

July 6, 2020

Dave LaPointe
SAU 93, Monadnock Regional School District
Facilities Project Manager
Building and Grounds
600 Old Homestead Highway
Swansey, NH 03446

Re: 3-Year AHERA Reinspection
RPF File No.: 209912

Dear Mr. LaPointe,

RPF Environmental, Inc. (RPF) conducted an asbestos reinspection for the Monadnock Regional School District on June 10, 2020 with EPA Asbestos Hazard Emergency Response Act (AHERA) requirement. The reinspection included a visual inspection of the areas known to contain asbestos-containing building materials (ACBM) and assumed ACBM, as stated in the AHERA inspection records provided to RPF for review.

In general, the ACBM inspected by RPF during this reinspection was observed to be in good to fair condition and the school should continue to manage the materials in accordance with the AHERA Management Plan and updated recommendations enclosed. It is important to note that RPF observed locations that have damaged ACBM present, for example in the Cutler Staff Room, which has damaged ACBM pipe insulation. The areas with damaged ACBM should be addressed as soon as feasible, and care must be used to prevent further disturbance and to avoid the creation of dust.

Buildings included in this reinspection included Monadnock Regional High School (MRHS), Mt. Caesar Elementary School, Wilcox, Cutler Elementary School, Troy Elementary School, George Emerson Elementary School, Sullivan Elementary School, Gilsum Elementary School, and the S.A.U. 93 Administration Building.

This reinspection report should be filed with the AHERA plans for each school building, as well as the central facilities office. Appendix A contains a listing of the ACBM reinspected during this project and the AHERA assessment and minimum recommended actions for each area of ACBM in the school. Appendix B includes management plan recommendations and updates to be used in conjunction with your original management plan for each building.

The Asbestos Program Manager (AHERA-designated person) for the school is required, pursuant to the AHERA Rule, to review this report and the appendices and to then develop a written plan to implement recommendations for management, abatement or additional testing work, as applicable.

If you have any questions or comments, or if you would like assistance with the recommendations provided herein, please do not hesitate to call me.

Sincerely,
RPF ENVIRONMENTAL, INC.



Kara Forsythe, SMS
AHERA Compliance Manager

Enclosures:

Appendix A: ACBM Inventory
Appendix B: Management Plan Updates
Appendix C: Reinspection Accreditation
Appendix D: Methodology and Limitations

209912 3 Year AHERA 061020 Rpt

APPENDIX A

CODE DESCRIPTIONS

(Index sheet for use with room by room listings in this appendix)

EPA Assessment Codes:

1. Damaged or significantly damaged thermal systems insulation asbestos containing material (ACM)
2. Damaged friable surfacing ACM
3. Significantly damaged friable surfacing ACM
4. Damaged or significantly damaged friable miscellaneous ACM
5. ACBM with the potential for damage
6. ACBM with the potential for significant damage
7. Any remaining ACBM or friable suspected ACBM
- NF. Material is nonfriable and assessments are not required by AHERA.

Response Summary Codes: (Summary of minimum recommendations only, please reference text of report and Appendix for additional recommendations.)

Code Description

1. **Continue to manage this ACBM under the buildings Management Plan, Operations and Maintenance (O&M) Program** and AHERA. Conduct spot maintenance repairs of any minor damage present (nonfriable ACBM) or that occurs in accordance with AHERA and the School O&M Program. Complete periodic cleaning with HEPA vacuums and wet wiping in all areas with friable ACBM on a 6 month basis, at a minimum.
2. **Conduct repair, surface cleaning, encapsulation or enclosure response actions** for this ACBM in accordance with AHERA. Use care to not create dust in the area and to prevent further disturbance. Continue to manage this ACBM under the building Management Plan, O&M Program and AHERA (See Summary Code 1). A licensed consultant design firm must prepare repair specifications (design) prior to obtaining pricing or bids for response actions by licensed asbestos contractors. Some small-scale maintenance work (<3 linear/square feet) can be completed by the school's maintenance staff if they qualify for the licensing exemption and they possess adequate training, current refresher training, and the necessary personal protective equipment and safety programs in place. It recommended that pricing for removal also be obtained as an option for consideration. Complete periodic cleaning with HEPA vacuums and wet wiping in all areas with friable ACBM on a 6 month basis at a minimum.
3. **Remove the ACBM and conduct surface decontamination** as recommended by accredited/licensed project designer in accordance with AHERA. Use care to not create dust in the area and to prevent further disturbance. Continue to manage any remaining ACBM under the building Management Plan, O&M Program and AHERA (See Summary Code 1). All assumed ACBM should be properly tested by a licensed inspection prior to abatement work or as soon as feasible, and the AHERA records updated accordingly. A licensed consultant design firm must prepare repair specifications (design) prior to obtaining pricing or bids for response actions by licensed asbestos contractors. All abatement activities must be conducted by properly accredited and licensed personnel/companies.
4. **Complete verification of AHERA Inspection documentation.** A Licensed inspector must assume materials are ACBM or properly test additional suspect ACBM. Exterior materials, except under certain circumstances, are not covered under AHERA but still must be inspected and handled as ACBM in accordance with other State, local, and federal regulations. Licensed inspector and management planner must update ACBM listings and Management Plans as needed. Obtain architectural statements for new construction/renovation areas in accordance with AHERA. Confirm that proper numbers of samples have been collected.
5. **Accessible ACBM Removed.** Removed material may be deleted from the ACBM listings. Abatement records should be reviewed to verify that all required records are on file at the school. RPF did not audit records for completeness or accuracy.
6. **Material could not be located** and may have been removed or enclosed, or it was not possible to confirm if the materials observed were in fact newer replacement materials. Verify abatement records and, if all records are obtained and complete, update the ACBM listings to reflect the abatement work. If an MNO listing is due to an inaccessible area or locked room, such areas should be inspected when feasible.

S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Wilcox Elementary School								
Basement Area near Boiler Room	12" Floor Tiles and masti	105 sq. ft	MISC	MNO	MNO	MNO	1	Material is covered over with carpet.
Room 3	12" Floor Tiles and masti	105 sq. ft	MISC	MNO	MNO	MNO	1	Material is covered over with carpet.
Front Entrance/landing	12" Floor Tiles	50 sq. ft	MISC	No	Good	NF	1,4	Materials appear newer and may be covering older floor tiles.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Frable	Condition	Assessment	Response	Notes
Monadnock Regional High School								
Room 209 previously listed as Room 23-Classroom	9" Floor Tile	792 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018
Room 208/209 previously listed as Tech Ed Office. Formerly listed as Room between 22 & 24	9" Floor Tile	140 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018
Room 204B and office	9" Floor Tile	768 sq. ft	MISC	No	Fair	NF	1	Floor tiles at entrance to room were observed to be cracking and worn and areas of missing floor tiles. R
Boy's Bath by Auditorium	Pipe Fitting Insulation	3 observed	TSI	Yes	Good	5	1	Material is located above the ceiling.
Room 202 previously listed as Room 12-Classroom	9" Floor Tile	792 sq. ft	MISC	MNO	MNO	MNO	1	Accessible materials were removed in 2010 by A-Best; however, floor tiles remain underneath the cabinets.
Room 100 Nurse's Office	9" Floor Tile	460 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount.
Room 101 previously listed as School Resource office	9" Floor Tile	400 sq. ft	MISC	MNO	MNO	MNO	1,6	Materials appear to be concrete underneath the carpet.
Principal's Office	9" Floor Tile	520 sq. ft	MISC	MNO	MNO	MNO	1	Area has been covered over with newer flooring. Removed by Catamount
Conference Room	9" Floor Tile	384 sq. ft	MISC	MNO	MNO	MNO	1	Area has been covered over with newer flooring. Removed by Catamount
Special Services Room 104 and 104B	9" Floor Tile	400 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018. Removed by Catamount
Room 702 previously listed as Rm. Between 30/31 & 32	12" Floor Tile	646 sq. ft	MISC	No	Good	NF	1	
Boy's Bathroom near room 600	Pipe Fittings inside Pipe Chase	5 listed	TSI	Yes	MNO	MNO	1	Enclosed casing no access to pipe chase. Removed by Mike W less than 35gft
Girl's bath near Rm 500	Pipe Fittings inside Pipe Chase	5 listed	TSI	Yes	MNO	MNO	1	Enclosed casing no access to pipe chase.

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Monadnock Regional High School								
Room 607A	9" Floor Tile	200 sq. ft	MISC	No	Good	NF	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM. <i>Removed by Catamount</i>
Room 510/511 previously listed as Room 78/79	Flooring Mastic (under 12" Floor tiles)	828 sq. ft.	MISC	MNO	MNO	MNO	1	
Room 512 previously listed as Room 77	Flooring Mastic (under 12" Floor tiles)	828 sq. ft	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM. <i>Removed by Catamount</i>
Room 514 previously listed as Room 76	Flooring Mastic (under 12" Floor tiles)	864 sq. ft	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM. <i>Removed by Catamount</i>
Storage Room between Rm. 51 & 53	9" Floor Tile	864 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2016.
Connector rooms between 22 & 23	9" Floor Tile	336 sq. ft	MISC	MNO	MNO	MNO	1,5	Accessible materials were removed in 2010 by A-Best, however floor tiles remain underneath the cabinets.
Note:	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Troy Elementary School								
Classroom 1 adjacent to kitchen	12" Floor Tile	883 sq. ft	MISC	No	Fair	NF	1	Some minor damaged/chipped and worn floor tiles were observed throughout.
Kitchen	Transite Panels	72 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with gypsum wallboard according to the school records.
Kitchen Pantry/Office	12" Floor tiles and mastic	130 sq. ft	MISC	No	Good	NF	1	
Hallway near gymnasium and rooms 1, 2, and 3	12" Floor tile and mastic	777 sq. ft	MISC	No	Good	NF	1	
Gymnasium	12" Floor tile and mastic	5,658 sq. ft	MISC	No	Fair	NF	1	Spot replacement tiles are present. <i>Plastic is Hot</i>
Dry Food Storage Room	Transite Ceiling Panels	65 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with gypsum wallboard.
Rooms 6, 7, 8, 9, & 10	9" Floor tiles and mastic	3,375 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer tiles.
Rooms 11,12,13,14 &15	9" Floor tiles and mastic	3,375 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer tiles.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
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S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2017

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Mount Caesar Elementary School								
Room D across from Room A Custodial Closet	Ceiling Plaster	150 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
Staff office/room	Ceiling Plaster	120 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
Boiler Room	Ceiling Plaster	500 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
North-West Pipe Trench (Room 4)	Pipe Insulation	1, 064 lf	TSI	Yes	Enclosed	MNO	1	Area has been blocked off and no access is allowed.
North-West Pipe Trench (Room 4)	Pipe Fittings	55 previously observed	TSI	Yes	Enclosed	MNO	1	Area has been blocked off and no access is allowed.
South Pipe Trench	Pipe Insulation	300 lf	TSI	Yes	MNO	MNO	1	Materials have been enclosed and sealed within the trench following the construction in the boiler room.
South Pipe Trench	Pipe Fittings	15 previously observed	TSI	Yes	MNO	MNO	1	
Room 4	Glue Daubs	500 sq. ft	MISC	MNO	MNO	MNO	1	Materials are enclosed under ceiling.
Throughout	Glue Daubs	-----	Misc.	MNO	MNO	MNO	1,6	RPF conducted testing in 2009 in the PUPS room and the glue daubs were removed however it is possible that additional materials are present in other locations of the school behind original chalkboards and bulletin boards.
Entrance to East Annex	Transite Ceiling Panels	20 sq. ft	MISC	MNO	MNO	MNO	6	Material was not observed, may be covered over with plywood. Further review is required.

S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2017

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
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S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
S.A.U. 93 Business Office (Wyman House)								
First Floor								
Payroll Office previously listed as accounts payable office	Pipe Insulation	8 lf.	TSI	Yes	MNO	MNO	5	Materials have been removed.
Work room and Hall	9" Floor Tiles	10 sq. ft	MISC	MNO	MNO	MNO	1	Materials have present underneath the addition walls.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.							
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S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Cutler Elementary School								
Computer Lab	12" Floor Tiles	90 sq. ft	MISC	No	Good	NF	1	
Staff room previously listed as Rm. 221	Pipe Insulation	50 sq. ft	TSI	Yes	Damaged	1	2	Materials were observed to have exposed ends and joints above ceiling. Repair. Conduct O&M cleaning within 15' of all surfaces with ACBM insulation.
Staff room previously listed as Rm. 221	Pipe Fitting Insulation	8 observed	TSI	Yes	Damaged	1	2	
Hall outside library previously listed as Hall-221	12" Tan Floor Tile	100 sq. ft	MISC	No	Good	NF	1	
Hall outside room #8 previously listed as Hall-212	12" White Floor Tile	100 sq. ft	MISC	No	Good	NF	1	
Hall between room #1 & 2 previously listed as Hall-201	12" White Floor Tile	475 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer flooring and plywood.
Classroom Room #1 previously listed as 203	12" Tan Floor Tile	910 sq. ft	MISC	MNO	MNO	MNO	1	
Classroom Room #2 previously listed as 202	12" Tan Floor Tile	900 sq. ft	MISC	MNO	MNO	MNO	1	
Custodian closet previously listed as Room 204	12" White Floor Tile	25 sq. ft	MISC	No	Fair	NF	1	Materials were observe to be cracking at the entrance and lifting.
Girls Bath	12" Grey Floor Tiles	170 sq. ft	MISC	No	Good	NF	1	
Teacher's room	12" Tan Floor Tile	250 sq. ft	MISC	MNO	MNO	MNO	1,6	Materials have been covered over with newer flooring per site representative.
Closet room #3 previously listed as Room 209	9" Floor Tiles	16 sq. ft	MISC	MNO	MNO	MNO	1	Materials are covered over with carpet.

S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location		ACBM		Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Cutler Elementary School										
Classroom #3 previously listed as Room 210	12" Tan Floor Tile	1,386 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.		
Stairwell outside classroom #5/6	12" White Floor Tile	120 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.		
Hall outside classroom 5/6 previous listed as Hall-214	12" White Floor Tile	225 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout		
Classroom #6 previously listed as Room 219	12" White Floor Tile	748 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.		
Classroom #5 previously listed as Room 218	12" White Floor Tile	934 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.		
Girl's Bath	12" Grey Floor Tiles	100 sq. ft	MISC	No	Good	NF	1			
Boy's Bath	12" Grey Floor Tiles	72 sq. ft	MISC	No	Good	NF	1			
Custodial	12" Grey Floor Tiles	20 sq. ft	MISC	No	Good	NF	1			
Basement Storage	12" Tan Floor Tile	1,059 sq. ft	MISC	No	Fair	NF	1	Normal wear throughout.		
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report.		
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.										
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APPENDIX B

AHERA Management Plan – 2020 Update Recommendations

The following comments and recommendations should be reviewed in conjunction with the findings and discussions contained in the text of the report, attachments, the school's 1989 initial AHERA Report and Management Plan, and the federal standard 40 CFR Part 763. In particular, the existing Operations and Maintenance program should be referenced for additional work methods, minimum requirements and procedures, and safety and health.

Documentation review during the reinspection consisted of only those specific documents which list ACBM and were provided by the school for RPF to review. A full review or audit of the AHERA Plans for each building (including abatement records), other record-keeping requirements, or AHERA implementation records was not completed as part of this service. Except as otherwise noted, the reinspection work only included ACBM's identified in the inspection report provided to RPF by the school. During the reinspection and initial inspections, abatement documentation and other record-keeping items were not completely reviewed or audited for accuracy and completeness. This type of review was beyond the scope of services for the project.

A full inspection (for confirmation of previous inspection results) was also not completed during this project. In the event that other readily accessible suspect materials were observed by the inspector during the course of the reinspection (materials that may have been missed during the initial inspection or may require confirmation testing), the inspector provided preliminary notation on the reinspection reports to make the school aware that additional inspection or review may be required. Based on the RPF preliminary review of the records provided to RPF, it is RPF's opinion that the AHERA Plans may not address all of the possible ACBM present. However, in accordance with AHERA reinspection requirements, the inspector did not conduct full initial inspection during the course of the reinspection work.

Asbestos Program Manager

The school must maintain a current true and correct statement, signed by the individual designated by the school (the Asbestos Program Manager) that certifies that the general, local education agency responsibilities, as stipulated by the AHERA regulation, have been met or will be met. It is important to update this as personnel changes occur and that a copy is maintained with the current Management Plan documentation. The Asbestos Program Manager must be sure to receive and maintain adequate training and to obtain and file all necessary recordkeeping requirements pursuant to AHERA and the Management Plan, including but not limited to: training, reinspections, surveillance, O&M activity, abatement design and final reports, annual notifications, and other related asbestos management information and documentation.

