

SUGGESTED GUIDELINES FOR THE MAINTENANCE OF ASBESTOS CONTAINING FLOOR COVERINGS

Prepared by
The Rhode Island Department of Health
In conjunction with
USEPA, Region I
And
Local School Maintenance Personnel
And endorsed by the
Consortium of North East States

INTRODUCTION

Although vinyl asbestos floor tiles (VAT)¹ are considered non-friable², the frictional forces exerted on these materials during routine floor-care maintenance operations can generate asbestos-containing particles. In fact, several problems have been experienced recently in school facilities with respect to the maintenance of VAT.

The principle types of floor covering maintenance performed routinely on resilient floor tiles include spray-buffing³ and dry burnishing⁴, and wet scrubbing⁵ and stripping⁶ followed by refinishing⁷.

There are several parameters which should be addressed during routine floor maintenance activities. The objective is to develop guidelines for the maintenance of asbestos containing floor coverings which, when properly implemented, will reduce the potential for the release of asbestos fibers into the air.

Stripping of Vinyl Asbestos Floor Coverings

1. Custodial and maintenance personnel who are responsible for the care and maintenance of asbestos containing floor coverings should be thoroughly trained⁸ to safely and properly operate the machines, pads, and floor care chemicals used at the facility.
2. Stripping of vinyl asbestos floor coverings should be done as infrequently as possible, e.g., once per year maximum and preferably when the building is unoccupied. Excessive stripping of floors using aggressive techniques will result in increased levels of asbestos fibers in the air.
3. When stripping a floor becomes necessary, be sure to follow appropriate work practices. Consult with floor tile and floor finish product manufacturers for a particular problem(s) concerning the maintenance of your floors.
4. Never perform dry stripping. Always strip floors while wet. Prior to machine operation apply an emulsion of chemical stripper in water to the floor with a mop to soften the wax or finish coat. After stripping and before application of a high solids floor finish⁹, the floor

should be thoroughly cleaned, while wet, preferably with a Wet-Vac HEPA¹⁰ filtration vacuum system. Alternative procedures can be used provided such procedures are as stringent or more stringent than these guidelines. The machine used to remove the wax or finish coat should be run at a low rate of speed (i.e., ranging between 175-300 rpm) during the stripping operation. There is a direct correlation between machine speeds and the release of asbestos fibers from asbestos containing floor coverings. The higher the machine's speed the greater the probability of asbestos fiber release.

5. When stripping floors becomes necessary, the machine used for stripping the finish should be equipped with the least abrasive pad as possible, a black pad being the most abrasive and the white pad the least abrasive. Consult with your floor tile and floor finish product manufacturer for recommendations on which pad to use on a particular floor covering. Incorporate the manufacturer's to use on a particular floor covering. Incorporate the manufacturer's recommendations into your floor maintenance work procedures.
6. Do not operate a floor machine with an abrasive pad on unwaxed or unfinished floor containing-asbestos materials.

Finishing of Vinyl Asbestos Floor Coverings

1. Prior to applying a finish coat to a vinyl asbestos floor covering, apply 2 to 3 coats of sealer. Continue to finish the floor with a high percentage solids finish.

It is an industry recommendation to apply several thin coats of a high percentage solids finish to obtain a good sealing of the floor's surface, thereby minimizing the release of asbestos fibers during finishing work.

2. When spray-buffing floors, always operate the floor machine at the lowest rates of speed possible and equip the floor machine with the least abrasive pad as possible. A recent USEPA study indicated that spray buffing with high-speed floor machines resulted in significantly higher airborne asbestos fiber concentrations than spray buffing with low speed machines.
3. When dry-burnishing floors, always operate the floor machine at the lowest rate of speed possible to accomplish the task (i.e., 1200-1750 rpms), and equip the floor machine with the least abrasive pad as possible.
4. After stripping a floor and applying a new coat of sealer and finish, use a wet mop for routine cleaning whenever possible. When dry mopping, a petroleum-based mop treatment is not recommended for use.
5. Custodial and maintenance personnel responsible for daily VAT maintenance should be limited to maintaining VAT floors totaling no more than 15,000-25,000 square feet per person/8-hour day, depending on conditions and other responsibilities of the custodial and maintenance personnel.

Additional Precautions to be Taken to Maintain Floor Coverings

1. Check to see if chair and desk glides are in good condition and replace where indicated. Worn glides can gouge the floor coverings and possibly cause asbestos fiber release.
2. During the winter months when sanding and/or salting of icy parking lots becomes necessary, it is an industry recommendation that a 16-24 ft. matting be used at the entrance way to the school building and inside the doorway where feasible. This would significantly eliminate the scuffing of floors by abrasive sanding materials brought into the building on the shoes of building occupants. Also more frequent wet mopping and dry mopping of floors should be performed during the winter months to minimize damage to the floors.
3. Where feasible, use mats at entrance-ways to cafeterias, gymnasiums, libraries, etc., to protect against possible scuffing of floor covering(s), etc.

