

Ergonomics For Asbestos Abatement



Musculoskeletal Risks in the Asbestos Abatement Industry

ABATEMENT WORK INVOLVES:

- Awkward postures, such as working overhead, excessive climbing, working in confined spaces.
- Repetitive motions including taping, scraping, and stapling.
- Use of force, such as carrying panels, waste bags, HVAC units, and demolition work.
- Tool use, such as staple guns, knives, screw guns, hammers, and miscellaneous scrapers.
- Heat and cold stress.
- Production pressures.
- Use of protective equipment.
- Slippery floors.

WORK AREA SET UP

When you set up a work area, you will:

- Apply floor and wall poly.
- Work above drop ceilings.
- Build decontamination units.
- Seal various items in poly.
- Remove non-stationary items.
- Build enclosures (around a boiler, for example).

Many of these tasks are difficult and could result in back or shoulder

problems or other musculoskeletal injuries. Suggestions to make the work easier include:

PREPARATION OF THE FLOOR:

- Use kneepads.
- Use a broom to spread the floor poly instead of doing it by hand.
- Teamwork: rotate jobs so one person is not doing the same task all day.
- Use A-frame carts to move rolls of poly.
- Use a pneumatic or electric staple gun to reduce the force of the repetitive stapling.
- Use glue guns with better nozzles and triggers to make it more comfortable to work.

PREPARATION OF THE WALLS:

- Organize electrical cables into bundles to minimize the taping process and the number of cuts made into the plastic.
- Move cables overhead.
- Learn cutting techniques from experienced workers that minimize force and number of cuts.

- Use furring strips or double-faced tape instead of duct tape to hold the wall poly in place.
- Use scaffolds instead of ladders to perform overhead work.
- Use wider staples to secure the poly more effectively.
- Use a larger crew.
- Use spray poly instead of sheets.

Reinforced poly is sometimes used for floors or walls to prevent tears. This can present challenges for cutting and sealing. Special tools may be needed to minimize the risk of injury.

ABATEMENT WORK

Once the area has been prepped, actual abatement will begin. Abatement is organized into several stages:

- Gross removal
- Fine cleaning
- Bagging the waste
- Waste removal
- Glove bag work

Each stage involves exposure to risks for musculoskeletal injuries; however, each exposure has a potential solution to reduce the risk.

GROSS REMOVAL/FINE CLEANING:

- The use of a hand-held scraper to remove asbestos from overhead is extremely stressful. Using a long-handled scraper could reduce stress.
- Knives are essential abatement tools. To make knives easier to use, use knives with deeper blades and better handles.
- Overhead work can be made easier by using moveable scaffolds, scaffolds of the proper height, and in the right position.
- Wet the asbestos properly to make it easier to remove.
- If possible, use back supports when working overhead.
- Use HEPA vacuums with better suction to make cleanup work easier.
- Increase the number of air changes per hour to reduce the cleanup work by minimizing the amount of fibers that settle on surfaces.

BAGGING/WASTE REMOVAL FILLING BAGS:

- Filling and removing the waste from the asbestos abatement site is difficult and strenuous because of the weight of the wet debris.
- Job rotation: switch between shoveling and sweeping the material.
- Use a tape holder for sealing bags.

- Use an empty barrel with the bottom cut out as a frame to hold the bags open, or use a large funnel to scrape debris directly into a lined barrel.
- Use smaller bags or limit bags to 35 pounds or less.
- Use an extra sheet of poly as a drop cloth.
- Use a bag tie that slides closed.
- Add a D-shaped handle to the shovel shaft to lessen the strain on your back while shoveling.

REMOVING WASTE:

- Clean and bag out frequently instead of letting waste accumulate.
- Use teamwork whenever possible.
- Use wagons, slides, pulleys, and hoists to move bags
- Use a conveyor to get the bags in or out of the truck, if possible.

GLOVE BAG REMOVAL: Using a glove bag during asbestos removal can be awkward.

- Use specialty glove bags (vertical glove bags, T-bags) for joints and vertical pipes.
- Use two people on one glove bag that consists of two sets of arms (one to wet and one to cut).
- Use a bone saw, rather than a knife, for cutting insulation off pipes.
- Use scaffolding instead of a ladder if working overhead.

OTHER ERGONOMIC ISSUES

- Assign Laborers the main responsibility of cleaning the floor and keeping them dry to prevent slippery floors. If possible, wear booties with anti-skid bottoms.
- If working indoors in cold temperatures, heat the make-up air or use double insulated suits. If outdoors, use heat packs. If working in a boiler room, shut down the boiler before working on it.
- Better job planning: Develop Job Safety Analyses (JSAs) for each task in abatement work, have quality toolbox meetings, and develop an “ergonomics process” in which workers can report potential ergonomic problems and develop solutions to be implemented.