor poly taut and taped, and dry-mop slick surfaces before repositioning ladders. • Provide fall protection for any barrier work at 6 ft or more above lower levels per EM 385-1-1 Ch 21.	L
Pre-abatement verification: negative pressure, smoke test, and worker clearance	Containment failure not detected before disturbance work starts	• Verify negative pressure enclosures hold the design pressure differential (typically -0.02 in. w.g.) on a recording manometer and smoke-test barriers and airlocks before first disturbance. • Evaluate the ventilation (negative air) system to confirm it functions as designed (para 6-5.c) and inspect filtration units per the manufacturer's instructions. • Document the pre-abatement inspection in the daily log per the inspection frequency set in the Asbestos Management Plan.	L

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	Unqualified or medically unfit workers entering the regulated area	• Verify every entrant holds current asbestos training for their role and exposure potential per OSHA/EPA standards — typically EPA/AHERA worker and supervisor accreditation for Class I/II work (para 6-3.h(2)). • Confirm current medical surveillance and respirator medical clearance for each worker before donning (paras 6-7.d(9), 5-7.b(3)). • Confirm current fit tests for tight-fitting respirators and document them in the RPP records (para 5-7.b(4)). • Have every involved employee review and sign the AHA before starting work (para 2-6.d(2)).	L
ACM removal (Class I/II work) inside containment	Airborne asbestos fiber exposure above the 0.1 f/cc PEL during gross removal	• Keep ACM adequately wetted with amended water from spray equipment before, during, and after removal; do not use compressed air to remove ACM unless it is used with an enclosed capture ventilation system (29 CFR 1926.1101(g)(1)). • Run HEPA-filtered negative air continuously and use HEPA vacuums for pickup — the filters must trap at least 99.97% of 0.3 micrometer particles (para 6-2.k). • Conduct the initial exposure determination and continued personal air monitoring per the air monitoring plan (para 6-7.d(4)(a)-(b)). • Use respirators selected under the written site-specific RPP per 29 CFR 1910.134 (para 5-7.b), upgrading protection factor whenever monitoring or work class requires it. • Bag or wrap removed material while wet as work progresses; do not allow dried debris to accumulate (housekeeping per para 6-7.d(6)).	M
	Heat stress from impermeable coveralls and respirators inside a sealed enclosure	• Establish a work/rest schedule based on monitored heat stress conditions and adjust for the added burden of PPE per the Thermal Stress Management Plan (paras 6-8.m, 6-7.g). • Stage cool potable water and a shaded rest area immediately outside the decon unit; require hydration at each exit. • Schedule gross removal for cooler parts of the shift where feasible and rotate crews through high-exertion tasks. • Implement a buddy system and train workers to recognize heat illness signs in themselves and co-workers; empower any worker to call a break (para 6-8.m(1)).	M
	Slips, trips, and cuts on wet poly, hoses, and sharp lath or mechanical edges	• Maintain clear pathways to airlocks; coil hoses and cords against walls between uses. • Wet-mop and pick up debris continuously rather than allowing piles to build under foot. • Use cut-resistant gloves for scraping and demolition of jagged substrates; keep utility knives retracted when not cutting.	L
Waste bag-out, decontamination, and load-out	Contamination spread beyond the regulated area during bag-out and worker exit	• Double-bag or wrap waste in labeled 6-mil bags/poly, HEPA-vacuum and wet-wipe bag exteriors in the airlock before transfer out of containment (paras 6-7.d(6), 6-7.d(10)). • Require full decontamination sequence — HEPA vacuum of suits, suit drop, shower, clean change — for every exit through the decon unit (para 6-7.d(7)). • Clean, inspect, and maintain reusable PPE before reissue; inspect all PPE visually before each use and tag defective equipment out of service (para 5-5.b). • Restrict load-out routes and secure the waste accumulation area per the plan's security procedures (para 6-7.d(11)).	L
	Manual handling injuries from lifting saturated waste bags and drums	• Limit bag fill so wet waste remains a one-person lift or assign two-person lifts and carts for heavier containers. • Stage waste close to the airlock and use drum dollies or carts for transport to the lockable container. • Train crews in lifting technique and rotate bag-out duty during long shifts.	L