Resources

Below is an estimated cost for various training and requirements of the AHERA management plan with reasonable cost assumptions over the next three years:

ASHERA Management Plan – 2020 Update Recommendations

Task/Description	Estimated Costs
Annual 2-hour Awareness Training	\$785-\$950
O&M Initial Training - up to 4	\$1,600-\$1,900
O&M Refresher Training	\$750-\$950
6-month Periodic Surveillance (if outsourced and not performed by the trained in-house staff)	\$600-\$,850
3-year ASHERA Reinspection 2020	\$1,800-\$2,500
Additional Inspection, Lab Work, Updates	\$5,500-\$7,500

outsourced

In addition, it is anticipated that some of the repair and cleaning work (small-scale and of short duration) that is recommended will be completed by in-house O&M level trained facilities staff, in accordance with the school's existing O&M Program and ASHERA requirements. As such, the incremental increase in cost will likely be approximately \$1,500 for various materials and disposal.

3-Year Reinspection

The school must continue to have a reinspection completed by a licensed inspector and management planner at least once during every three-year period from the inception of the Management Plan.

6-Month Surveillance

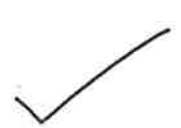
The school must continue to have periodic surveillance of all ACBM at least every 6-months, by either an adequately trained O&M level staff member or an outside licensed inspector.

Maintenance and Custodial Staff Training

The school shall ensure that all custodial and maintenance employees are properly trained in accordance with ASHERA and other applicable rules and regulations

2 Hour Awareness: All janitorial, custodial and maintenance staff shall have a minimum of 2-hour asbestos awareness training upon hiring and each year

O&M Level Training: Maintenance staff who may come in contact or who may disturb asbestos shall have a minimum of 16-hours of training upon hire and annual refresher training per State and EPA/OSHA requirements.



O&M Level Activity

The school must continue to ensure that all appropriate procedures are taken to protect building occupants for any O&M activity undertaken, including but not limited to:

- Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.

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- Post signs to prevent entry by unauthorized persons.
- Shut off or temporarily modify the air-handling system and restrict other sources of air movement.
- Use work practices or other controls, such as wet methods, protective clothing, HEPA-vacuums, mini-enclosures, and glove bags, as necessary to inhibit the spread of any released fibers.
- Clean all fixtures or other components in the immediate work area.
- Place the asbestos debris and other cleaning materials in a sealed, leak-tight container for proper disposal at a permitted site.

O&M activity is typically limited to small-scale, short duration work where the primary intent is building maintenance, repair, or renovation where the removal of ACBM is not the primary goal of the job; and, the amount of ACBM to be disturbed or repaired is less than 3 linear or 3 square feet. Larger projects or activity cannot be broken up or scheduled in groups to minimize the quantity of ACBM for the purposes of classifying work as small-scale, short duration O&M activity.

Worker Protection

The school must comply with either the OSHA Asbestos Construction Standard at 29 CFR 1926.1101 (or for public employees the Asbestos Worker Protection Rule at 40 CFR 763.120) including proper training, personal protective equipment, respiratory protection programs, medical surveillance, proper equipment and engineering controls, and other relevant work and safety requirements.

General O&M Cleaning

Cleaning should be completed through each entire room marked (or as otherwise indicated on the attached room-by-room inventory) as having damaged ACBM or friable ACBM present, as stated in AHERA, on a semi-annual basis.

- (i) HEPA-vacuum or steam-clean all carpets.
- (ii) HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.
- (iii) Dispose of all debris, filters, mop heads, and cloths in sealed, leak-tight containers

Fiber Release Episodes

In the event of the falling or dislodging of small amounts, less than 3 square or 3 linear feet of ACBM, ensure the following is completed by O&M level trained, qualified staff:

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- Immediately restrict access and thoroughly saturate the debris using wet methods.
- Clean the area using appropriate O&M level methods.
- Place the asbestos debris in a sealed, leak-tight container for proper disposal
- Repair the area of damaged ACM as applicable according to the AHERA rule.

In the event of the falling or dislodging of more than 3 square or 3 linear feet of ACM:

- Immediately restrict entry to the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.
- Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.
- Contact the school's outside consultant for assistance with testing and design of the appropriate response action. Use the design plan to obtain pricing from qualified abatement contractors to complete the response action.

Other Specific ACM Updates

Flooring and Mastic

The floor tile and mastic are present in most of the school buildings and is nonfriable ACM with the potential for damage. No immediate response action is required, as these materials can safely be managed in place. The materials were in good condition with some minor wear and tear observed. Care should be used not to disturb the underlying flooring (i.e. drilling or cutting holes for electrical/plumbing work). Regarding the flooring that is not covered with carpeting and/or newer 12" floor tile, care should be taken to avoid activities which will abrade the surface of the floor tile. Buffing, stripping, and other flooring maintenance activity should be completed in accordance with the most current guidelines for ACM flooring. High speed buffing or use of abrasive pads must not be conducted on the ACM floors. (References the Draft EPA Region I Guidance Document enclosed herein.)

The flooring ACM must be managed properly in accordance with AHERA and this management plan until they are completely removed.

Flooring mastic, along with any floor tile or linoleum that is, was, or may have been assumed to be ACM, should continue to be classified as ACM and properly tested prior to any flooring removal work (as applicable). It should be noted that a recent EPA advisory statement recommends that flooring which was previously tested as asbestos-free be confirmed using electron microscopy prior to any removal or other activities that may result in the disturbance of the flooring.

Pipe Fitting Insulation

The insulation was observed at the Mt. Caesar trench and the Cutler staff room. These materials were observed to be damaged with exposed ends, and are

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classified as damaged or significantly damaged ACBM, and repairs/removal is required by licensed and trained personnel. Special care should be used when accessing areas above ceilings or within walls to avoid accidental disturbance to the ACBM insulation or any possible debris and contaminated dust. It is also likely that additional material is present in locations not accessed for the reinspection work or in concealed locations.

Initial and periodic cleaning of the adjacent surfaces should be performed on an annual basis at a minimum, using wet-wiping and HEPA vacuuming.

Glue Daubs

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Fire Doors

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Transite Panels

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

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Assumed ACBM

Based on the RPF preliminary review of the records provided to RPF, it is RPF's opinion that the AHERA Plans may not address all of the possible ACBM present. For example, although not directly regulated by AHERA, various exterior suspect materials are present, as well as possible interior hidden ACBM. Based on the types and conditions of the listed assumed ACBM in this school building, it is recommended that all the assumed nonfriable ACBM be managed in-place accordance with the requirements of AHERA and the operations and maintenance program.

Assumed ACBM that does not require any immediate response actions includes the following materials:

- Sink basin undercoat
- Building seam caulk throughout the buildings
- Ceramic tile mastic and grout (2 types) in bathrooms
- Covebase, stair treads and adhesive throughout the building
- Gypsum board with joint compound
- Interior Door Caulk/Glaze
- Various exterior materials.

The gypsum board with joint compound throughout the building also requires initial testing and is assumed ACBM. Care should be used not to disturb the materials during the interim including notification and facilities staff, faculty and others that may disturb the gypsum or joint compound materials.

The non-friable assumed ACBM listed above are classified under AHERA as ACBM with the potential for damage. However, it should be noted that nonfriable ACBM and nonfriable assumed ACBM can be rendered friable when, for example, they are subjected to certain forces such as cutting, grinding, sawing, sanding, drilling, high-speed buffing, and other abrasive forces. This is particularly true during demolition or removal of nonfriable ACBM.

Under normal building conditions, the assumed nonfriable ACBM does not pose an immediate hazard. The materials are in good to fair condition in general, with some minor wear and tear. Care should be taken to ensure that the chalkboards are not broken or chipped. The exterior roofing, caulking, and glazing materials should not be subjected to grinding, cutting, abrasion, or other forces which would result in the production of dust.

The assumed nonfriable ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted, either directly or indirectly. If there exists a possibility that

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the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Testing of the interior, accessible assumed ACBM should be completed as soon as feasible by a licensed inspector and the management plan be updated accordingly by a licensed management planner.

Exterior Suspected ACBM

Exterior ACBM (in many cases) is not directly regulated by AHERA but are regulated by other State and federal regulations. Prior to any disturbance, renovation, or demolition, a licensed inspector must inspect for and sample any suspect exterior ACBM to be impacted or disturbed. If ACBM is found, a licensed project designer should prepare abatement plans as needed to facilitate work.

Warning Labels

The schools must ensure warning labels are and continue to be immediately adjacent to any friable and nonfriable ACBM, suspected ACBM, and assumed to be ACM located in routine maintenance areas (such as boiler rooms, mechanical space and maintenance areas) at each school building. The warning label must read (in print which is readily visible because of large size or bright color) as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

Asbestos Abatement Activity

Asbestos response actions, as defined by AHERA, must be detailed in a specification (project design) prepared by a licensed asbestos abatement project designer in accordance with AHERA and State regulations. Licensed personnel/contractors must carry out the response actions. Abatement activity itself is beyond the scope of the management plan/O&M program.

New Construction, Additions and Renovated Space

For any new buildings or renovated space, obtain architectural/engineering (A/E) statements for new construction/renovation areas in accordance with AHERA, certifying that no asbestos was specified or used. In lieu of A/E statements, all newly installed buildings materials must be tested pursuant to the AHERA inspection requirements.

Prior to any renovation or demolition activity, additional inspection and testing by a licensed inspector is required to satisfy current state, EPA and OSHA requirements that may exceed the inspection requirements under AHERA and the existing inspection documentation for the school buildings.

In the event that any renovation work or other construction, repairs or maintenance is to

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be completed, then the APM must review the work to determine that the ACBM will not be impacted, either directly or indirectly. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required. Only properly accredited and licensed personnel should complete the work.

Conflict of Interest

Pursuant to the EPA AHERA requirements and industry standards, abatement contractors should be engaged for inspection, testing, lab work, design or oversight, and clearance testing services. These services must be performed by qualified, certified firms completely independent of any abatement contractors used to complete work for the school.

**Note: Also reference the 2020 Reinspection Report for additional comments and recommendations.*

OSHA Asbestos Flooring Maintenance Information

OSHA ASBESTOS FLOORING MAINTENANCE SECTION

1926.1101(l)(3) Care of asbestos-containing flooring material.

1926.1101(l)(3)(i)

All vinyl and asphalt flooring material shall be maintained in accordance with this paragraph unless the building/facility owner demonstrates, pursuant to paragraph (g)(8)(i)(I) of this section that the flooring does not contain asbestos.

1926.1101(l)(3)(ii)

Sanding of flooring material is prohibited.

1926.1101(l)(3)(iii)

Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods.

1926.1101(l)(3)(iv)

Burnishing or dry buffing may be performed only on flooring which has sufficient finish so that the pad cannot contact the flooring material.

..1926.1101(l)(4)

1926.1101(l)(4)

Waste and debris and accompanying dust in an area containing accessible thermal system insulation or surfacing ACM/PACM or visibly deteriorated ACM:

1926.1101(l)(4)(i)

shall not be dusted or swept dry, or vacuumed without using a HEPA filter;

1926.1101(l)(4)(ii)

shall be promptly cleaned up and disposed of in leak tight containers.

OSHA Standards Interpretation and Compliance Letters

11/05/1999 - Questions regarding the cleaning of asbestos-containing floor tile.

[OSHA Standard Interpretation and Compliance Letters - Table of Contents](#)

Interpretation :Record Type •
(l)(3)1926.1101;(k)(7)1910.1001 :Standard Number •
Questions regarding the cleaning of asbestos-containing :Subject •
.floor tile
11/05/1999 :Information Date •

November 5, 1999

William A. Onderick, President
RFM Inc.
1008 Dogwood Lane
West Chester, Pennsylvania 19382

Dear Mr. Onderick:

Thank you for your July 27 letter regarding the cleaning of asbestos-containing floor tile. You wish clarification of the provisions in the Occupational Safety and Health Administration (OSHA) asbestos standards which regulate this activity. Your questions and our answers are provided below.

:Question 1

Are we correct that asbestos floor tile **cleaning** activities (normal maintenance such as stripping and buffing operations) are covered under both the Asbestos General Industry Standard (§1910.1001) and the Asbestos Construction Standard (§1926.1101)?

:Answer

control methods for only Class I or II asbestos work. The fact that the asbestos PELs are not exceeded when the floor stripping uses low abrasion pads at speeds greater than 300 revolutions per minute (rpm) is not a sufficient condition to warrant the receipt of a variance permitting such use. In order to receive a variance, the employer must have implemented some means of maintaining asbestos aerosol levels in the employees' breathing zones at levels equal to or less than the levels occurring at speeds lower than 300 rpm.

:Question 4

While the Construction Standard discusses submitting alternative work procedures, the General Industry Standard does not. How does one handle an alternative work procedure regarding the General Industry Standard?

:Answer

As we noted in our reply to your third question, the Construction Asbestos Standard makes allowances for alternative control methods for only Class I or II asbestos work. Therefore, whether the stripping or buffing of asbestos-containing flooring material is covered by the Construction Asbestos Standard or the General Industry Asbestos Standard, the employer who wishes to use alternative stripping or buffing procedures must seek a permanent variance.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. Please be aware that OSHA's enforcement guidance is subject to periodic review and clarification, amplification, or correction. Such guidance could also be affected by subsequent rulemaking. In the future, should you wish to verify that the guidance provided herein remains current, you may consult OSHA's website at <http://www.osha.gov>. If you have any further questions, please feel free to contact OSHA's Office of Health Compliance Assistance at (202) 693-2190.

Sincerely,

Richard E. Fairfax, Director
Directorate of Compliance Programs

[OSHA Standard Interpretation and Compliance Letters - Table of Contents](#)



U.S. Department of Labor

Occupational Safety and Health Administration

Protecting the Safety and Health of America's Workers



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[Text Only]

Standard Interpretations

02/09/2000 - Use of electric floor buffer with rotating blade attachment to remove asbestos-containing mastic.

Standard Interpretations - Table of Contents

• Standard Number: 1926.1101(g)(8); 1926.1101(b)

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

February 9, 2000

Ms. Paula K. Smith
Attorney for Utah OSHA
State of Utah
Labor Commission
Office of General Counsel
160 East 300 South, 3rd Floor
P.O. Box 146600
Salt Lake City, Utah 84114-6600

Dear Ms. Smith:

Thank you for your December 14, 1999 letter to the Occupational Safety and Health Administration's (OSHA's) Directorate of Compliance Programs (DCP). We are providing you with interpretations of the Construction Asbestos Standard, 29 CFR 1926.1101, based on the specific situation you describe pertaining to floor tile and associated mastic removal.

Scenario: You describe an employer in Utah who was using an electric floor buffer with a rotating blade attachment to remove asbestos-containing mastic without first erecting a negative pressure enclosure (NPE) in which to perform the work. The employer in this scenario had wetted the floor. Utah OSHA (UOSH) believes the floor buffer was a



Project Summary

Airborne Asbestos Concentrations During Buffing, Burnishing, and Stripping of Resilient Floor Tile

John R. Kominsky, Ronald W. Freyberg, and James M. Boiano

This study was conducted to evaluate airborne asbestos concentrations during low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile under pre-existing and prepared levels of floor care maintenance. Airborne asbestos concentrations were measured before and during each floor-care procedure to determine the magnitude of the increase in airborne asbestos levels during each procedure. Airborne total fiber concentrations were also measured for comparison with the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 0.1 f/cm³, 8-hr. time-weighted average (TWA). Low-speed spray-buffing and wet-stripping were evaluated on pre-existing floor conditions and three levels of prepared floor-care conditions (poor, medium, and good). Ultra high-speed burnishing and wet-stripping were evaluated on two levels of prepared floor-care conditions (poor and good). All of the computed 8-hr. TWA personal sample results were below the OSHA PEL. It is noted that the floor tile in this study was of low asbestos content and in good condition, hence it is conceivable that floor tile with higher percentages of asbestos could result in higher levels of airborne asbestos during routine floor care maintenance activities. TEM analysis showed higher exposures to fibers predominantly less than 5 μ m in length, whereas these shorter fibers were not counted by PCM.

This study shows that low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile can be sources of airborne asbestos in building air. The results suggest that multiple layers of sealant applied to the floor prior to the application of the floor finish can reduce the release of asbestos fibers during polish removal. The results of this study further support the U.S. EPA Recommended Interim Guidance for Maintenance of Asbestos-Containing Floor Coverings.

