



RESPIRATORY PROTECTION

Hazard Evaluation, Selection, Fit, Use and Maintenance

POLICY STANDARD

Prevent airborne exposure through feasible engineering and work-practice controls. When respiratory protection is required, use only the assigned NIOSH-approved respirator under this written program, after medical clearance, training and required fit testing.

PHEIFER BROTHERS CONSTRUCTION CO., INC.

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USE OF THIS POLICY

This policy establishes minimum company requirements and is not all-inclusive. Substance-specific OSHA standards, exposure-control plans, equipment instructions, project conditions and owner requirements may require additional protection.

Primary Regulatory References

- 29 CFR 1926.103 - Respiratory protection in construction (incorporates 29 CFR 1910.134)
- 29 CFR 1910.134 - Respiratory protection, including mandatory Appendices A, B-1, B-2 and C
- 29 CFR 1910.134 Appendix D - Information for voluntary respirator users
- Substance-specific rules, including 1926.62 (lead), 1926.1101 (asbestos), 1926.1126 (hexavalent chromium) and 1926.1153 (silica)

1. Purpose, Scope and Responsibilities

Purpose and Scope

This program applies whenever Pheifer Brothers requires respirator use and to voluntary use permitted by the company. It covers bridge/highway hazards such as respirable crystalline silica, lead and coating dust, hexavalent chromium, welding fumes, abrasive blasting, asbestos, concrete/cement dust, mists, gases, vapors and oxygen-deficient or unknown atmospheres.

Program Administrator

- Management shall designate in writing a Respiratory Protection Program Administrator qualified by training or experience for the program's complexity. A job title may be used; a safety-director title is not required.
- The Administrator evaluates hazards, approves selections/change schedules, coordinates medical evaluations and fit tests, maintains records, evaluates effectiveness and updates the program.
- Only the Administrator or a specifically authorized competent person may approve respirator assignments or changes.

Management and Supervision

- Provide required respirators, evaluations, fit tests, training and maintenance at no cost.
- Implement feasible engineering/work-practice controls and project-specific exposure plans.
- Foremen verify authorization, clean-shaven sealing surfaces, inspections, correct cartridges, change dates and site conditions before use; stop work for deficiencies.

Employees

- Use only the assigned respirator as trained; inspect, don and seal-check it each time.
- Protect equipment from damage/contamination and report defects, symptoms, breakthrough or changed conditions immediately.
- Leave the hazard area immediately when protection may be inadequate. Employees may stop work without retaliation for an uncontrolled respiratory hazard.

NO UNAUTHORIZED USE

No employee may wear required respiratory protective equipment until medically cleared, trained, and—when using a tight-fitting facepiece—fit tested for the exact make, model, style and size.

2. Hazard Evaluation and Exposure Control

Control Airborne Hazards First

- Eliminate or substitute hazardous products/processes where feasible.
- Use enclosure, isolation, wet methods, local exhaust, dust collection, ventilation, restricted areas, remote methods and compliant housekeeping.
- Respirators supplement—not replace—feasible controls or required controls such as OSHA silica Table 1.

Documented Evaluation Before Work

- Identify each contaminant, chemical state/physical form, source, route of exposure and health effects using SDSs, coatings/hazardous-material surveys, task history and manufacturer data.
- Reasonably estimate exposure using representative personal sampling, objective data or a substance-specific method; evaluate routine work and foreseeable emergencies.
- Consider task duration, work rate, temperature/humidity, other PPE, facial characteristics, confined/enclosed conditions, oxygen, and potential skin/eye exposure.
- Reevaluate after process/material/control changes, complaints, incidents, visible emissions, altered coatings or work locations.

Unknown or Oxygen-Deficient Atmospheres

- If the hazard or exposure cannot be identified or reasonably estimated, treat the atmosphere as immediately dangerous to life or health (IDLH).
- Atmospheres below 19.5 percent oxygen are oxygen-deficient and generally IDLH; air-purifying respirators do not supply oxygen.
- Do not enter a confined space or emergency release based only on odor, appearance or a dust mask.