DEFINITIONS

1. **VAT:** Vinyl Asbestos Tile.
2. **Non-Friable:** Any Asbestos containing material that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
3. **Spray Buffing or Burnishing:** The act of burnishing a floor finish while using a polishing or rejuvenating liquid. This liquid is sprayed on the buffer or burnisher a small area at a time. The floor machine is then used to polish the floor with this liquid. As a rule, polishes only polish while rejuvenators help fill in minute scratches while polishing. Some of these products contain cleaners to help remove soiling on lightly soiled floors. How often these procedures are performed depends on many factors, such as, floor finish, traffic, machinery used, etc.
4. **Dry Burnishing:** The act of burnishing (high speed polishing) without any polishers, rejuvenators or cleaners. Just the burnishing machine and the proper pad. This procedure hardens the finish and brings out the shine. Burnishing is performed using what is called a high speed burnisher or buffer. Simply put, this machine is a standard floor machine with an additional set of wheels for stability. These machines operate between 1,000 and 3,000 rpm. The faster the rpm, the faster and better the job can be performed.
5. **Wet Scrubbing:** A lightly abrasive (scrub) pad or brush is used on a 175-300 rpm floor machine to remove surface wear and dirt from the floor without removing all the floor finish. The floor is scrubbed with a neutral floor cleaner and water. This liquid is then removed with a mop or preferably with a wet vacuum. After rinsing, the floor is then re-coated with a compatible floor finish. The number of coats depends on the given situation and materials used.

6. **Floor Stripping:** When the floor finish has become heavily imbedded with soiling or discolored, it becomes necessary to totally remove (strip) the existing finish. This is accomplished by first applying a compatible floor finish remover or stripper. After the appropriate dwell time, the finish is liquified. The floors is then scrubbed using an abrasive pad or brush on a 175-300 rpm floor machine. The resulting liquid is then removed using a wet vacuum. These steps, in some cases, have to be repeated two or more times to assure the removal of all the existing finish. The floor is now rinsed as is appropriate with the products being used. The floor is now ready for finishing.
7. **Floor Finishing:** This process is simply the application of floor finish to various types of floor surfaces. With some finishes and/or on some types of floor surfaces, a sealer should be used prior to the application of a finish. Finish is applied using either an applicator or a mop. Applicators and mops have to be those specifically designed for this purpose, or linting or contamination can occur. The best method with most finishes is to apply several thin coats instead of one heavy coat. When applying finish, care must be taken to allow each coat sufficient time to properly cure and dry before applying the next coat.
8. **Training:** Instruction provided by a person(s) qualified or proficient in the art of floor maintenance. Such instruction shall consist of hands-on training and incorporate procedures recommended by the flooring industry for the care of asbestos-containing floor tile and/or covering.
9. **High Solids Floor Finish:** The floor finishes most often used today do not contain any natural waxes. Floor finish generally consists of a blend of polymers, and sometimes fillers, in a water base. The percentage of solids (polymers and fillers) to water is the solids percentage referred to when discussing floor finish. The water base keeps the solids suspended in liquid form to facilitate their application to the floor. After application, the liquid evaporates, leaving the solids coating the floor surface. Thus, the higher the solids percentage is, the more finish per coat is left on the floor. Quality of floor finishes should not necessarily be confused with this percentage. The quality of a floor finish is more determined by the type and mixture of polymers.

In some lower grade finishes, fillers are used to bring the percentage up, but are actually using a lower percentage of polymer solids. The mixture of polymers in a floor finish determines its drying time, durability, gloss, buffing ability, re-coat and blending ability, etc. This mixture also determines the procedures used to apply and maintain the finish and what kind of surfaces can be coated with any given finish. All these factors have to be taken into consideration when choosing a floor finish for any given floor surface. Generally, a floor finish containing 20% or more finish is considered a high solids floor finish. The high side of this percentage is around 27%. The low side is around 14%.

10. **Wet Vacuum with H.E.P.A. Filtration:** H.E.P.A. – High Efficiency Particulate Air filtration. This is generally accomplished using additional filtration within the vacuum itself. The filtration material is generally glass fiber in conjunction with paper filtration. These vacuums are designed to remove particles down to .3 microns with an efficiency of 99.97%. H.E.P.A. vacuums wet or dry are used when the material or liquid being picked up is of a hazardous nature. The wet vacuums are used to pick up liquids or dry materials. Dry vacuums are used to pick up dry material only.