This Project Summary was developed by EPA's National Risk Management Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Three principal types of preventive maintenance are routinely performed on resilient floor tile: spray-buffing, ultra high-speed burnishing, and wet-stripping followed by refinishing. Spray-buffing is the restorative maintenance of a previously polished floor by use of a floor-polishing machine (operating at 175 to 1000 rpm) immediately after the surface has been mist-sprayed with a restorative product whereby the floor is buffed to dryness. Ultra high-speed burnishing is the buffing of a previously polished floor by using a floor polishing machine (operating at greater than 1500 rpm) without using a

restorative spray product. Wet-stripping is the removal of the finish from the floor using a chemical floor-polish stripper and a 175 rpm floor machine equipped with an appropriate strip pad. This current study was conducted to evaluate airborne asbestos concentrations during low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile under pre-existing and prepared levels of floor care maintenance.

Objectives

The objectives of the study were as follows:

- To determine the airborne asbestos concentrations during low-speed spray-buffing of asbestos-containing resilient floor tile in pre-existing floor condition.
- To determine airborne asbestos concentrations during polish removal from asbestos-containing resilient floor tile in pre-existing floor condition.
- To determine and compare the airborne asbestos concentrations during low-speed spray-buffing of asbestos-containing resilient floor tile in poor, medium, and good floor conditions.
- To determine and compare airborne asbestos concentrations during polish removal after low-speed spray-buffing of asbestos-containing resilient floor tile in medium and good conditions using a manual floor machine.
- To determine and compare the airborne asbestos concentrations during ultra high-speed burnishing of asbestos-containing resilient floor tile in poor and good floor conditions.
- To determine and compare the airborne asbestos concentrations during polish removal after ultra high-speed burnishing of asbestos-containing resilient floor tile in poor and good floor conditions using an automated floor machine.
- To determine whether personal breathing zone concentrations during low-speed spray-buffing of floors in pre-existing, poor, medium, and good conditions exceed the OSHA Permissible Exposure Limit (PEL) of 0.1 f/cm³, 8-hr. Time-Weighted Average (TWA).
- To determine whether personal breathing zone concentrations during ultra high-speed burnishing of floors in poor and good conditions exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.
- To determine whether personal breathing zone concentrations during polish removal after low-speed spray-

buffing of floors in pre-existing, poor, medium, and good condition exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.

- To determine whether personal breathing zone concentrations during polish removal after ultra high-speed burnishing of floors in poor and good conditions exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.

Site Description

This study was conducted in an unoccupied building located at the decommissioned Chanute Air Force Base (AFB) in Rantoul, IL. The study was conducted in a room which contained approximately 8600 ft² of open floor space tiled with 9-inch by 9-in. resilient floor tile containing approximately 5% chrysotile asbestos. Representatives of the Chemical Specialties Manufacturers Association (CSMA) and a floor products manufacturer visually inspected the physical condition of the floor. Their inspection focused on the evenness of the floor plane and the physical condition of the tile. They concluded that the floor was acceptable for the proposed study.

Configuration for Low-speed Spray-buffing and Wet-stripping Experiments

Approximately 6500 ft² of floor space was isolated as the experimental test area. A containment shell was constructed from 2-in. by 4-in. and 2-in. by 6-in. lumber to provide five equally-dimensioned test rooms, each with approximately 1300 ft² of floor space and 7-ft ceiling height. The containment shell was then surfaced with 6-mil polyethylene sheeting to provide airtight walls and ceilings for the five test rooms. The ceiling for each test room consisted of a single layer of polyethylene sheeting. The walls of each test room were surfaced with seven layers of polyethylene sheeting. Four high-efficiency particulate air (HEPA) filtration units were placed in the hallway outside of the five test rooms to ventilate the test rooms and reduce the airborne asbestos concentrations to background levels after each experiment.

Configuration for Ultra High-Speed Burnishing and Wet-Stripping Experiments

Upon completion of the low-speed spray-buffing and wet-stripping experiments, the test area was reconfigured to accommodate the ultra high-speed burnishing and wet-stripping experiments. The test area was reconfigured to provide a

single test room of approximately 6500 ft² of floor space and 7-ft. ceiling height. The ceiling for the test room consisted of a single layer of polyethylene sheeting. The walls were surfaced with eight layers of polyethylene sheeting. Three HEPA filtration units were placed in the hallway outside of the test room to ventilate the test room and reduce the airborne asbestos concentrations to background levels after each experiment. The units were operated during the preparation phase of each experiment but not during the actual burnishing or wet-stripping experiments. All three HEPA units discharged the air outdoors via 12-in. diameter flexible ducting. Fresh air into the test room was obtained directly from outdoors through windows.

Experimental Design

Low-Speed Spray-Buffing and Wet-Stripping

Pre-existing Conditions

Low-speed spray-buffing was first evaluated on the pre-existing floor-care condition. Pre-existing condition was the condition of the floor as it existed in the room prior to evaluating the prepared floor-care conditions. Pre-existing floor conditions consisted of an undetermined number of coats of a Carnauba-type, buffable polish on the floor tile. Low-speed spray-buffing of the pre-existing floor-care condition was evaluated five times, once in each of the five test rooms. Wet-stripping (including polish and sealant removal) was also evaluated on the pre-existing floor-care condition. Wet-stripping of the pre-existing floor-care condition was evaluated five times, once in each of the five test rooms.

Prepared Floor Care Conditions

Low-speed spray-buffing was evaluated on three levels of prepared floor-care conditions: 1) poor floor-care condition, 2) medium floor-care condition, and 3) good floor-care condition. Poor floor-care condition was defined as a floor with one coat of sealant and one coat of polish. Medium floor-care condition was defined as a floor with one coat of sealant and two coats of polish. Good floor-care condition was defined as a floor with two coats of sealant and three coats of polish. Floor-care conditions were defined in consultation with the CSMA and other representatives of floor-care products manufacturers. Each floor-care condition was evaluated five times, once in each of the five test rooms, to yield a total of 15 experiments.

Wet-stripping after low-speed spray-buffing was evaluated on two levels of floor-

ture had a statistically significant effect on airborne asbestos concentrations measured during the procedure ($p=0.0128$). Specifically, larger increases in airborne asbestos concentrations were observed during wet-stripping than during spray-buffing. The estimated airborne asbestos concentrations during spray-buffing and wet-stripping as a proportion of the respective baseline concentrations were calculated along with the corresponding 95% confidence interval. The average airborne asbestos concentration measured during low-speed spray-buffing was approximately 11 times greater than the average baseline concentration. The 95% confidence interval for this proportion is (2.6, 47). The lower 95% confidence limit is greater than 1, which indicates this is a statistically significant increase. The average airborne asbestos concentration measured during wet-stripping was approximately 186 times greater than baseline concentrations. The 95% confidence interval for this proportion is (44, 788). The lower 95% confidence limit is greater than 1, which indicates this is a statistically significant increase.

PCM Concentrations

Two personal breathing zone samples were collected during each experiment and analyzed by PCM. None of the individual PCM concentrations exceeded the OSHA

PEL of 0.1 f/cm^3 . The highest individual PCM concentration (0.023 f/cm^3) was measured during wet-stripping. The 8-hr TWA concentrations associated with the measured levels were calculated by assuming zero exposure beyond that which was measured during the experiment. The 8-hr TWA concentrations ranged from 0.001 to 0.003 f/cm^3 during low-speed spray-buffing and from 0.0003 to 0.003 f/cm^3 during wet-stripping of floors in pre-existing condition. None of the 8-hr TWA concentrations exceeded the OSHA PEL of 0.1 f/cm^3 .

Although the results of the personal breathing zone samples analyzed by PCM were all below the OSHA PEL, considerably higher exposures were shown by the personal breathing zone samples analyzed by TEM. Two primary reasons explain why the TEM concentrations were considerably higher than the PCM concentrations. First, PCM cannot detect fibers thinner than $0.25 \mu\text{m}$ in width. Second, the PCM method used in this study (i.e., NIOSH 7400) does not count fibers shorter than $5 \mu\text{m}$ in length. Over 99% of the asbestos structures measured during low-speed spray-buffing and wet-stripping of floors in pre-existing condition were shorter than $5 \mu\text{m}$ in length and would therefore not be counted by the PCM method.

Caution should be exercised in extrapolating the PCM measurements collected

during this study to conditions at other sites. These tile were of low asbestos content and in good condition, and no other asbestos exposure activity was assumed.

Prepared Floor Conditions

TEM Concentrations

Figure 1 illustrates the overall average (geometric mean) concentrations measured before and during low-speed spray-buffing and wet-stripping on floors in prepared floor conditions. Although the mean relative increase in airborne asbestos concentrations during low-speed spray-buffing tended to decrease as the floor care condition improved (i.e., poor condition resulted in a larger relative increase than medium, and medium condition showed a larger relative increase than good), the differences between the three levels of floor care were not statistically significant ($p=0.1149$). Overall, the average airborne asbestos concentration during low-speed spray-buffing was approximately 2.6 times higher than the average baseline concentration. This increase was statistically significant ($p=0.0017$). A 95% confidence interval for the mean airborne asbestos concentration during spray-buffing as a proportion of the baseline concentration showed that the overall mean airborne asbestos con-

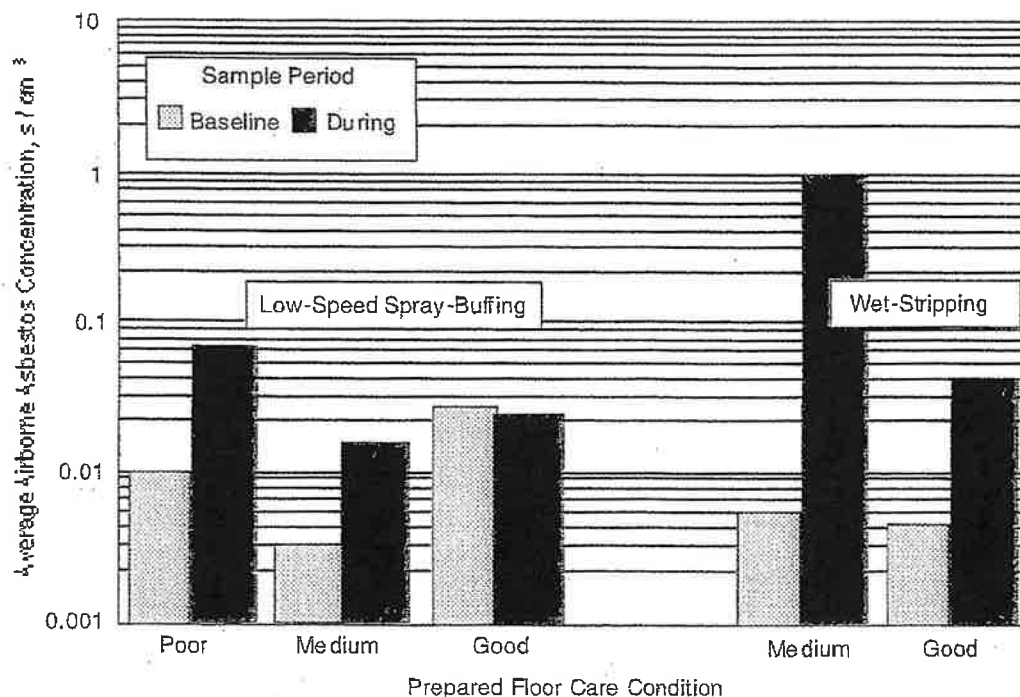


Figure 1. Average airborne asbestos concentrations during low-speed spraying of floors in prepared conditions.

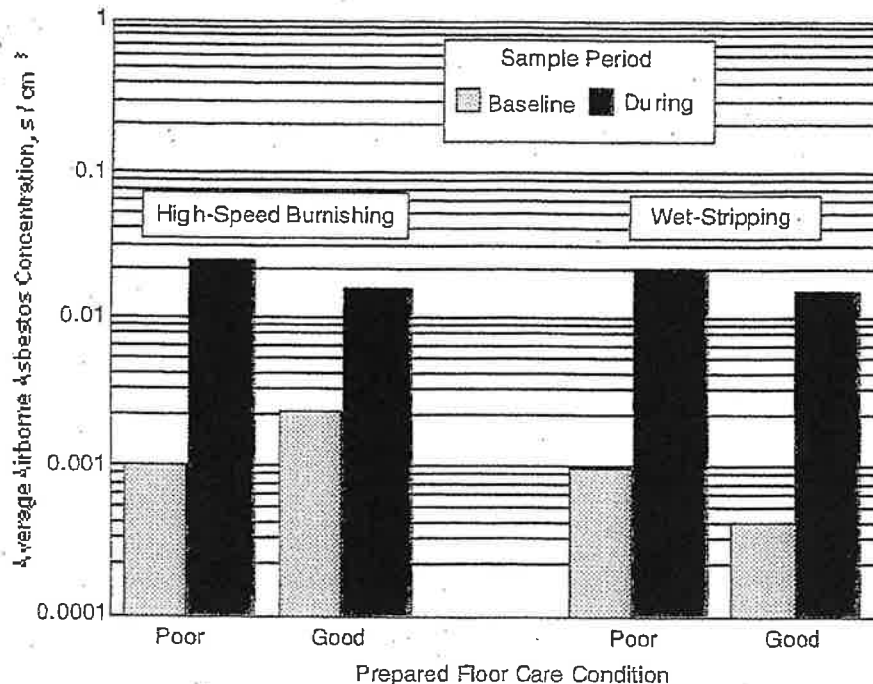


Figure 2. Average airborne asbestos concentrations measured before and during ultra high-speed burnishing and wet-stripping of floors in prepared conditions.

TWA concentrations measured during wet-stripping (after ultra high-speed burnishing) exceeded the OSHA PEL of 0.1 f/cm³ for total fibers, all of the 8-hr TWA concentrations measured during ultra high-speed burnishing exceeded the OSHA PEL. These exceedances, however, were due to the excess nonasbestos-containing particulate generated during the burnishing process and not to elevated airborne asbestos particles.

Conclusions

The following are the principal conclusions reached during this study:

- 1) Larger increases in airborne asbestos concentrations were observed during wet-stripping than during low-speed spray-buffing of floors in pre-existing condition. The average airborne asbestos concentration measured during low-speed spray-buffing was approximately 11 times greater than the average baseline concentration. The average airborne asbestos concentration measured during wet-stripping was approximately 186 times greater than the respective average baseline concentration. In both cases, the increases in airborne asbestos concentrations were statistically significant.
- 2) The average airborne asbestos concentration measured during low-speed spray-buffing of floors in the three levels of prepared floor-care conditions (poor, medium, and good) was approximately 2.6 times higher than the average baseline concentration. This increase was statistically significant.
- 3) The level of prepared floor care did not significantly affect the airborne asbestos concentrations measured during low-speed spray-buffing. Although the average increase in airborne asbestos concentrations tended to decrease as the level of floor care improved, the differences due to the three levels of floor care were not statistically significant.
- 4) Wet-stripping of floors in medium and good condition (after low-speed spray-buffing) resulted in statistically significant increases in airborne asbestos concentrations. The average airborne asbestos concentration measured during wet-stripping of floors in medium condition was approximately 108 times higher than the average baseline concentration, whereas the average airborne asbestos concentration measured during wet-stripping of floors in good condition was approximately 8.0 times higher than the average baseline concentration. The increase was statistically significant for both floor-care conditions.
- 5) A second layer of sealant appears to significantly decrease airborne asbestos levels during wet-stripping (after low-speed spray buffing). Larger increases in airborne asbestos concentrations were observed during wet-stripping of floors in medium condition than on floors in good condition. The average increase (relative to baseline measurements) in airborne asbestos concentration during wet-stripping of floors in medium condition was approximately 108 times greater than the average baseline concentration, whereas the average increase in airborne asbestos concentration during wet-stripping of floors in good condition was approximately 8.0 times greater than the average baseline concentration.

John R. Kominsky, Ronald W. Freyberg, and James M. Boiano are with
Environmental Quality Management, Inc., Cincinnati, OH 45240

Alva Edwards is the Technical Project Officer (see below) and

Thomas Sharp is the EPA Project Officer

The complete report, entitled "Airborne Asbestos Concentrations During
Buffing, Burnishing, and Stripping of Resilient Floor Tile," (Order No.
PB95-260212; Cost: \$27.00, subject to change) will be available only
from:

National Technical Information Service

5285 Port Royal Road

Springfield, VA 22161

Telephone: 703-487-4650

The EPA Technical Project Officer can be contacted at:

National Risk Management Research Laboratory

U.S. Environmental Protection Agency

Cincinnati, OH 45268

United States
Environmental Protection Agency
Technology Transfer and Support Division (CERL)
Cincinnati, OH 45268

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machine speeds and the release of asbestos particles from asbestos containing floor coverings. The higher the machine 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 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 percent solid finish.

It is an industry recommendation to apply several thin coats of a high percent solid finish to obtain a good sealing of the floor's surface, thereby minimizing the release of asbestos particles from the floor's surface.

2. If spray-buffing of floors is used, 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 concentrations than spray-buffing with low speed machines.