Representative Bridge/Highway Tasks

TASK	EVALUATION / CONTROL FOCUS
Sawing, drilling, grinding, jackhammering	Silica plan/Table 1; water or shroud/HEPA; task/duration respirator requirement.
Blasting, coating removal, torch cutting	Lead/Cr(VI)/coating survey; containment, ventilation, hygiene and substance-specific respirator rules.
Welding/cutting	Base metal/coating/consumable fumes; local exhaust; confined-space controls.
Demolition or unknown material	Pre-work asbestos/lead/hazardous-material assessment; stop for unexpected material.
Confined/enclosed area	Atmospheric testing, ventilation, permit-space program and rescue; IDLH rules when applicable.

3. Respirator Selection, APFs and MUCs

Selection Requirements

- Use a NIOSH-approved respirator in accordance with its approval, user instructions and limitations; do not mix unapproved components.
- Select for the contaminant, concentration, oxygen level, physical form, eye/skin irritation, work conditions and substance-specific minimum requirements.
- Provide enough models and sizes so each tight-fitting user can obtain an acceptable fit.
- Filtering facepieces and half-mask elastomeric air-purifying respirators generally have APF 10; full-facepiece APRs have APF 50 only with the required quantitative fit test and effective program.
- Follow OSHA Table 1 of 1910.134 for other APFs and manufacturer evidence required for certain hood/helmet PAPR or SAR ratings.

Required Protection and Maximum Use

- Required protection factor = airborne concentration divided by applicable occupational exposure limit. Select an APF at least this high.
- MUC is generally APF multiplied by the applicable PEL, STEL or ceiling, but never above the contaminant's IDLH level, cartridge/canister limit, manufacturer limit or a lower substance-specific limit.
- Do not use an APF/MUC calculation to justify an air-purifying respirator in an IDLH, unknown or oxygen-deficient atmosphere.

Filter and Facepiece Limits

- Particulate filters do not protect against gases/vapors. Gas/vapor cartridges do not protect against particles unless approved as combination elements.
- N-series filters are not resistant to oil; choose R- or P-series when oil aerosols are present as permitted by the approval/instructions.
- Choose a full facepiece or separate compatible eye/face protection when the contaminant irritates or can injure the eyes.
- Escape-only respirators are for escape—not entry or routine work.

**SELECTION IS
NOT BY COLOR
OR ODOR**

Cartridge color, odor threshold or employee preference alone does not establish protection. The Administrator documents the selected assembly and its limits.

4. Medical Evaluation

Before Fit Testing or Required Use

- A physician or other licensed health-care professional (PLHCP) evaluates the employee's ability to use the assigned respirator before fit testing or workplace use.
- Use OSHA's mandatory Appendix C questionnaire or an initial examination obtaining the same information. The process is confidential, understandable and conducted during normal working hours or at a convenient time/place.
- The company provides the PLHCP the respirator type/weight, frequency/duration, expected effort, other PPE, temperature/humidity, this program and the standard.
- The employee may discuss results with the PLHCP. The company receives only the written recommendation addressing ability, limitations and follow-up—not confidential medical answers.

Follow-Up and Reevaluation

- Provide examinations/tests the PLHCP determines are necessary after questionnaire responses or initial findings.
- Reevaluate when the employee reports related signs/symptoms; the PLHCP, supervisor or Administrator requests it; fit testing/program evaluation indicates need; or work conditions substantially increase physiological burden.
- An annual medical evaluation is not automatically required by 1910.134, but substance-specific surveillance schedules and PLHCP recommendations still apply.
- If a negative-pressure respirator creates increased medical risk, provide a PAPR when the PLHCP finds the employee can use it.

Employee Responsibilities

- Answer the confidential questionnaire accurately and promptly report breathing difficulty, chest pain, dizziness, faintness, claustrophobia, skin reaction or other concerns.
- Do not work in a respirator outside PLHCP restrictions or after a material health/work-condition change until reevaluated when required.

MEDICAL CLEARANCE COMES FIRST

Training or a successful fit test does not replace medical clearance. The PLHCP determines ability to wear the respirator; the Administrator determines appropriate hazard protection.