JOB STEPS	HAZARDS	CONTROLS	RESIDUAL RAC
Final cleaning, visual inspection, and clearance air monitoring	Residual contamination left in place and released to building occupants after teardown	• Perform sequenced final cleaning (HEPA vacuum and wet wipe of all surfaces) followed by a documented visual inspection by the abatement CP before clearance sampling. • Have clearance monitoring conducted by an independent IH or a QP per contract specifications (para 6-7.d(4)(d)); do not remove critical barriers until clearance criteria are met. • Keep negative air units running through final cleaning, settling, and clearance sampling. • Apply lock-down encapsulant to substrate surfaces per the specification before reoccupancy where required by UFGS 02 82 00.	L
Containment teardown and demobilization	Fiber release from contaminated poly and equipment during teardown	• Remove containment layers only after written clearance; mist, fold contaminated side inward, and bag all poly as asbestos waste. • HEPA-vacuum and wet-wipe negative air machines, tools, and cords before removal from the regulated area; change or seal filters per the manufacturer's instructions. • Maintain respiratory protection and decon procedures for teardown crews until the last critical barrier and airlock are removed.	L
	Falls during removal of overhead barriers and scaffold breakdown	• Reverse the erection sequence with the same ladder/scaffold controls used during setup; maintain three points of contact. • Keep teardown areas clear of loose poly and debris underfoot before working overhead.	L
Waste transport and disposal	Improper transport or disposal of regulated asbestos-containing waste	• Containerize, label, manifest, and dispose of waste at a landfill approved for asbestos per 40 CFR 61 Subpart M, following the plan's waste generation, containerization, transportation, and disposal procedures including recordkeeping (para 6-7.d(10)). • Assign a QP to oversee storage of the waste prior to transportation (para 6-4.b). • Line and enclose transport containers; keep waste adequately wet and secured against release in transit. • Retain waste shipment records and disposal receipts with the project files for the durations required by the NESHAP and the contract.	L

Equipment To Be Used

• HEPA-filtered negative air machines with recording manometer (filters rated 99.97% at 0.3 micrometers, para 6-2.k)

• HEPA vacuums

• Airless sprayers / garden sprayers with amended water for wet methods

• 6-mil polyethylene sheeting, spray adhesive, and tape for critical barriers and containment

• Three-stage decontamination unit (equipment room, shower, clean room) with heated water

• Respirators per the site RPP (half-mask APR minimum; PAPR or supplied air as work class and monitoring require)

• Disposable coveralls (with hood/booties), gloves, and eye protection

• Labeled 6-mil asbestos waste bags, drums, and a lockable waste container

• Personal and area air sampling pumps with calibration equipment (inspected per manufacturer's instructions, para 6-5.a)

• GFCI-protected temporary power, cords, and low-voltage containment lighting

• Ladders and rolling scaffolds for barrier installation

• Plumbed or self-contained emergency eyewash where injurious materials (e.g., encapsulants, amended-water surfactants) are used (provided per para 6-8.e; inspected per para 6-5.b)

Training Requirements

• Asbestos training tiered by exposure potential and job responsibilities per applicable OSHA/EPA standards — EPA/AHERA-accredited worker and contractor/supervisor courses with current refreshers for Class I/II work (EM 385-1-1 para 6-3.h(2))

• Respiratory protection training: hazards, selection, donning/doffing, user seal checks, limitations, and maintenance, plus annual fit testing and medical evaluation (paras 5-3.c, 5-7.b; 29 CFR 1910.134)

• Medical surveillance for asbestos-exposed workers and respirator users per the Asbestos Management Plan (para 6-7.d(9)) and 29 CFR 1926.1101(m)

• Hazard communication training on chemicals in use (amended water surfactants, encapsulants, mastics removers) with SDSs attached to the AHA (paras 6-3.b, 6-6)

• AHA review and signature by every involved employee before starting work, and after any update for changed conditions (para 2-6.d(2), 2-6.d(5))

• Thermal stress training for crews working in impermeable PPE: illnesses and injuries, signs and symptoms, prevention, and first aid (paras 6-3.c, 6-7.g)