3. When dry-burnishing of floors is used, 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. During the winter months where sanding and/or salting of icy parking lot becomes necessary, it is an industry recommendation that a 16-24 ft. matting be used at the entrance way to the school building and where feasible inside the doorway. This would significantly eliminate the scuffing of floors by abrasive sanding materials brought into the building on the shoes of students. Also more frequent wet mopping and dry mopping of floors should be performed during the winter months to minimize damage to the floors.

6. 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.

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 buffing or burnishing a floor finish while using a polishing or rejuvenating liquid. This liquid is sprayed on the floor in front of 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 rejuvenaters 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, rejuvenaters 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 floor 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.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 25 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Recommended Interim Guidance for Maintenance of
Asbestos-Containing Floor Coverings

FROM: Robert C. McNally, Chief *RC McNally*
Assistance Programs Development Branch
Environmental Assistance Division (TS-799)

TO: Interested Parties

Attached are recommended interim guidelines for stripping wax or finish coat from asbestos-containing floors in your buildings. They were developed by the U.S. Environmental Protection Agency (EPA) in consultation with asbestos control professionals and several flooring material and floor care product manufacturers to reduce any possible exposure to asbestos fibers.

In November 1989, the local NBC affiliate in Washington, D.C. produced and aired a 3-part series on the potential danger of stripping asbestos-containing floor tiles. The NBC network news carried a brief portion of the series on November 29. The series concluded that stripping excess wax or finish coat from asbestos-containing floor tiles in schools may increase the asbestos exposure of school maintenance personnel and school children.

The series has precipitated numerous telephone calls to EPA Headquarters and to the ten EPA Regional offices. Perhaps many of you have also received calls from parents, staff, custodial workers, and others.

Since its airing, EPA's Environmental Assistance Division has tried to explain more clearly what the series did and did not demonstrate. First, there is no clear evidence that the "routine" stripping activities described in the series produced significantly elevated levels of asbestos fibers. In fact, the air levels generated during routine stripping were below those which require special procedures under federal regulation. Thus,

(continued on back)

APPENDIX C

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Asbestos Management & Control Program
ASBESTOS INSPECTOR

KARA L FORSYTHE



DOB: 10/19/78

Eff. Date: 11/02/19

Exp. Date: 11/01/20

R

AI100394

Craig A. Wright
Craig A. Wright, Director
Air Resources Division

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Asbestos Management & Control Program
ASBESTOS MANAGEMENT PLANNER

KARA L FORSYTHE



DOB: 10/19/78

Eff. Date: 11/02/19

Exp. Date: 11/01/20

R

AM100394

Craig A. Wright
Craig A. Wright, Director
Air Resources Division

RPF ENVIRONMENTAL, INC.

320 First NH Turnpike, Northwood, NH 03261 (603) 942-5432

Class Location: Northwood, NH

This is to certify that

Kara Forsythe

*has completed the requisite training and
has passed an examination for accreditation as:*

Asbestos Inspector - Annual Refresher

Pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

January 14, 2020
Examination Date

January 14, 2020
Course Date

January 14, 2021
Expiration Date

199631 - 07 - 10/19/78
Certificate Number/DOB

Dennis N. Francoeur Jr., Instructor

RPF ENVIRONMENTAL, INC.

320 First NH Turnpike, Northwood, NH 03261 (603) 942-5432
Class Located in Northwood, NH

This is to certify that

Kara Forsythe

*has completed the requisite training and
has passed an examination for accreditation as:*

Asbestos Management Planner - Annual Refresher

Pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

January 14, 2020
Examination Date

199632 - 01 - 10/19/78
Certificate Number/DOB

January 14, 2020
Course Date

January 14, 2021
Expiration Date

Dennis N. Francoeur Jr.
Dennis N. Francoeur Jr., Instructor

APPENDIX D

AHERA REINSPECTION METHODS & LIMITATIONS

(Page 1 of 2)

Reinspection Methods

The reinspection was completed in accordance with Part 763.85 (b) of 40 CFR Part 763, Subpart E - Asbestos Hazard Emergency Response Act (AHERA). Accessible ACBM's which were identified in the existing AHERA reports were visually reinspected in accordance with AHERA, to (a) observe whether the materials are friable, (b) observe the conditions of the ACBM and potential for disturbance, and (c) to assess the hazard potential of the ACBM. Documentation review consisted of only those specific documents which list ACBM which were provided by the school to RPF for review. A full review or audit of the AHERA Plans for the building (including abatement records), other record keeping requirements, and AHERA implementation records were not completed as part of this service. Please note that this reinspection report is intended to comply with the federal regulation and the report should not be considered or referenced as a detailed, full initial AHERA room-by-room inspection. Please also reference the initial AHERA Inspection Report prepared for the building by RPF and subsequent update records. This reinspection does not meet the requirements for full inspections prior to renovation or demolition activity.

A full inspection (for confirmation of previous inspection results) was also not completed during this project. In the event that other readily accessible suspect materials were observed by the inspector during the course of the reinspections (materials that may have been missed during the initial inspection or may require confirmation testing), the inspector provided preliminary notation on the reinspection reports to make the school aware that additional inspection or review may be required. However, in accordance with the AHERA reinspection requirements, the inspector did not conduct full initial inspection during the course of the reinspection work.

Limitations

- This reinspection only included the school buildings designated in the RPF listing. If other buildings are used as school buildings in accordance with 40 CFR Part 763 and need to be reinspected, please notify our office to make necessary arrangements. This reinspection and report does not meet the requirements set forth by US EPA, OSHA, and State agencies for conducting full asbestos inspections prior to renovation or demolition.
- The observations and conclusions presented in the report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the Scope of Services as discussed in the proposal and text of the report. The conclusions and recommendations are based on visual observations and testing (which was limited as indicated in the report), and were arrived at in accordance with generally accepted standards of industrial hygiene practice and asbestos professionals. In addition and as applicable, where sample analyses were conducted by an outside laboratory, RPF has relied upon the data provided and has not conducted an independent evaluation of the reliability of this data.
- Observations were made of the designated accessible areas of the site as indicated in the report. While it was the intent of RPF to conduct a survey to the degree indicated, it is important to note that not all suspect ACBM material at the site(s) were specifically assessed. Visibility was limited, as indicated, due to the presence of furnishings, equipment, solid walls, and solid or suspended ceilings throughout the facility. Suspect material may have been used and may be present in areas where detection and assessment is difficult until renovation and/or demolition proceeds.

- Although some assumptions may have been stated regarding the potential presence of inaccessible or hidden ACBM, a full inspection for all ACBM or a destructive inspection for possible inaccessible suspect ACBM was not conducted. This inspection did not include a hazard assessment survey or testing to determine current dust concentrations of asbestos in and around the building. The survey was limited to ACBM as indicated herein and a site assessment for other possible environmental health and safety hazards or subsurface pollution was not performed as part of the scope of this initial site inspection.
- Where access to portions of the surveyed area was unavailable or limited, RPF renders no opinion of the condition and assessment of these areas. The survey results only apply to areas specifically accessed by RPF during the site inspection.
- Interiors of mechanical equipment and other building or process equipment may also have ACBM gaskets or insulation present and were not included in this inspection. Further inspections would likely be required prior to renovation or demolition activity.
- Existing reports, drawings and analytical results provided by the Client to RPF (as applicable), were not verified and, as such, RPF has relied upon the data provided as indicated and has not conducted an independent evaluation of the reliability of this data.
- All hazard communication and notification requirements, as required by 40 CFR Part 763, U.S. OSHA regulation 29 CFR Part 1926, 29 CFR Part 1910, and other applicable rules and regulations, by and between the Client, general contractors, subcontractors, building occupants, employees, and other affected persons were the responsibility of the Client and Client's abatement contractor and are not part of the Scope of Services to be provided by RPF.
- Results presented in the report are limited to the materials and conditions present at the time that the site inspection was actually performed by RPF. The applicability of the observations and recommendations presented in this report to other portions of the site were not determined as part of this scope of work. Many accidents, injuries and exposures, and environmental conditions are a result of individual employee/employer actions and behaviors, which vary from day to day and with operations being conducted. Changes to the site that occur subsequent to the RPF inspection may result in conditions which differ from those present during the survey and presented in the findings of the report. For example, during construction changes it is possible that previously inaccessible suspect material may be encountered. As such, the contractors, employer's OSHA-competent persons, and other affected staff should be advised of the possible presence of inaccessible ACBM and suspect ACBM. In the event that newly identified suspect material is encountered, please contact RPF to arrange for proper inspection, assessment and testing as applicable.
- Typically, hazardous building materials such as asbestos, lead paint, PCB's, mercury, refrigerants, hydraulic fluids and other materials may be present in buildings. The survey performed by RPF only addresses the specific items as indicated in the report. In general, it is recommended that surveys for all accessible hazardous building material be performed. Notify RPF to arrange for additional survey work as needed.

July 6, 2020

Dave LaPointe
SAU 93, Monadnock Regional School District
Facilities Project Manager
Building and Grounds
600 Old Homestead Highway
Swansey, NH 03446

Re: 3-Year AHERA Reinspection
RPF File No.: 209912

Dear Mr. LaPointe,

RPF Environmental, Inc. (RPF) conducted an asbestos reinspection for the Monadnock Regional School District on June 10, 2020 with EPA Asbestos Hazard Emergency Response Act (AHERA) requirement. The reinspection included a visual inspection of the areas known to contain asbestos-containing building materials (ACBM) and assumed ACBM, as stated in the AHERA inspection records provided to RPF for review.

In general, the ACBM inspected by RPF during this reinspection was observed to be in good to fair condition and the school should continue to manage the materials in accordance with the AHERA Management Plan and updated recommendations enclosed. It is important to note that RPF observed locations that have damaged ACBM present, for example in the Cutler Staff Room, which has damaged ACBM pipe insulation. The areas with damaged ACBM should be addressed as soon as feasible, and care must be used to prevent further disturbance and to avoid the creation of dust.

Buildings included in this reinspection included Monadnock Regional High School (MRHS), Mt. Caesar Elementary School, Wilcox, Cutler Elementary School, Troy Elementary School, George Emerson Elementary School, Sullivan Elementary School, Gilsum Elementary School, and the S.A.U. 93 Administration Building.

This reinspection report should be filed with the AHERA plans for each school building, as well as the central facilities office. Appendix A contains a listing of the ACBM reinspected during this project and the AHERA assessment and minimum recommended actions for each area of ACBM in the school. Appendix B includes management plan recommendations and updates to be used in conjunction with your original management plan for each building.

The Asbestos Program Manager (AHERA-designated person) for the school is required, pursuant to the AHERA Rule, to review this report and the appendices and to then develop a written plan to implement recommendations for management, abatement or additional testing work, as applicable.

If you have any questions or comments, or if you would like assistance with the recommendations provided herein, please do not hesitate to call me.

Sincerely,
RPF ENVIRONMENTAL, INC.



Kara Forsythe, SMS
AHERA Compliance Manager

Enclosures:

Appendix A: ACBM Inventory
Appendix B: Management Plan Updates
Appendix C: Reinspection Accreditation
Appendix D: Methodology and Limitations

209912 3 Year AHERA 061020 Rpt

APPENDIX A

CODE DESCRIPTIONS

(Index sheet for use with room by room listings in this appendix)

EPA Assessment Codes:

1. Damaged or significantly damaged thermal systems insulation asbestos containing material (ACM)
2. Damaged friable surfacing ACM
3. Significantly damaged friable surfacing ACM
4. Damaged or significantly damaged friable miscellaneous ACM
5. ACBM with the potential for damage
6. ACBM with the potential for significant damage
7. Any remaining ACBM or friable suspected ACBM
- NF. Material is nonfriable and assessments are not required by AHERA.

Response Summary Codes: (Summary of minimum recommendations only, please reference text of report and Appendix for additional recommendations.)

Code	Description
------	-------------

- | | |
|----|---|
| 1. | Continue to manage this ACBM under the buildings Management Plan, Operations and Maintenance (O&M) Program and AHERA. Conduct spot maintenance repairs of any minor damage present (nonfriable ACBM) or that occurs in accordance with AHERA and the School O&M Program. Complete periodic cleaning with HEPA vacuums and wet wiping in all areas with friable ACBM on a 6 month basis, at a minimum. |
| 2. | Conduct repair, surface cleaning, encapsulation or enclosure response actions for this ACBM in accordance with AHERA. Use care to not create dust in the area and to prevent further disturbance. Continue to manage this ACBM under the building Management Plan, O&M Program and AHERA (See Summary Code 1). A licensed consultant design firm must prepare repair specifications (design) prior to obtaining pricing or bids for response actions by licensed asbestos contractors. Some small-scale maintenance work (<3 linear/square feet) can be completed by the school's maintenance staff if they qualify for the licensing exemption and they possess adequate training, current refresher training, and the necessary personal protective equipment and safety programs in place. It recommended that pricing for removal also be obtained as an option for consideration. Complete periodic cleaning with HEPA vacuums and wet wiping in all areas with friable ACBM on a 6 month basis at a minimum. |
| 3. | Remove the ACBM and conduct surface decontamination as recommended by accredited/licensed project designer in accordance with AHERA. Use care to not create dust in the area and to prevent further disturbance. Continue to manage any remaining ACBM under the building Management Plan, O&M Program and AHERA (See Summary Code 1). All assumed ACBM should be properly tested by a licensed inspection prior to abatement work or as soon as feasible, and the AHERA records updated accordingly. A licensed consultant design firm must prepare repair specifications (design) prior to obtaining pricing or bids for response actions by licensed asbestos contractors. All abatement activities must be conducted by properly accredited and licensed personnel/companies. |
| 4. | Complete verification of AHERA Inspection documentation. A Licensed inspector must assume materials are ACBM or properly test additional suspect ACBM. Exterior materials, except under certain circumstances, are not covered under AHERA but still must be inspected and handled as ACBM in accordance with other State, local, and federal regulations. Licensed inspector and management planner must update ACBM listings and Management Plans as needed. Obtain architectural statements for new construction/renovation areas in accordance with AHERA. Confirm that proper numbers of samples have been collected. |
| 5. | Accessible ACBM Removed. Removed material may be deleted from the ACBM listings. Abatement records should be reviewed to verify that all required records are on file at the school. RPF did not audit records for completeness or accuracy. |
| 6. | Material could not be located and may have been removed or enclosed, or it was not possible to confirm if the materials observed were in fact newer replacement materials. Verify abatement records and, if all records are obtained and complete, update the ACBM listings to reflect the abatement work. If an MNO listing is due to an inaccessible area or locked room, such areas should be inspected when feasible. |

S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Wilcox Elementary School								
Basement Area near Boiler Room	12" Floor Tiles and masti	105 sq. ft	MISC	MNO	MNO	MNO	1	Material is covered over with carpet.
Room 3	12" Floor Tiles and masti	105 sq. ft	MISC	MNO	MNO	MNO	1	Material is covered over with carpet.
Front Entrance/landing	12" Floor Tiles	50 sq. ft	MISC	No	Good	NF	1,4	Materials appear newer and may be covering older floor tiles.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Emerson Elementary School								
Ground Floor								
Boiler Room	Fire Door	1	MISC	No	Good	5	1,4	
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes. Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Gilsum Elementary School								
Book storage next to Grade 6, Room 1	12" Floor Tile	70 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing. 1/2 of the area is covered over with carpet.
Principal's Storage Room	12" Floor Tile	100 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Secretaries Bathroom	12" Floor Tile	30 sq. ft	MISC	No	MNO	MNO	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Hall outside Classroom 3	12" Floor Tile	32 sq. ft	MISC	No	Good	NF	1, 4	Materials have been covered over with carpet.
Music/art	12" Floor Tile	32 sq. ft	MISC	No	Good	NF	1	Floor tile are assumed to be ACBM, needs testing. Ny sink and bathroom
Music/art	Sink basin undercoat	2 sq. ft.	MISC	No	Good	NF	1, 4	Material is assumed to be ACBM, test prior to removal.
OT/PT Office prviously listed as Library Office	12" Floor Tile	120 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Classroom 3	12" Floor Tile	906 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Kindergarten Classroom #4	12" Floor Tile	856 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing. 1/4 of the area is covered over with carpet.
Stairwell landing to Basement	12" Floor Tile	18 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Throughout original section	Flooring Mastic	-----	MISC	No	MNO	MNO	1, 4	1999 test results on file indicate mastic contains 10% asbestos; however locations are unclear.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report.
See Notes on Last Page								

S.A.U. 93: Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Gilsun Elementary School								
Note:	New additions need to have an Architectural/Engineering Statement stating there was no asbestos containing building materials used in the newer addition. In lieu of architectural engineering statement, initial AHERA Reinspections are required.					See discussion in report.		
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 30, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Frable	Condition	Assessment	Response	Notes
Monadnock Regional High School								
Room 209 previously listed as Room 23-Classroom	9" Floor Tile	792 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018
Room 208/209 previously listed as Tech Ed Office. Formerly listed as Room between 22 & 24	9" Floor Tile	140 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018
Room 204B and office	9" Floor Tile	768 sq. ft	MISC	No	Fair	NF	1	Floor tiles at entrance to room were observed to be cracking and worn and areas of missing floor tiles.
Boy's Bath by Auditorium	Pipe Fitting Insulation	3 observed	TSI	Yes	Good	5	1	Material is located above the ceiling.
Room 202 previously listed as Room 12-Classroom	9" Floor Tile	792 sq. ft	MISC	MNO	MNO	MNO	1	Accessible materials were removed in 2010 by A-Best; however, floor tiles remain underneath the cabinets.
Room 100 Nurse's Office	9" Floor Tile	460 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount.
Room 101 previously listed as School Resource office	9" Floor Tile	400 sq. ft	MISC	MNO	MNO	MNO	1,6	Materials appear to be concrete underneath the carpet.
Principal's Office	9" Floor Tile	520 sq. ft	MISC	MNO	MNO	MNO	1	Area has been covered over with newer flooring.
Conference Room	9" Floor Tile	384 sq. ft	MISC	MNO	MNO	MNO	1	Area has been covered over with newer flooring.
Special Services Room 104 and 104B	9" Floor Tile	400 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018.
Room 702 previously listed as Rm. Between 30/31 & 32	12" Floor Tile	646 sq. ft	MISC	No	Good	NF	1	
Boy's Bathroom near room 600	Pipe Fittings inside Pipe Chase	5 listed	TSI	Yes	MNO	MNO	1	Enclosed casing no access to pipe chase.
Girl's bath near Rm 500	Pipe Fittings inside Pipe Chase	5 listed	TSI	Yes	MNO	MNO	1	Enclosed casing no access to pipe chase.