5. Fit Testing, Facial Seal and User Checks

Fit-Test Requirements

- Fit test every user of a tight-fitting negative- or positive-pressure facepiece before initial use, whenever make/model/style/size changes, and at least annually.
- Repeat when physical changes could affect fit, including significant weight change, dental work, facial scarring or surgery, or when the employee/PLHCP/Administrator reports unacceptable fit.
- Use only OSHA-accepted Appendix A protocols. The test subject selects from suitable models/sizes and completes the test exercises.
- QLFT may be used only for negative-pressure APRs used where an APF of 10 or less is required. QNFT is required when a tight-fitting respirator is used at an APF greater than 10, including a full-facepiece APR used at APF 50.
- For tight-fitting atmosphere-supplying or powered respirators, conduct fit testing in the negative-pressure mode as required by Appendix A.

Seal and Compatibility

- No facial hair may lie between the sealing surface and face or interfere with valve function. Employees must arrive clean-shaven wherever the assigned facepiece seals.
- Eyewear, hearing protection, hard-hat straps, hoods and other PPE may not disrupt the seal or respirator operation. Spectacle kits must be manufacturer-approved when needed.
- Contact lenses are not categorically prohibited; use depends on the hazard assessment and compatible eye/face protection.
- Before each use, properly don the respirator and complete the positive- and/or negative-pressure user seal check in Appendix B-1 or the equally effective manufacturer procedure. If the check fails, leave the hazard area, readjust and retry; if it still fails, do not use it—obtain another approved facepiece/size and fit testing as needed.
- A user seal check is required each donning but never substitutes for fit testing.

EXACT FACEPIECE MATTERS

A fit test qualifies only the same respirator make, model, style and size. A similar-looking facepiece is not interchangeable.

6. Routine Use and Worksite Controls

Before Entry

- Confirm assignment, medical/fit-test status, contaminant, concentration, APF/MUC, cartridge/filter, change time and atmosphere limitations.
- Inspect and don the complete approved assembly; seal-check tight-fitting facepieces.
- Verify controls/monitoring, regulated or restricted area, communication, breaks, decontamination and emergency actions.
- Do not use a respirator in an atmosphere beyond its approval, APF/MUC, cartridge or oxygen limitation.

During Use

- Maintain the facepiece seal; do not remove it in the exposure area or alter components.
- Schedule breaks and relief for heat, cold, physical effort, PPE burden and respirator resistance.
- Keep valves/inlets clear; protect hoses and equipment from vehicles, sharp edges, concrete, hot work, contaminants and crushing.
- For high-hazard tasks, comply with the applicable silica, lead, asbestos, hexavalent-chromium, blasting, confined-space or hot-work program.

Leave the Area Immediately

- Respirator, hose, blower or air supply fails; alarm activates; pressure/flow changes; facepiece leaks or seal is lost.
- Odor, taste or irritation is detected; breakthrough or cartridge exhaustion is suspected. Odor is a warning to exit, not a change-schedule method.
- Breathing becomes difficult; dizziness, nausea, confusion, chest pain, anxiety or another symptom occurs.
- Atmosphere, work, controls or concentration changes; visibility/communication is inadequate; unknown release occurs.

MOVE TO CLEAN AIR

Exit first. Only in clean air may the employee inspect, change elements, readjust or obtain assistance. Do not troubleshoot in the hazard area.

7. Filters, Cartridges and Change Schedules

Particulate Filters

- Use the assigned NIOSH filter class/efficiency. Replace when damaged, soiled, wet, contaminated, breathing resistance increases, an applicable standard requires it, or the documented schedule/instructions require.
- Do not clean disposable filtering facepieces or filters unless the manufacturer expressly permits the procedure.
- HEPA/P100 or other minimum filtration may be required by a substance-specific standard or task.

Gas and Vapor Cartridges

- Use an appropriate NIOSH-approved end-of-service-life indicator (ESLI), or a written cartridge/canister change schedule based on objective information/data that ensures replacement before service-life end.
- The Administrator documents the contaminant, product/assembly, exposure, humidity, temperature, work rate, schedule, data/calculator/manufacture basis, storage and any safety factor.
- Odor, taste and irritation are not acceptable primary change criteria. If detected, exit immediately and report the event.
- Mark installation/opening date and required replacement time. Change before the shift/task deadline; never extend because the cartridge looks clean.
- Store opened reusable cartridges as the schedule requires in sealed, clean containers away from contaminants; uncontrolled off-gassing can consume service life.