Inspection Requirements

• Pre-abatement and daily containment inspections: smoke-test barriers/airlocks and verify negative pressure on the recording manometer at the frequency set in the Asbestos Management Plan

• Ventilation (negative air) systems evaluated to confirm they function as designed; at least annually for continued service (para 6-5.c)

• Air sampling and monitoring equipment inspected and calibrated per the manufacturer's instructions (para 6-5.a)

• Personal air monitoring per the air monitoring plan; environmental monitoring to demonstrate no fiber migration outside the regulated area; independent clearance monitoring before teardown (para 6-7.d(4))

• PPE visually inspected before each use; defective equipment tagged out of service and removed; reused PPE cleaned, inspected, and repaired before reissue (para 5-5.b)

• Plumbed eyewash units activated and documented weekly; self-contained units visually inspected weekly; annual ANSI/ISEA Z358.1 compliance inspection (para 6-5.b)

• GFCI devices and temporary power inspected per EM 385-1-1 Ch 11 requirements

• For abatement inside a demolition/renovation DFOW: CP inspections throughout demolition for weakened or deteriorated floors, walls, or loosened material at the frequency in the Demolition Plan (para 17-5)

Competent / Qualified Person Requirements

• Asbestos Competent Person (abatement supervisor) per 29 CFR 1926.1101(o) — EPA/AHERA contractor/supervisor accredited, on site for Class I/II work; designated in writing by name on the AHA (para 2-6.d(4)(g))

• Respiratory Protection Program Administrator (RPPA) qualified and trained per para 5-3.c(1) to administer the written site-specific RPP (para 5-7.b)

• Independent Industrial Hygienist or Qualified Person for clearance air monitoring per contract specifications (para 6-7.d(4)(d)); an IH performs the hazard evaluation and reviews monitoring results (para 6-4.a)

• Qualified Person (QP) overseeing storage of hazardous wastes prior to transportation (para 6-4.b)

• Trained and licensed asbestos inspectors for the pre-work survey when the abatement supports demolition/renovation (para 17-8.b)

References

• EM 385-1-1 (2024) 6-3.h(2) — Exposure Potential Training — Asbestos (training and certification tiered by exposure potential per OSHA/EPA standards)

• EM 385-1-1 (2024) 6-7.d — Asbestos Management Plan (written plan required when work may disturb ACM; 11 required elements)

- EM 385-1-1 (2024) 6-8.f(1) — Asbestos Hazard Control (evaluate all projects for ACM contact; label ACM or post site map; no friable ACM brought onto USACE projects)
- EM 385-1-1 (2024) 6-5 — Ch 6 Inspection Requirements (monitoring equipment, eyewash units, ventilation systems)
- EM 385-1-1 (2024) 6-6 — Ch 6 AHA Requirements (incorporate SDS information; attach SDS to AHA)
- EM 385-1-1 (2024) 5-7.b — Respiratory Protection Program (written site-specific RPP per 29 CFR 1910.134)
- EM 385-1-1 (2024) 5-3.c — Respiratory Protection Training/Qualification (RPPA, medical evaluation, fit testing)
- EM 385-1-1 (2024) 5-5.b — PPE Inspection Requirements (visual inspection before each use)
- EM 385-1-1 (2024) 17-8.b — Lead, Asbestos, and ORM Surveys before demolition/renovation (trained and licensed inspectors per Ch 6)
- EM 385-1-1 (2024) 17-8.d(3) — Abatement of lead, asbestos, and ORM completed before structural demolition begins
- EM 385-1-1 (2024) 2-6 — Contractor AHA requirements (hierarchy of controls, residual RAC, CP/QP designation by name)
- 29 CFR 1926.1101 — Asbestos (Construction, Subpart Z) — work classes, PEL 0.1 f/cc TWA, competent person, regulated areas
- 29 CFR 1910.134 — Respiratory Protection — medical evaluation, fit testing, written program
- 40 CFR 61 Subpart M — National Emission Standard for Asbestos (NESHAP) — notification, emission controls, waste disposal
- UFGS 02 82 00 — Asbestos Remediation — typical contract specification for federal abatement work