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Monadnock Regional High School								
Room 607A	9" Floor Tile	200 sq. ft	MISC	No	Good	NF	1	
Room 510/511 previously listed as Room 78/79	Flooring Mastic (under 12" Floor tiles)	828 sq. ft.	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM.
Room 512 previously listed as Room 77	Flooring Mastic (under 12" Floor tiles)	828 sq. ft	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM.
Room 514 previously listed as Room 76	Flooring Mastic (under 12" Floor tiles)	864 sq. ft	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM.
Storage Room between Rm. 51 & 53	9" Floor Tile	864 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2016.
Connector rooms between 22 & 23	9" Floor Tile	336 sq. ft	MISC	MNO	MNO	MNO	1,5	Accessible materials were removed in 2010 by A-Best, however floor tiles remain underneath the cabinets.
Note:	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Troy Elementary School								
Classroom 1 adjacent to kitchen	12" Floor Tile	883 sq. ft	MISC	No	Fair	NF	1	Some minor damaged/chipped and worn floor tiles were observed throughout.
Kitchen	Transite Panels	72 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with gypsum wallboard according to the school records.
Kitchen Pantry/Office	12" Floor tiles and mastic	130 sq. ft	MISC	No	Good	NF	1	
Hallway near gymnasium and rooms 1, 2, and 3	12" Floor tile and mastic	777 sq. ft	MISC	No	Good	NF	1	
Gymnasium	12" Floor tile and mastic	5,658 sq. ft	MISC	No	Fair	NF	1	Spot replacement tiles are present.
Dry Food Storage Room	Transite Ceiling Panels	65 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with gypsum wallboard.
Rooms 6, 7, 8, 9, & 10	9" Floor tiles and mastic	3,375 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer tiles.
Rooms 11, 12, 13, 14 & 15	9" Floor tiles and mastic	3,375 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer tiles.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
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S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2017

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Mount Caesar Elementary School								
Room D across from Room A Custodial Closet	Ceiling Plaster	150 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
Staff office/room	Ceiling Plaster	120 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
Boiler Room	Ceiling Plaster	500 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
North-West Pipe Trench (Room 4)	Pipe Insulation	1, 064 lf	TSI	Yes	Enclosed	MNO	1	Area has been blocked off and no access is allowed.
North-West Pipe Trench (Room 4)	Pipe Fittings	55 previously observed	TSI	Yes	Enclosed	MNO	1	Area has been blocked off and no access is allowed.
South Pipe Trench	Pipe Insulation	300 lf	TSI	Yes	MNO	MNO	1	Materials have been enclosed and sealed within the trench following the construction in the boiler room.
South Pipe Trench	Pipe Fittings	15 previously observed	TSI	Yes	MNO	MNO	1	
Room 4	Glue Daubs	500 sq. ft	MISC	MNO	MNO	MNO	1	Materials are enclosed under ceiling.
Throughout	Glue Daubs	*****	Misc.	MNO	MNO	MNO	1,6	RPF conducted testing in 2009 in the PUPS room and the glue daubs were removed however it is possible that additional materials are present in other locations of the school behind original chalkboards and bulletin boards.
Entrance to East Annex	Transite Ceiling Panels	20 sq. ft	MISC	MNO	MNO	MNO	6	Material was not observed, may be covered over with plywood. Further review is required.

S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2017

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

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Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
S.A.U. 93 Business Office (Wymen House)								
First Floor								
Payroll Office previously listed as accounts payable office	Pipe Insulation	8 lf.	TSI	Yes	MNO	MNO	5	Materials have been removed.
Work room and Hall	9" Floor Tiles	10 sq. ft	MISC	MNO	MNO	MNO	1	Materials have present underneath the addition walls.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
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Location	ACBM	Approximate Quantity	Category	Frable	Condition	Assessment	Response	Notes
Cutler Elementary School								
Computer Lab	12" Floor Tiles	90 sq. ft	MISC	No	Good	NF	1	
Staff room previously listed as Rm. 221	Pipe Insulation	50 sq. ft	TSI	Yes	Damaged	1	2	Materials were observed to have exposed ends and joints above ceiling. Repair. Conduct O&M cleaning within 15' of all surfaces with ACBM insulation.
Staff room previously listed as Rm. 221	Pipe Fitting Insulation	8 observed	TSI	Yes	Damaged	1	2	
Hall outside library previously listed as Hall-221	12" Tan Floor Tile	100 sq. ft	MISC	No	Good	NF	1	
Hall outside room #8 previously listed as Hall-212	12" White Floor Tile	100 sq. ft	MISC	No	Good	NF	1	
Hall between room #1 & 2 previously listed as Hall-201	12" White Floor Tile	475 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer flooring and plywood.
Classroom Room #1 previously listed as 203	12" Tan Floor Tile	910 sq. ft	MISC	MNO	MNO	MNO	1	
Classroom Room #2 previously listed as 202	12" Tan Floor Tile	900 sq. ft	MISC	MNO	MNO	MNO	1	
Custodian closet previously listed as Room 204	12" White Floor Tile	25 sq. ft	MISC	No	Fair	NF	1	Materials were observe to be cracking at the entrance and lifting.
Girls Bath	12" Grey Floor Tiles	170 sq. ft	MISC	No	Good	NF	1	
Teacher's room	12" Tan Floor Tile	250 sq. ft	MISC	MNO	MNO	MNO	1,6	Materials have been covered over with newer flooring per site representative.
Closet room #3 previously listed as Room 209	9" Floor Tiles	16 sq. ft	MISC	MNO	MNO	MNO	1	Materials are covered over with carpet.

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Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Cutler Elementary School								
Classroom #3 previously listed as Room 210	12" Tan Floor Tile	1,386 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Stairwell outside classroom #5/6	12" White Floor Tile	120 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Hall outside classroom 5/6 previously listed as Hall-214	12" White Floor Tile	225 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout
Classroom #6 previously listed as Room 219	12" White Floor Tile	748 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Classroom #5 previously listed as Room 218	12" White Floor Tile	934 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Girl's Bath	12" Grey Floor Tiles	100 sq. ft	MISC	No	Good	NF	1	
Boy's Bath	12" Grey Floor Tiles	72 sq. ft	MISC	No	Good	NF	1	
Custodial	12" Grey Floor Tiles	20 sq. ft	MISC	No	Good	NF	1	
Basement Storage	12" Tan Floor Tile	1, 059 sq. ft	MISC	No	Fair	NF	1	Normal wear throughout.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
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APPENDIX B

AHERA Management Plan – 2020 Update Recommendations

The following comments and recommendations should be reviewed in conjunction with the findings and discussions contained in the text of the report, attachments, the school's 1989 initial AHERA Report and Management Plan, and the federal standard 40 CFR Part 763. In particular, the existing Operations and Maintenance program should be referenced for additional work methods, minimum requirements and procedures, and safety and health.

Documentation review during the reinspection consisted of only those specific documents which list ACBM and were provided by the school for RPF to review. A full review or audit of the AHERA Plans for each building (including abatement records), other record-keeping requirements, or AHERA implementation records was not completed as part of this service. Except as otherwise noted, the reinspection work only included ACBM's identified in the inspection report provided to RPF by the school. During the reinspection and initial inspections, abatement documentation and other record-keeping items were not completely reviewed or audited for accuracy and completeness. This type of review was beyond the scope of services for the project.

A full inspection (for confirmation of previous inspection results) was also not completed during this project. In the event that other readily accessible suspect materials were observed by the inspector during the course of the reinspection (materials that may have been missed during the initial inspection or may require confirmation testing), the inspector provided preliminary notation on the reinspection reports to make the school aware that additional inspection or review may be required. Based on the RPF preliminary review of the records provided to RPF, it is RPF's opinion that the AHERA Plans may not address all of the possible ACBM present. However, in accordance with AHERA reinspection requirements, the inspector did not conduct full initial inspection during the course of the reinspection work.

Asbestos Program Manager

The school must maintain a current true and correct statement, signed by the individual designated by the school (the Asbestos Program Manager) that certifies that the general, local education agency responsibilities, as stipulated by the AHERA regulation, have been met or will be met. It is important to update this as personnel changes occur and that a copy is maintained with the current Management Plan documentation. The Asbestos Program Manager must be sure to receive and maintain adequate training and to obtain and file all necessary recordkeeping requirements pursuant to AHERA and the Management Plan, including but not limited to: training, reinspections, surveillance, O&M activity, abatement design and final reports, annual notifications, and other related asbestos management information and documentation.

Resources

Below is an estimated cost for various training and requirements of the AHERA management plan with reasonable cost assumptions over the next three years:

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Task/Description	Estimated Costs
Annual 2-hour Awareness Training	\$785-\$950
O&M Initial Training - up to 4	\$1,600-\$1,900
O&M Refresher Training	\$750-\$950
6-month Periodic Surveillance (if outsourced and not performed by the trained in-house staff)	\$600-\$,850
3-year AHERA Reinspection 2020	\$1,800-\$2,500
Additional Inspection, Lab Work, Updates	\$5,500-\$7,500

In addition, it is anticipated that some of the repair and cleaning work (small-scale and of short duration) that is recommended will be completed by in-house O&M level trained facilities staff, in accordance with the school's existing O&M Program and AHERA requirements. As such, the incremental increase in cost will likely be approximately \$1,500 for various materials and disposal.

3-Year Reinspection

The school must continue to have a reinspection completed by a licensed inspector and management planner at least once during every three-year period from the inception of the Management Plan.

6-Month Surveillance

The school must continue to have periodic surveillance of all ACBM at least every 6-months, by either an adequately trained O&M level staff member or an outside licensed inspector.

Maintenance and Custodial Staff Training

The school shall ensure that all custodial and maintenance employees are properly trained in accordance with AHERA and other applicable rules and regulations

2 Hour Awareness: All janitorial, custodial and maintenance staff shall have a minimum of 2-hour asbestos awareness training upon hiring and each year

O&M Level Training: Maintenance staff who may come in contact or who may disturb asbestos shall have a minimum of 16-hours of training upon hire and annual refresher training per State and EPA/OSHA requirements.

O&M Level Activity

The school must continue to ensure that all appropriate procedures are taken to protect building occupants for any O&M activity undertaken, including but not limited to:

- Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.

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- Post signs to prevent entry by unauthorized persons.
- Shut off or temporarily modify the air-handling system and restrict other sources of air movement.
- Use work practices or other controls, such as wet methods, protective clothing, HEPA-vacuums, mini-enclosures, and glove bags, as necessary to inhibit the spread of any released fibers.
- Clean all fixtures or other components in the immediate work area.
- Place the asbestos debris and other cleaning materials in a sealed, leak-tight container for proper disposal at a permitted site.

O&M activity is typically limited to small-scale, short duration work where the primary intent is building maintenance, repair, or renovation where the removal of ACBM is not the primary goal of the job; and, the amount of ACBM to be disturbed or repaired is less than 3 linear or 3 square feet. Larger projects or activity cannot be broken up or scheduled in groups to minimize the quantity of ACBM for the purposes of classifying work as small-scale, short duration O&M activity.

Worker Protection

The school must comply with either the OSHA Asbestos Construction Standard at 29 CFR 1926.1101 (or for public employees the Asbestos Worker Protection Rule at 40 CFR 763.120) including proper training, personal protective equipment, respiratory protection programs, medical surveillance, proper equipment and engineering controls, and other relevant work and safety requirements.

General O&M Cleaning

Cleaning should be completed through each entire room marked (or as otherwise indicated on the attached room-by-room inventory) as having damaged ACBM or friable ACBM present, as stated in AHERA, on a semi-annual basis.

- (i) HEPA-vacuum or steam-clean all carpets.
- (ii) HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.
- (iii) Dispose of all debris, filters, mop heads, and cloths in sealed, leak-tight containers

Fiber Release Episodes

In the event of the falling or dislodging of small amounts, less than 3 square or 3 linear feet of ACBM, ensure the following is completed by O&M level trained, qualified staff:

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- Immediately restrict access and thoroughly saturate the debris using wet methods.
- Clean the area using appropriate O&M level methods.
- Place the asbestos debris in a sealed, leak-tight container for proper disposal
- Repair the area of damaged ACM as applicable according to the AHERA rule.

In the event of the falling or dislodging of more than 3 square or 3 linear feet of ACM:

- Immediately restrict entry to the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.
- Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.
- Contact the school's outside consultant for assistance with testing and design of the appropriate response action. Use the design plan to obtain pricing from qualified abatement contractors to complete the response action.

Other Specific ACM Updates

Flooring and Mastic

The floor tile and mastic are present in most of the school buildings and is nonfriable ACM with the potential for damage. No immediate response action is required, as these materials can safely be managed in place. The materials were in good condition with some minor wear and tear observed. Care should be used not to disturb the underlying flooring (i.e. drilling or cutting holes for electrical/plumbing work). Regarding the flooring that is not covered with carpeting and/or newer 12" floor tile, care should be taken to avoid activities which will abrade the surface of the floor tile. Buffing, stripping, and other flooring maintenance activity should be completed in accordance with the most current guidelines for ACM flooring. High speed buffing or use of abrasive pads must not be conducted on the ACM floors. (References the Draft EPA Region I Guidance Document enclosed herein.)

The flooring ACM must be managed properly in accordance with AHERA and this management plan until they are completely removed.

Flooring mastic, along with any floor tile or linoleum that is, was, or may have been assumed to be ACM, should continue to be classified as ACM and properly tested prior to any flooring removal work (as applicable). It should be noted that a recent EPA advisory statement recommends that flooring which was previously tested as asbestos-free be confirmed using electron microscopy prior to any removal or other activities that may result in the disturbance of the flooring.

Pipe Fitting Insulation

The insulation was observed at the Mt. Caesar trench and the Cutler staff room. These materials were observed to be damaged with exposed ends, and are

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classified as damaged or significantly damaged ACBM, and repairs/removal is required by licensed and trained personnel. Special care should be used when accessing areas above ceilings or within walls to avoid accidental disturbance to the ACBM insulation or any possible debris and contaminated dust. It is also likely that additional material is present in locations not accessed for the reinspection work or in concealed locations.

Initial and periodic cleaning of the adjacent surfaces should be performed on an annual basis at a minimum, using wet-wiping and HEPA vacuuming.

Glue Daubs

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Fire Doors

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Transite Panels

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

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Assumed ACBM

Based on the RPF preliminary review of the records provided to RPF, it is RPF's opinion that the AHERA Plans may not address all of the possible ACBM present. For example, although not directly regulated by AHERA, various exterior suspect materials are present, as well as possible interior hidden ACBM. Based on the types and conditions of the listed assumed ACBM in this school building, it is recommended that all the assumed nonfriable ACBM be managed in-place accordance with the requirements of AHERA and the operations and maintenance program.

Assumed ACBM that does not require any immediate response actions includes the following materials:

- Sink basin undercoat
- Building seam caulk throughout the buildings
- Ceramic tile mastic and grout (2 types) in bathrooms
- Covebase, stair treads and adhesive throughout the building
- Gypsum board with joint compound
- Interior Door Caulk/Glaze
- Various exterior materials.