No Generic Schedule

A single company-wide 'daily' or 'monthly' replacement rule is not automatically protective for every vapor. Each gas/vapor assignment must have a documented task-specific schedule or suitable ESLI. Substance-specific rules may impose additional requirements.

CHANGE BEFORE BREAKTHROUGH

The schedule must prevent breakthrough; it is not a response after an employee smells or feels the contaminant.

8. IDLH, Emergencies and Supplied Air

IDLH and Unknown Atmospheres

- Entry requires a full-facepiece pressure-demand SCBA with at least 30-minute service life, or a combination full-facepiece pressure-demand SAR with auxiliary self-contained air supply, NIOSH-approved for the use.
- At least one properly trained/equipped employee remains outside; maintain communication; outside personnel are trained/equipped for effective emergency rescue and notify additional responders before entering for rescue.
- Retrieval/rescue, attendant and permit-space requirements also apply where applicable. No employee may improvise rescue entry.
- An unknown concentration or inability to reasonably estimate exposure is treated as IDLH.

Supplied-Air Systems

- Breathing air must meet at least Grade D requirements: oxygen 19.5-23.5 percent, hydrocarbon 5 mg/m³ or less, carbon monoxide 10 ppm or less, carbon dioxide 1,000 ppm or less, and no noticeable odor.
- Never use oxygen in an airline respirator; oxygen cylinders may not substitute for compressed breathing air.
- Cylinders must have a certificate of analysis meeting Grade D and moisture limits; compatible couplings prevent connection to nonrespirable gas systems.
- For compressors: prevent contaminated-air intake, control moisture, maintain filters/sorbents per instructions and tag with change date/signature. Oil-lubricated compressors require high-temperature and carbon-monoxide monitoring/alarm, or approved frequent CO monitoring when only a high-temperature alarm is used; non-oil-lubricated compressors require CO precautions.
- Ensure adequate pressure, volume and flow for all users; protect lines from traffic/damage and use breathing-air components only.

Emergency-Use Respirators

- Inspect monthly and before/after use; certify date, inspector, findings, action and serial/identity.
- Keep accessible, clearly marked and stored per manufacturer. Escape units match the anticipated atmosphere and remain escape-only.

9. Cleaning, Inspection, Storage and Repair

Cleaning and Disinfection

- Clean and disinfect assigned reusable respirators as often as needed to remain sanitary; shared units before each different user; emergency/fit-test/training units after each use.
- Use Appendix B-2 procedures or equally effective manufacturer-recommended methods that do not damage components.
- Wash/rinse/dry in a clean area; prevent cross-contamination from lead, silica, asbestos, chromium, coatings or chemicals.

Inspection

- Inspect before each use and during cleaning: facepiece, seal, head straps, valves, gaskets, cartridges/filters, housing, hoses, regulator, alarms, connections and elastomer condition.
- SCBA inspection includes air/gas cylinder charge, regulator and warning devices. Maintain cylinders per DOT and NIOSH/manufacture requirements.
- Remove defective equipment immediately and tag/quarantine it.

Storage and Repair

- Store clean and dry, protected from contamination, sunlight, heat, extreme cold, moisture, chemicals, deformation and physical damage; position facepiece/valves to prevent distortion.
- Store emergency units accessible in clearly marked compartments/containers.
- Only trained authorized persons make repairs using NIOSH-approved manufacturer parts. Only the manufacturer or appropriately trained technician may adjust/repair reducing or admission valves, regulators or alarms.
- Do not tape leaks, improvise parts, drill/paint facepieces or interchange components.

DEFECT = OUT OF SERVICE

If a respirator cannot pass inspection or a user seal check, it is not worn in the hazard area.

10. Voluntary Use

Company Authorization Required

- The Administrator first determines that voluntary use will not itself create a hazard and that conditions do not require respirator use.
- Employees may not bring or use personal respirators without approval. Voluntary use can add breathing resistance, heat burden, contamination or a false sense of protection.
- Every voluntary user receives the mandatory information in Appendix D of 1910.134.