The gypsum board with joint compound throughout the building also requires initial testing and is assumed ACBM. Care should be used not to disturb the materials during the interim including notification and facilities staff, faculty and others that may disturb the gypsum or joint compound materials.

The non-friable assumed ACBM listed above are classified under AHERA as ACBM with the potential for damage. However, it should be noted that nonfriable ACBM and nonfriable assumed ACBM can be rendered friable when, for example, they are subjected to certain forces such as cutting, grinding, sawing, sanding, drilling, high-speed buffing, and other abrasive forces. This is particularly true during demolition or removal of nonfriable ACBM.

Under normal building conditions, the assumed nonfriable ACBM does not pose an immediate hazard. The materials are in good to fair condition in general, with some minor wear and tear. Care should be taken to ensure that the chalkboards are not broken or chipped. The exterior roofing, caulking, and glazing materials should not be subjected to grinding, cutting, abrasion, or other forces which would result in the production of dust.

The assumed nonfriable ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted, either directly or indirectly. If there exists a possibility that

AHERA Management Plan – 2020 Update Recommendations

the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Testing of the interior, accessible assumed ACBM should be completed as soon as feasible by a licensed inspector and the management plan be updated accordingly by a licensed management planner.

Exterior Suspected ACBM

Exterior ACBM (in many cases) is not directly regulated by AHERA but are regulated by other State and federal regulations. Prior to any disturbance, renovation, or demolition, a licensed inspector must inspect for and sample any suspect exterior ACBM to be impacted or disturbed. If ACBM is found, a licensed project designer should prepare abatement plans as needed to facilitate work.

Warning Labels

The schools must ensure warning labels are and continue to be immediately adjacent to any friable and nonfriable ACBM, suspected ACBM, and assumed to be ACM located in routine maintenance areas (such as boiler rooms, mechanical space and maintenance areas) at each school building. The warning label must read (in print which is readily visible because of large size or bright color) as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

Asbestos Abatement Activity

Asbestos response actions, as defined by AHERA, must be detailed in a specification (project design) prepared by a licensed asbestos abatement project designer in accordance with AHERA and State regulations. Licensed personnel/contractors must carry out the response actions. Abatement activity itself is beyond the scope of the management plan/O&M program.

New Construction, Additions and Renovated Space

For any new buildings or renovated space, obtain architectural/engineering (A/E) statements for new construction/renovation areas in accordance with AHERA, certifying that no asbestos was specified or used. In lieu of A/E statements, all newly installed buildings materials must be tested pursuant to the AHERA inspection requirements.

Prior to any renovation or demolition activity, additional inspection and testing by a licensed inspector is required to satisfy current state, EPA and OSHA requirements that may exceed the inspection requirements under AHERA and the existing inspection documentation for the school buildings.

In the event that any renovation work or other construction, repairs or maintenance is to

AHERA Management Plan – 2020 Update Recommendations

be completed, then the APM must review the work to determine that the ACBM will not be impacted, either directly or indirectly. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required. Only properly accredited and licensed personnel should complete the work.

Conflict of Interest

Pursuant to the EPA AHERA requirements and industry standards, abatement contractors should be engaged for inspection, testing, lab work, design or oversight, and clearance testing services. These services must be performed by qualified, certified firms completely independent of any abatement contractors used to complete work for the school.

**Note: Also reference the 2020 Reinspection Report for additional comments and recommendations.*

OSHA Asbestos Flooring Maintenance Information

OSHA ASBESTOS FLOORING MAINTENANCE SECTION

1926.1101(l)(3) Care of asbestos-containing flooring material.

1926.1101(l)(3)(i)

All vinyl and asphalt flooring material shall be maintained in accordance with this paragraph unless the building/facility owner demonstrates, pursuant to paragraph (g)(8)(i)(I) of this section that the flooring does not contain asbestos.

1926.1101(l)(3)(ii)

Sanding of flooring material is prohibited.

1926.1101(l)(3)(iii)

Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods.

1926.1101(l)(3)(iv)

Burnishing or dry buffing may be performed only on flooring which has sufficient finish so that the pad cannot contact the flooring material.

..1926.1101(l)(4)

1926.1101(l)(4)

Waste and debris and accompanying dust in an area containing accessible thermal system insulation or surfacing ACM/PACM or visibly deteriorated ACM:

1926.1101(l)(4)(i)

shall not be dusted or swept dry, or vacuumed without using a HEPA filter;

1926.1101(l)(4)(ii)

shall be promptly cleaned up and disposed of in leak tight containers.

OSHA Standards Interpretation and Compliance Letters

11/05/1999 - Questions regarding the cleaning of asbestos-containing floor tile.

[OSHA Standard Interpretation and Compliance Letters - Table of Contents](#)

Interpretation : **Record Type** •
(I)(3)1926.1101;(k)(7)1910.1001 : **Standard Number** •
Questions regarding the cleaning of asbestos-containing : **Subject** •
.floor tile
11/05/1999 : **Information Date** •

November 5, 1999

William A. Onderick, President
RFM Inc.
1008 Dogwood Lane
West Chester, Pennsylvania 19382

Dear Mr. Onderick:

Thank you for your July 27 letter regarding the cleaning of asbestos-containing floor tile. You wish clarification of the provisions in the Occupational Safety and Health Administration (OSHA) asbestos standards which regulate this activity. Your questions and our answers are provided below.

:Question 1

Are we correct that asbestos floor tile **cleaning** activities (normal maintenance such as stripping and buffing operations) are covered under both the Asbestos General Industry Standard (§1910.1001) and the Asbestos Construction Standard (§1926.1101)?

:Answer

control methods for only Class I or II asbestos work. The fact that the asbestos PELs are not exceeded when the floor stripping uses low abrasion pads at speeds greater than 300 revolutions per minute (rpm) is not a sufficient condition to warrant the receipt of a variance permitting such use. In order to receive a variance, the employer must have implemented some means of maintaining asbestos aerosol levels in the employees' breathing zones at levels equal to or less than the levels occurring at speeds lower than 300 rpm.

:Question 4

While the Construction Standard discusses submitting alternative work procedures, the General Industry Standard does not. How does one handle an alternative work procedure regarding the General Industry Standard?

:Answer

As we noted in our reply to your third question, the Construction Asbestos Standard makes allowances for alternative control methods for only Class I or II asbestos work. Therefore, whether the stripping or buffing of asbestos-containing flooring material is covered by the Construction Asbestos Standard or the General Industry Asbestos Standard, the employer who wishes to use alternative stripping or buffing procedures must seek a permanent variance.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. Please be aware that OSHA's enforcement guidance is subject to periodic review and clarification, amplification, or correction. Such guidance could also be affected by subsequent rulemaking. In the future, should you wish to verify that the guidance provided herein remains current, you may consult OSHA's website at <http://www.osha.gov>. If you have any further questions, please feel free to contact OSHA's Office of Health Compliance Assistance at (202) 693-2190.

Sincerely,

Richard E. Fairfax, Director
Directorate of Compliance Programs

OSHA Standard Interpretation and Compliance Letters - Table of Contents



U.S. Department of Labor

Occupational Safety and Health Administration

HOME
SEARCH
INDEX*Protecting the Safety and Health of America's Workers*[\[Text Only\]](#)**Standard Interpretations****02/09/2000 - Use of electric floor buffer with rotating blade attachment to remove asbestos-containing mastic.**[Standard Interpretations - Table of Contents](#)**• Standard Number:** 1926.1101(g)(8); 1926.1101(b)

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

February 9, 2000

Ms. Paula K. Smith
Attorney for Utah OSHA
State of Utah
Labor Commission
Office of General Counsel
160 East 300 South, 3rd Floor
P.O. Box 146600
Salt Lake City, Utah 84114-6600

Dear Ms. Smith:

Thank you for your December 14, 1999 letter to the Occupational Safety and Health Administration's (OSHA's) Directorate of Compliance Programs (DCP). We are providing you with interpretations of the Construction Asbestos Standard, 29 CFR 1926.1101, based on the specific situation you describe pertaining to floor tile and associated mastic removal.

Scenario: You describe an employer in Utah who was using an electric floor buffer with a rotating blade attachment to remove asbestos-containing mastic without first erecting a negative pressure enclosure (NPE) in which to perform the work. The employer in this scenario had wetted the floor. Utah OSHA (UOSH) believes the floor buffer was a



Project Summary

Airborne Asbestos Concentrations During Buffing, Burnishing, and Stripping of Resilient Floor Tile

John R. Kominsky, Ronald W. Freyberg, and James M. Boiano

This study was conducted to evaluate airborne asbestos concentrations during low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile under pre-existing and prepared levels of floor care maintenance. Airborne asbestos concentrations were measured before and during each floor-care procedure to determine the magnitude of the increase in airborne asbestos levels during each procedure. Airborne total fiber concentrations were also measured for comparison with the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 0.1 f/cm^3 , 8-hr. time-weighted average (TWA). Low-speed spray-buffing and wet-stripping were evaluated on pre-existing floor conditions and three levels of prepared floor-care conditions (poor, medium, and good). Ultra high-speed burnishing and wet-stripping were evaluated on two levels of prepared floor-care conditions (poor and good). All of the computed 8-hr. TWA personal sample results were below the OSHA PEL. It is noted that the floor tile in this study was of low asbestos content and in good condition, hence it is conceivable that floor tile with higher percentages of asbestos could result in higher levels of airborne asbestos during routine floor care maintenance activities. TEM analysis showed higher exposures to fibers predominantly less than $5 \mu\text{m}$ in length, whereas these shorter fibers were not counted by PCM.

This study shows that low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile can be sources of airborne asbestos in building air. The results suggest that multiple layers of sealant applied to the floor prior to the application of the floor finish can reduce the release of asbestos fibers during polish removal. The results of this study further support the U.S. EPA Recommended Interim Guidance for Maintenance of Asbestos-Containing Floor Coverings.

This Project Summary was developed by EPA's National Risk Management Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Three principal types of preventive maintenance are routinely performed on resilient floor tile: spray-buffing, ultra high-speed burnishing, and wet-stripping followed by refinishing. Spray-buffing is the restorative maintenance of a previously polished floor by use of a floor-polishing machine (operating at 175 to 1000 rpm) immediately after the surface has been mist-sprayed with a restorative product whereby the floor is buffed to dryness. Ultra high-speed burnishing is the buffing of a previously polished floor by using a floor polishing machine (operating at greater than 1500 rpm) without using a

restorative spray product. Wet-stripping is the removal of the finish from the floor using a chemical floor-polish stripper and a 175 rpm floor machine equipped with an appropriate strip pad. This current study was conducted to evaluate airborne asbestos concentrations during low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile under pre-existing and prepared levels of floor care maintenance.

Objectives

The objectives of the study were as follows:

- To determine the airborne asbestos concentrations during low-speed spray-buffing of asbestos-containing resilient floor tile in pre-existing floor condition.
- To determine airborne asbestos concentrations during polish removal from asbestos-containing resilient floor tile in pre-existing floor condition.
- To determine and compare the airborne asbestos concentrations during low-speed spray-buffing of asbestos-containing resilient floor tile in poor, medium, and good floor conditions.
- To determine and compare airborne asbestos concentrations during polish removal after low-speed spray-buffing of asbestos-containing resilient floor tile in medium and good conditions using a manual floor machine.
- To determine and compare the airborne asbestos concentrations during ultra high-speed burnishing of asbestos-containing resilient floor tile in poor and good floor conditions.
- To determine and compare the airborne asbestos concentrations during polish removal after ultra high-speed burnishing of asbestos-containing resilient floor tile in poor and good floor conditions using an automated floor machine.
- To determine whether personal breathing zone concentrations during low-speed spray-buffing of floors in pre-existing, poor, medium, and good conditions exceed the OSHA Permissible Exposure Limit (PEL) of 0.1 f/cm³, 8-hr. Time-Weighted Average (TWA).
- To determine whether personal breathing zone concentrations during ultra high-speed burnishing of floors in poor and good conditions exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.
- To determine whether personal breathing zone concentrations during polish removal after low-speed spray-

buffing of floors in pre-existing, poor, medium, and good condition exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.

- To determine whether personal breathing zone concentrations during polish removal after ultra high-speed burnishing of floors in poor and good conditions exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.

Site Description

This study was conducted in an unoccupied building located at the decommissioned Chanute Air Force Base (AFB) in Rantoul, IL. The study was conducted in a room which contained approximately 8600 ft² of open floor space tiled with 9-inch by 9-in. resilient floor tile containing approximately 5% chrysotile asbestos. Representatives of the Chemical Specialties Manufacturers Association (CSMA) and a floor products manufacturer visually inspected the physical condition of the floor. Their inspection focused on the evenness of the floor plane and the physical condition of the tile. They concluded that the floor was acceptable for the proposed study.

Configuration for Low-speed Spray-buffing and Wet-stripping Experiments

Approximately 6500 ft² of floor space was isolated as the experimental test area. A containment shell was constructed from 2-in. by 4-in. and 2-in. by 6-in. lumber to provide five equally-dimensioned test rooms, each with approximately 1300 ft² of floor space and 7-ft ceiling height. The containment shell was then surfaced with 6-mil polyethylene sheeting to provide airtight walls and ceilings for the five test rooms. The ceiling for each test room consisted of a single layer of polyethylene sheeting. The walls of each test room were surfaced with seven layers of polyethylene sheeting. Four high-efficiency particulate air (HEPA) filtration units were placed in the hallway outside of the five test rooms to ventilate the test rooms and reduce the airborne asbestos concentrations to background levels after each experiment.

Configuration for Ultra High-Speed Burnishing and Wet-stripping Experiments

Upon completion of the low-speed spray-buffing and wet-stripping experiments, the test area was reconfigured to accommodate the ultra high-speed burnishing and wet-stripping experiments. The test area was reconfigured to provide a

single test room of approximately 6500 ft² of floor space and 7-ft. ceiling height. The ceiling for the test room consisted of a single layer of polyethylene sheeting. The walls were surfaced with eight layers of polyethylene sheeting. Three HEPA filtration units were placed in the hallway outside of the test room to ventilate the test room and reduce the airborne asbestos concentrations to background levels after each experiment. The units were operated during the preparation phase of each experiment but not during the actual burnishing or wet-stripping experiments. All three HEPA units discharged the air outdoors via 12-in. diameter flexible ducting. Fresh air into the test room was obtained directly from outdoors through windows.

Experimental Design

Low-Speed Spray-Buffing and Wet-Stripping

Pre-existing Conditions

Low-speed spray-buffing was first evaluated on the pre-existing floor-care condition. Pre-existing condition was the condition of the floor as it existed in the room prior to evaluating the prepared floor-care conditions. Pre-existing floor conditions consisted of an undetermined number of coats of a Carnauba-type, buffable polish on the floor tile. Low-speed spray-buffing of the pre-existing floor-care condition was evaluated five times, once in each of the five test rooms. Wet-stripping (including polish and sealant removal) was also evaluated on the pre-existing floor-care condition. Wet-stripping of the pre-existing floor-care condition was evaluated five times, once in each of the five test rooms.

Prepared Floor Care Conditions

Low-speed spray-buffing was evaluated on three levels of prepared floor-care conditions: 1) poor floor-care condition, 2) medium floor-care condition, and 3) good floor-care condition. Poor floor-care condition was defined as a floor with one coat of sealant and one coat of polish. Medium floor-care condition was defined as a floor with one coat of sealant and two coats of polish. Good floor-care condition was defined as a floor with two coats of sealant and three coats of polish. Floor-care conditions were defined in consultation with the CSMA and other representatives of floor-care products manufacturers. Each floor-care condition was evaluated five times, once in each of the five test rooms, to yield a total of 15 experiments.

Wet-stripping after low-speed spray-buffing was evaluated on two levels of floor-

ture had a statistically significant effect on airborne asbestos concentrations measured during the procedure ($p=0.0128$). Specifically, larger increases in airborne asbestos concentrations were observed during wet-stripping than during spray-buffing. The estimated airborne asbestos concentrations during spray-buffing and wet-stripping as a proportion of the respective baseline concentrations were calculated along with the corresponding 95% confidence interval. The average airborne asbestos concentration measured during low-speed spray-buffing was approximately 11 times greater than the average baseline concentration. The 95% confidence interval for this proportion is (2.6, 47). The lower 95% confidence limit is greater than 1, which indicates this is a statistically significant increase. The average airborne asbestos concentration measured during wet-stripping was approximately 186 times greater than baseline concentrations. The 95% confidence interval for this proportion is (44, 788). The lower 95% confidence limit is greater than 1, which indicates this is a statistically significant increase.