Filtering Facepieces Only

- When the only voluntary respirator is a filtering facepiece (dust mask), a written respiratory program and medical evaluation are not required by 1910.134, but Appendix D, company approval, correct selection/use and hazard determination still apply.
- A dust mask may never be treated as voluntary where an OSHA standard, exposure assessment, Table 1 task or company rule requires respiratory protection.

Other Voluntary Respirators

- Voluntary elastomeric, PAPR, SAR or SCBA use requires the program elements necessary to ensure medical ability and safe cleaning, storage and maintenance.
- Fit testing is not required by 1910.134 for genuinely voluntary use, but a tight-fitting facepiece still must not be used in a required-use situation without the required fit test.
- The Administrator may prohibit voluntary use when the product, atmosphere, medical burden, facial hair, contamination or maintenance cannot be adequately controlled.

'VOLUNTARY' DEPENDS ON THE HAZARD

Employee preference does not make required protection voluntary. The documented exposure evaluation and applicable standard determine whether use is required.

11. Training, Evaluation, Records and Stop Work

Training and Retraining

- Before use and at least annually, train users on why needed; limitations; improper-fit/use consequences; emergencies; inspection, donning/removal and seal checks; maintenance/storage; medical signs/symptoms; and this program.
- Employees demonstrate understanding and hands-on ability. Provide information in a manner/language they understand.
- Retrain when workplace/respirator changes make prior training obsolete, performance shows inadequate understanding/skill, or another situation makes retraining necessary.
- Toolbox talks and quick checks reinforce but do not replace medical clearance, fit testing or required respiratory training.

Program Evaluation

- The Administrator evaluates worksites as necessary and at least annually under company practice; consults users about fit, selection, interference, comfort and effectiveness.
- Correct deficiencies promptly and update the written program for changed hazards, operations, equipment or requirements.
- Verify supervisors enforce clean-shaven sealing surfaces, cartridge schedules, inspections, exposure controls and stop-work rules.

Records and Document Control

- Maintain the written program and make it available to affected employees and OSHA upon request.
- Keep fit-test records until the next fit test: employee, type, make/model/style/size, date and pass/fail or fit factor/test record.
- Maintain the PLHCP's written medical determinations and access/retention in accordance with 1910.1020; do not place confidential questionnaire responses in ordinary safety files.
- Maintain hazard/exposure assessments, selections, change schedules, breathing-air certificates, compressor records, training, inspections and evaluations under the controlled record schedule.

Stop-Work Triggers

- No clearance, training, current fit test or approved assignment; facial hair/PPE breaks seal; failed seal check or defect.
- Unknown/changed atmosphere, inadequate control/monitoring, exceeded MUC, missing change schedule, alarm/breakthrough/symptoms, damaged air line or unavailable rescue.

12. Test Your Knowledge

Circle the best answer. Review missed questions with your foreman before respirator use.

1. What generally comes before a required respirator fit test? A. Medical evaluation and clearance B. Cartridge replacement C. Annual inspection	2. Which approval is required for respirators? A. DOT B. NIOSH C. ANSI only
3. When is QNFT required? A. Only for dust masks B. Never C. When a tight-fitting respirator is used at an APF greater than 10	4. What is required each time a tight-fitting respirator is donned? A. User seal check B. New medical exam C. New annual fit test
5. May odor be the primary cartridge change schedule? A. Yes B. No C. Only for lead	6. What atmosphere must be treated as IDLH? A. Any outdoor area B. Any dusty area C. Unknown concentration that cannot be reasonably estimated
7. May facial hair cross a tight-fitting facepiece seal? A. No B. Yes, if short C. Only during winter	8. What must a voluntary filtering-facepiece user receive? A. A crane card B. OSHA Appendix D information C. A quantitative fit test in every case
9. What should a user do after alarm, breakthrough or breathing difficulty? A. Finish the task B. Tighten cartridges in place C. Leave immediately for clean air	10. Who administers the written program? A. A qualified designated Program Administrator B. Any employee on shift C. The respirator vendor only

EMPLOYEE: _____

DATE: _____

ANSWER KEY: 1-A | 2-B | 3-C | 4-A | 5-B | 6-C | 7-A | 8-B | 9-C | 10-A