PCM Concentrations

Two personal breathing zone samples were collected during each experiment and analyzed by PCM. None of the individual PCM concentrations exceeded the OSHA

PEL of 0.1 f/cm^3 . The highest individual PCM concentration (0.023 f/cm^3) was measured during wet-stripping. The 8-hr TWA concentrations associated with the measured levels were calculated by assuming zero exposure beyond that which was measured during the experiment. The 8-hr TWA concentrations ranged from 0.001 to 0.003 f/cm^3 during low-speed spray-buffing and from 0.0003 to 0.003 f/cm^3 during wet-stripping of floors in pre-existing condition. None of the 8-hr TWA concentrations exceeded the OSHA PEL of 0.1 f/cm^3 .

Although the results of the personal breathing zone samples analyzed by PCM were all below the OSHA PEL, considerably higher exposures were shown by the personal breathing zone samples analyzed by TEM. Two primary reasons explain why the TEM concentrations were considerably higher than the PCM concentrations. First, PCM cannot detect fibers thinner than $0.25 \mu\text{m}$ in width. Second, the PCM method used in this study (i.e., NIOSH 7400) does not count fibers shorter than $5 \mu\text{m}$ in length. Over 99% of the asbestos structures measured during low-speed spray-buffing and wet-stripping of floors in pre-existing condition were shorter than $5 \mu\text{m}$ in length and would therefore not be counted by the PCM method.

Caution should be exercised in extrapolating the PCM measurements collected

during this study to conditions at other sites. These tile were of low asbestos content and in good condition, and no other asbestos exposure activity was assumed.

Prepared Floor Conditions

TEM Concentrations

Figure 1 illustrates the overall average (geometric mean) concentrations measured before and during low-speed spray-buffing and wet-stripping on floors in prepared floor conditions. Although the mean relative increase in airborne asbestos concentrations during low-speed spray-buffing tended to decrease as the floor care condition improved (i.e., poor condition resulted in a larger relative increase than medium, and medium condition showed a larger relative increase than good), the differences between the three levels of floor care were not statistically significant ($p=0.1149$). Overall, the average airborne asbestos concentration during low-speed spray-buffing was approximately 2.6 times higher than the average baseline concentration. This increase was statistically significant ($p=0.0017$). A 95% confidence interval for the mean airborne asbestos concentration during spray-buffing as a proportion of the baseline concentration showed that the overall mean airborne asbestos con-

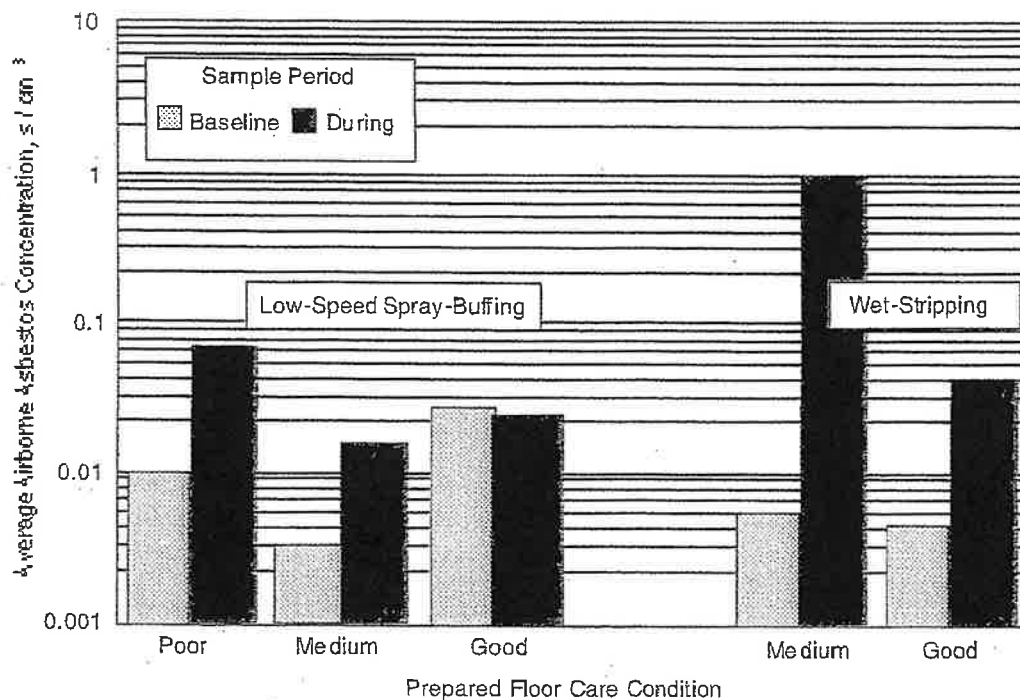


Figure 1. Average airborne asbestos concentrations during low-speed spraying of floors in prepared conditions.

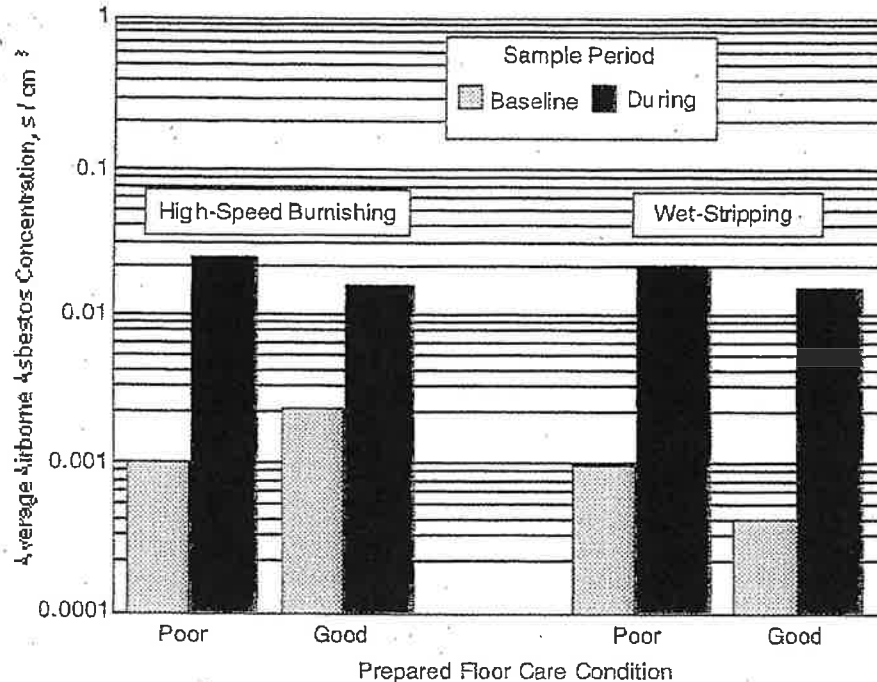


Figure 2. Average airborne asbestos concentrations measured before and during ultra high-speed burnishing and wet-stripping of floors in prepared conditions.

TWA concentrations measured during wet-stripping (after ultra high-speed burnishing) exceeded the OSHA PEL of 0.1 f/cm³ for total fibers, all of the 8-hr TWA concentrations measured during ultra high-speed burnishing exceeded the OSHA PEL. These exceedances, however, were due to the excess nonasbestos-containing particulate generated during the burnishing process and not to elevated airborne asbestos particles.

Conclusions

The following are the principal conclusions reached during this study:

- 1) Larger increases in airborne asbestos concentrations were observed during wet-stripping than during low-speed spray-buffing of floors in pre-existing condition. The average airborne asbestos concentration measured during low-speed spray-buffing was approximately 11 times greater than the average baseline concentration. The average airborne asbestos concentration measured during wet-stripping was approximately 186 times greater than the respective average baseline concentration. In both cases, the increases in airborne asbestos concentrations were statistically significant.
- 2) The average airborne asbestos concentration measured during low-speed spray-buffing of floors in the three levels of prepared floor-care conditions (poor, medium, and good) was approximately 2.6 times higher than the average baseline concentration. This increase was statistically significant.
- 3) The level of prepared floor care did not significantly affect the airborne asbestos concentrations measured during low-speed spray-buffing. Although the average increase in airborne asbestos concentrations tended to decrease as the level of floor care improved, the differences due to the three levels of floor care were not statistically significant.
- 4) Wet-stripping of floors in medium and good condition (after low-speed spray-buffing) resulted in statistically significant increases in airborne asbestos concentrations. The average airborne asbestos concentration measured during wet-stripping of floors in medium condition was approximately 108 times higher than the average baseline concentration, whereas the average airborne asbestos concentration measured during wet-stripping of floors in good condition was approximately 8.0 times higher than the average baseline concentration. The increase was statistically significant for both floor-care conditions.
- 5) A second layer of sealant appears to significantly decrease airborne asbestos levels during wet-stripping (after low-speed spray buffing). Larger increases in airborne asbestos concentrations were observed during wet-stripping of floors in medium condition than on floors in good condition. The average increase (relative to baseline measurements) in airborne asbestos concentration during wet-stripping of floors in medium condition was approximately 108 times greater than the average baseline concentration, whereas the average increase in airborne asbestos concentration during wet-stripping of floors in good condition was approximately 8.0 times greater than the average baseline concentration.

John R. Kominsky, Ronald W. Freyberg, and James M. Boiano are with
Environmental Quality Management, Inc., Cincinnati, OH 45240

Alva Edwards is the Technical Project Officer (see below) and

Thomas Sharp is the EPA Project Officer

The complete report, entitled "Airborne Asbestos Concentrations During
Buffing, Burnishing, and Stripping of Resilient Floor Tile," (Order No.
PB95-260212; Cost: \$27.00, subject to change) will be available only
from:

National Technical Information Service

5285 Port Royal Road

Springfield, VA 22161

Telephone: 703-487-4650

The EPA Technical Project Officer can be contacted at:

National Risk Management Research Laboratory

U.S. Environmental Protection Agency

Cincinnati, OH 45268

United States
Environmental Protection Agency
Technology Transfer and Support Division (CERI)
Cincinnati, OH 45268

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machine speeds and the release of asbestos particles from asbestos containing floor coverings. The higher the machine 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 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 percent solid finish.

It is an industry recommendation to apply several thin coats of a high percent solid finish to obtain a good sealing of the floor's surface, thereby minimizing the release of asbestos particles from the floor's surface.

2. If spray-buffing of floors is used, 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 concentrations than spray-buffing with low speed machines.

3. When dry-burnishing of floors is used, always operate the floor machine at the lowest rate of speed possible to accomplish the task (i.e., 1200-1750 rpm) 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. During the winter months where sanding and/or salting of icy parking lot becomes necessary, it is an industry recommendation that a 16-24 ft. matting be used at the entrance way to the school building and where feasible inside the doorway. This would significantly eliminate the scuffing of floors by abrasive sanding materials brought into the building on the shoes of students. Also more frequent wet mopping and dry mopping of floors should be performed during the winter months to minimize damage to the floors.

6. 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.

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 buffing or burnishing a floor finish while using a polishing or rejuvenating liquid. This liquid is sprayed on the floor in front of 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 rejuvenaters 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, rejuvenaters 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 floor 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.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 25 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Recommended Interim Guidance for Maintenance of
Asbestos-Containing Floor Coverings

FROM: Robert C. McNally, Chief *RC McNally*
Assistance Programs Development Branch
Environmental Assistance Division (TS-799)

TO: Interested Parties

Attached are recommended interim guidelines for stripping wax or finish coat from asbestos-containing floors in your buildings. They were developed by the U.S. Environmental Protection Agency (EPA) in consultation with asbestos control professionals and several flooring material and floor care product manufacturers to reduce any possible exposure to asbestos fibers.

In November 1989, the local NBC affiliate in Washington, D.C. produced and aired a 3-part series on the potential danger of stripping asbestos-containing floor tiles. The NBC network news carried a brief portion of the series on November 29. The series concluded that stripping excess wax or finish coat from asbestos-containing floor tiles in schools may increase the asbestos exposure of school maintenance personnel and school children.

The series has precipitated numerous telephone calls to EPA Headquarters and to the ten EPA Regional offices. Perhaps many of you have also received calls from parents, staff, custodial workers, and others.

Since its airing, EPA's Environmental Assistance Division has tried to explain more clearly what the series did and did not demonstrate. First, there is no clear evidence that the "routine" stripping activities described in the series produced significantly elevated levels of asbestos fibers. In fact, the air levels generated during routine stripping were below those which require special procedures under federal regulation. Thus,

(continued on back)

APPENDIX C

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Asbestos Management & Control Program
ASBESTOS INSPECTOR

KARA L FORSYTHE



DOB: 10/19/78

Eff. Date: 11/02/19

Exp. Date: 11/01/20

R

AI100394

Craig A. Wright
Craig A. Wright, Director
Air Resources Division

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Asbestos Management & Control Program
ASBESTOS MANAGEMENT PLANNER

KARA L FORSYTHE



DOB: 10/19/78

Eff. Date: 11/02/19

Exp. Date: 11/01/20

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AM100394

Craig A. Wright
Craig A. Wright, Director
Air Resources Division

RPF ENVIRONMENTAL, INC.

320 First NH Turnpike, Northwood, NH 03261 (603) 942-5432

Class Location: Northwood, NH

This is to certify that

Kara Forsythe

*has completed the requisite training and
has passed an examination for accreditation as:*

Asbestos Inspector - Annual Refresher

Pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

January 14, 2020
Examination Date

January 14, 2020
Course Date

January 14, 2021
Expiration Date

199631 - 07 - 10/19/78
Certificate Number/DOB

Dennis N. Francoeur Jr., Instructor

RPF ENVIRONMENTAL, INC.

320 First NH Turnpike, Northwood, NH 03261 (603) 942-5432
Class Located in Northwood, NH

This is to certify that

Kara Forsythe

*has completed the requisite training and
has passed an examination for accreditation as:*

Asbestos Management Planner - Annual Refresher

Pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

January 14, 2020
Examination Date

January 14, 2020
Course Date

January 14, 2021
Expiration Date

199632 - 01 - 10/19/78
Certificate Number/DOB

Dennis N. Francoeur Jr.
Dennis N. Francoeur Jr., Instructor

APPENDIX D

AHERA REINSPECTION METHODS & LIMITATIONS

(Page 1 of 2)

Reinspection Methods

The reinspection was completed in accordance with Part 763.85 (b) of 40 CFR Part 763, Subpart E - Asbestos Hazard Emergency Response Act (AHERA). Accessible ACBM's which were identified in the existing AHERA reports were visually reinspected in accordance with AHERA, to (a) observe whether the materials are friable, (b) observe the conditions of the ACBM and potential for disturbance, and (c) to assess the hazard potential of the ACBM. Documentation review consisted of only those specific documents which list ACBM which were provided by the school to RPF for review. A full review or audit of the AHERA Plans for the building (including abatement records), other record keeping requirements, and AHERA implementation records were not completed as part of this service. Please note that this reinspection report is intended to comply with the federal regulation and the report should not be considered or referenced as a detailed, full initial AHERA room-by-room inspection. Please also reference the initial AHERA Inspection Report prepared for the building by RPF and subsequent update records. This reinspection does not meet the requirements for full inspections prior to renovation or demolition activity.

A full inspection (for confirmation of previous inspection results) was also not completed during this project. In the event that other readily accessible suspect materials were observed by the inspector during the course of the reinspections (materials that may have been missed during the initial inspection or may require confirmation testing), the inspector provided preliminary notation on the reinspection reports to make the school aware that additional inspection or review may be required. However, in accordance with the AHERA reinspection requirements, the inspector did not conduct full initial inspection during the course of the reinspection work.

Limitations

- This reinspection only included the school buildings designated in the RPF listing. If other buildings are used as school buildings in accordance with 40 CFR Part 763 and need to be reinspected, please notify our office to make necessary arrangements. This reinspection and report does not meet the requirements set forth by US EPA, OSHA, and State agencies for conducting full asbestos inspections prior to renovation or demolition.
- The observations and conclusions presented in the report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the Scope of Services as discussed in the proposal and text of the report. The conclusions and recommendations are based on visual observations and testing (which was limited as indicated in the report), and were arrived at in accordance with generally accepted standards of industrial hygiene practice and asbestos professionals. In addition and as applicable, where sample analyses were conducted by an outside laboratory, RPF has relied upon the data provided and has not conducted an independent evaluation of the reliability of this data.
- Observations were made of the designated accessible areas of the site as indicated in the report. While it was the intent of RPF to conduct a survey to the degree indicated, it is important to note that not all suspect ACBM material at the site(s) were specifically assessed. Visibility was limited, as indicated, due to the presence of furnishings, equipment, solid walls, and solid or suspended ceilings throughout the facility. Suspect material may have been used and may be present in areas where detection and assessment is difficult until renovation and/or demolition proceeds.

- Although some assumptions may have been stated regarding the potential presence of inaccessible or hidden ACBM, a full inspection for all ACBM or a destructive inspection for possible inaccessible suspect ACBM was not conducted. This inspection did not include a hazard assessment survey or testing to determine current dust concentrations of asbestos in and around the building. The survey was limited to ACBM as indicated herein and a site assessment for other possible environmental health and safety hazards or subsurface pollution was not performed as part of the scope of this initial site inspection.
- Where access to portions of the surveyed area was unavailable or limited, RPF renders no opinion of the condition and assessment of these areas. The survey results only apply to areas specifically accessed by RPF during the site inspection.
- Interiors of mechanical equipment and other building or process equipment may also have ACBM gaskets or insulation present and were not included in this inspection. Further inspections would likely be required prior to renovation or demolition activity.
- Existing reports, drawings and analytical results provided by the Client to RPF (as applicable), were not verified and, as such, RPF has relied upon the data provided as indicated and has not conducted an independent evaluation of the reliability of this data.
- All hazard communication and notification requirements, as required by 40 CFR Part 763, U.S. OSHA regulation 29 CFR Part 1926, 29 CFR Part 1910, and other applicable rules and regulations, by and between the Client, general contractors, subcontractors, building occupants, employees, and other affected persons were the responsibility of the Client and Client's abatement contractor and are not part of the Scope of Services to be provided by RPF.
- Results presented in the report are limited to the materials and conditions present at the time that the site inspection was actually performed by RPF. The applicability of the observations and recommendations presented in this report to other portions of the site were not determined as part of this scope of work. Many accidents, injuries and exposures, and environmental conditions are a result of individual employee/employer actions and behaviors, which vary from day to day and with operations being conducted. Changes to the site that occur subsequent to the RPF inspection may result in conditions which differ from those present during the survey and presented in the findings of the report. For example, during construction changes it is possible that previously inaccessible suspect material may be encountered. As such, the contractors, employer's OSHA-competent persons, and other affected staff should be advised of the possible presence of inaccessible ACBM and suspect ACBM. In the event that newly identified suspect material is encountered, please contact RPF to arrange for proper inspection, assessment and testing as applicable.
- Typically, hazardous building materials such as asbestos, lead paint, PCB's, mercury, refrigerants, hydraulic fluids and other materials may be present in buildings. The survey performed by RPF only addresses the specific items as indicated in the report. In general, it is recommended that surveys for all accessible hazardous building material be performed. Notify RPF to arrange for additional survey work as needed.

July 6, 2020

Dave LaPointe
SAU 93, Monadnock Regional School District
Facilities Project Manager
Building and Grounds
600 Old Homestead Highway
Swanzey, NH 03446

Re: 3-Year AHERA Reinspection
RPF File No.: 209912

Dear Mr. LaPointe,

RPF Environmental, Inc. (RPF) conducted an asbestos reinspection for the Monadnock Regional School District on June 10, 2020 with EPA Asbestos Hazard Emergency Response Act (AHERA) requirement. The reinspection included a visual inspection of the areas known to contain asbestos-containing building materials (ACBM) and assumed ACBM, as stated in the AHERA inspection records provided to RPF for review.

In general, the ACBM inspected by RPF during this reinspection was observed to be in good to fair condition and the school should continue to manage the materials in accordance with the AHERA Management Plan and updated recommendations enclosed. It is important to note that RPF observed locations that have damaged ACBM present, for example in the Cutler Staff Room, which has damaged ACBM pipe insulation. The areas with damaged ACBM should be addressed as soon as feasible, and care must be used to prevent further disturbance and to avoid the creation of dust.

Buildings included in this reinspection included Monadnock Regional High School (MRHS), Mt. Caesar Elementary School, Wilcox, Cutler Elementary School, Troy Elementary School, George Emerson Elementary School, Sullivan Elementary School, Gilsum Elementary School, and the S.A.U. 93 Administration Building.

This reinspection report should be filed with the AHERA plans for each school building, as well as the central facilities office. Appendix A contains a listing of the ACBM reinspected during this project and the AHERA assessment and minimum recommended actions for each area of ACBM in the school. Appendix B includes management plan recommendations and updates to be used in conjunction with your original management plan for each building.

The Asbestos Program Manager (AHERA-designated person) for the school is required, pursuant to the AHERA Rule, to review this report and the appendices and to then develop a written plan to implement recommendations for management, abatement or additional testing work, as applicable.

If you have any questions or comments, or if you would like assistance with the recommendations provided herein, please do not hesitate to call me.

Sincerely,
RPF ENVIRONMENTAL, INC.



Kara Forsythe, SMS
AHERA Compliance Manager

Enclosures:

Appendix A: ACBM Inventory
Appendix B: Management Plan Updates
Appendix C: Reinspection Accreditation
Appendix D: Methodology and Limitations

209912 3 Year AHERA 061020 Rpt

APPENDIX A

CODE DESCRIPTIONS

(Index sheet for use with room by room listings in this appendix)

EPA Assessment Codes:

1. Damaged or significantly damaged thermal systems insulation asbestos containing material (ACM)
2. Damaged friable surfacing ACM
3. Significantly damaged friable surfacing ACM
4. Damaged or significantly damaged friable miscellaneous ACM
5. ACBM with the potential for damage
6. ACBM with the potential for significant damage
7. Any remaining ACBM or friable suspected ACBM
- NF. Material is nonfriable and assessments are not required by AHERA.

Response Summary Codes: (Summary of minimum recommendations only, please reference text of report and Appendix for additional recommendations.)

<u>Code</u>	<u>Description</u>
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- | | |
|----|---|
| 1. | Continue to manage this ACBM under the buildings Management Plan, Operations and Maintenance (O&M) Program and AHERA. Conduct spot maintenance repairs of any minor damage present (nonfriable ACBM) or that occurs in accordance with AHERA and the School O&M Program. Complete periodic cleaning with HEPA vacuums and wet wiping in all areas with friable ACBM on a 6 month basis, at a minimum. |
| 2. | Conduct repair, surface cleaning, encapsulation or enclosure response actions for this ACBM in accordance with AHERA. Use care to not create dust in the area and to prevent further disturbance. Continue to manage this ACBM under the building Management Plan, O&M Program and AHERA (See Summary Code 1). A licensed consultant design firm must prepare repair specifications (design) prior to obtaining pricing or bids for response actions by licensed asbestos contractors. Some small-scale maintenance work (<3 linear/square feet) can be completed by the school's maintenance staff if they qualify for the licensing exemption and they possess adequate training, current refresher training, and the necessary personal protective equipment and safety programs in place. It recommended that pricing for removal also be obtained as an option for consideration. Complete periodic cleaning with HEPA vacuums and wet wiping in all areas with friable ACBM on a 6 month basis at a minimum. |
| 3. | Remove the ACBM and conduct surface decontamination as recommended by accredited/licensed project designer in accordance with AHERA. Use care to not create dust in the area and to prevent further disturbance. Continue to manage any remaining ACBM under the building Management Plan, O&M Program and AHERA (See Summary Code 1). All assumed ACBM should be properly tested by a licensed inspection prior to abatement work or as soon as feasible, and the AHERA records updated accordingly. A licensed consultant design firm must prepare repair specifications (design) prior to obtaining pricing or bids for response actions by licensed asbestos contractors. All abatement activities must be conducted by properly accredited and licensed personnel/companies. |
| 4. | Complete verification of AHERA Inspection documentation. A Licensed inspector must assume materials are ACBM or properly test additional suspect ACBM. Exterior materials, except under certain circumstances, are not covered under AHERA but still must be inspected and handled as ACBM in accordance with other State, local, and federal regulations. Licensed inspector and management planner must update ACBM listings and Management Plans as needed. Obtain architectural statements for new construction/renovation areas in accordance with AHERA. Confirm that proper numbers of samples have been collected. |
| 5. | Accessible ACBM Removed. Removed material may be deleted from the ACBM listings. Abatement records should be reviewed to verify that all required records are on file at the school. RPF did not audit records for completeness or accuracy. |
| 6. | Material could not be located and may have been removed or enclosed, or it was not possible to confirm if the materials observed were in fact newer replacement materials. Verify abatement records and, if all records are obtained and complete, update the ACBM listings to reflect the abatement work. If an MNO listing is due to an inaccessible area or locked room, such areas should be inspected when feasible. |

S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes		
Wilcox Elementary School										
Basement Area near Boiler Room	12" Floor Tiles and masti	105 sq. ft	MISC	MNO	MNO	MNO	1	Material is covered over with carpet.		
Room 3	12" Floor Tiles and masti	105 sq. ft	MISC	MNO	MNO	MNO	1	Material is covered over with carpet.		
Front Entrance/landing	12" Floor Tiles	50 sq. ft	MISC	No	Good	NF	1,4	Materials appear newer and may be covering older floor tiles.		
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4			
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.										
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.										
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.										
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.										

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Emerson Elementary School								
Ground Floor								
Boiler Room	Fire Door	1	MISC	No	Good	5	1,4	
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.							
							4	See further discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes. Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Gilsom Elementary School								
Book storage next to Grade 6, Room 1	12" Floor Tile	70 sq. ft	MISC	No	Good	NF	1,4	Floor tiles are assumed to be ACBM, needs testing. 1/2 of the area is covered over with carpet.
Principal's Storage Room	12" Floor Tile	100 sq. ft	MISC	No	Good	NF	1,4	Floor tiles are assumed to be ACBM, needs testing.
Secretaries Bathroom	12" Floor Tile	30 sq. ft	MISC	No	MNO	MNO	1,4	Floor tiles are assumed to be ACBM, needs testing.
Hall outside Classroom 3	12" Floor Tile	32 sq. ft	MISC	No	Good	NF	1,4	Materials have been covered over with carpet.
Music/art	12" Floor Tile	32 sq. ft	MISC	No	Good	NF	1	Floor tile are assumed to be ACBM, needs testing. Ny sink and bathroom
Music/art	Sink basin undercoat	2 sq. ft.	MISC	No	Good	NF	1,4	Material is assumed to be ACBM, test prior to removal.
OT/PT Office prviously listed as Library Office	12" Floor Tile	120 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Classroom 3	12" Floor Tile	906 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Kindergarten Classroom #4	12" Floor Tile	856 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing. 1/4 of the area is covered over with carpet.
Stairwell landing to Basement	12" Floor Tile	18 sq. ft	MISC	No	Good	NF	1, 4	Floor tiles are assumed to be ACBM, needs testing.
Throughout original section	Flooring Mastic	-----	MISC	No	MNO	MNO	1, 4	1999 test results on file indicate mastic contains 10% asbestos; however locations are unclear.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report.
See Notes on Last Page								

S.A.U. 93: Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Gilsum Elementary School								
Note:	New additions need to have an Architectural/Engineering Statement stating there was no asbestos containing building materials used in the newer addition. In lieu of architectural engineering statement, initial AHERA Reinspections are required.					See discussion in report.		
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 30, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Frangible	Condition	Assessment	Response	Notes
Monadnock Regional High School								
Room 209 previously listed as Room 23-Classroom	9" Floor Tile	792 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018
Room 208/209 previously listed as Tech Ed Office. Formerly listed as Room between 22 & 24	9" Floor Tile	140 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018
Room 204B and office	9" Floor Tile	768 sq. ft	MISC	No	Fair	NF	1	Floor tiles at entrance to room were observed to be cracking and worn and areas of missing floor tiles.
Boy's Bath by Auditorium	Pipe Fitting Insulation	3 observed	TSI	Yes	Good	5	1	Material is located above the ceiling.
Room 202 previously listed as Room 12-Classroom	9" Floor Tile	792 sq. ft	MISC	MNO	MNO	MNO	1	Accessible materials were removed in 2010 by A-Best; however, floor tiles remain underneath the cabinets.
Room 100 Nurse's Office	9" Floor Tile	460 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount.
Room 101 previously listed as School Resource office	9" Floor Tile	400 sq. ft	MISC	MNO	MNO	MNO	1,6	Materials appear to be concrete underneath the carpet.
Principal's Office	9" Floor Tile	520 sq. ft	MISC	MNO	MNO	MNO	1	Area has been covered over with newer flooring.
Conference Room	9" Floor Tile	384 sq. ft	MISC	MNO	MNO	MNO	1	Area has been covered over with newer flooring.
Special Services Room 104 and 104B	9" Floor Tile	400 sq. ft	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2018.
Room 702 previously listed as Rm. Between 30/31 & 32	12" Floor Tile	646 sq. ft	MISC	No	Good	NF	1	
Boy's Bathroom near room 600	Pipe Fittings inside Pipe Chase	5 listed	TSI	Yes	MNO	MNO	1	Enclosed casing no access to pipe chase.
Girl's bath near Rm 500	Pipe Fittings inside Pipe Chase	5 listed	TSI	Yes	MNO	MNO	1	Enclosed casing no access to pipe chase.

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Monadnock Regional High School								
Room 607A	9" Floor Tile	200 sq. ft	MISC	No	Good	NF	1	
Room 510/511 previously listed as Room 78/79	Flooring Mastic (under 12" Floor tiles)	828 sq. ft.	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM.
Room 512 previously listed as Room 77	Flooring Mastic (under 12" Floor tiles)	828 sq. ft.	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM.
Room 514 previously listed as Room 76	Flooring Mastic (under 12" Floor tiles)	864 sq. ft.	MISC	MNO	MNO	MNO	1	RPF conducted testing in 2010 and the flooring mastic was found to be ACBM.
Storage Room between Rm. 51 & 53	9" Floor Tile	864 sq. ft.	MISC	MNO	MNO	MNO	5	Materials were removed by Catamount in 2016.
Connector rooms between 22 & 23	9" Floor Tile	336 sq. ft.	MISC	MNO	MNO	MNO	1,5	Accessible materials were removed in 2010 by A-Best, however floor tiles remain underneath the cabinets.
Note:	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.				Prior to any renovation		4	See further discussion in report
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93: Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Troy Elementary School								
Classroom 1 adjacent to kitchen	12" Floor Tile	883 sq. ft	MISC	No	Fair	NF	1	Some minor damaged/chipped and worn floor tiles were observed throughout.
Kitchen	Transite Panels	72 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with gypsum wallboard according to the school records.
Kitchen Pantry/Office	12" Floor tiles and mastic	130 sq. ft	MISC	No	Good	NF	1	
Hallway near gymnasium and rooms 1, 2, and 3	12" Floor tile and mastic	777 sq. ft	MISC	No	Good	NF	1	
Gymnasium	12" Floor tile and mastic	5, 658 sq. ft	MISC	No	Fair	NF	1	Spot replacement tiles are present.
Dry Food Storage Room	Transite Ceiling Panels	65 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with gypsum wallboard.
Rooms 6, 7, 8, 9, & 10	9" Floor tiles and mastic	3,3 75 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer tiles.
Rooms 11,12,13,14 &15	9" Floor tiles and mastic	3,375 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer tiles.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2017

Location	ACBM	Approximate Quantity	Category	Frable	Condition	Assessment	Response	Notes
Mount Caesar Elementary School								
Room D across from Room A Custodial Closet	Ceiling Plaster	150 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
Staff office/room	Ceiling Plaster	120 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
Boiler Room	Ceiling Plaster	500 sq. ft	MISC	Yes	Good	5	1	Materials repaired by Catamount in 2012
North-West Pipe Trench (Room 4)	Pipe Insulation	1, 064 lf	TSI	Yes	Enclosed	MNO	1	Area has been blocked off and no access is allowed.
North-West Pipe Trench (Room 4)	Pipe Fittings	55 previously observed	TSI	Yes	Enclosed	MNO	1	Area has been blocked off and no access is allowed.
South Pipe Trench	Pipe Insulation	300 lf	TSI	Yes	MNO	MNO	1	Materials have been enclosed and sealed within the trench following the construction in the boiler room.
South Pipe Trench	Pipe Fittings	15 previously observed	TSI	Yes	MNO	MNO	1	Materials have been enclosed and sealed within the trench following the construction in the boiler room.
Room 4	Glue Daubs	500 sq. ft	MISC	MNO	MNO	MNO	1	Materials are enclosed under ceiling.
Throughout	Glue Daubs	-----	Misc.	MNO	MNO	MNO	1,6	RPF conducted testing in 2009 in the PUPS room and the glue daubs were removed however it is possible that additional materials are present in other locations of the school behind original chalkboards and bulletin boards.
Entrance to East Annex	Transite Ceiling Panels	20 sq. ft	MISC	MNO	MNO	MNO	6	Material was not observed, may be covered over with plywood. Further review is required.

S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2017

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See discussion in report
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

S.A.U. 93 Monadnock Regional School District 3 Year AHERA Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
S.A.U. 93 Business Office (Wyman House)								
First Floor								
Payroll Office previously listed as accounts payable office	Pipe Insulation	8 lf.	TSI	Yes	MNO	MNO	5	Materials have been removed.
Work room and Hall	9" Floor Tiles	10 sq. ft	MISC	MNO	MNO	MNO	1	Materials have present underneath the addition walls.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763.								
Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
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S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Cutler Elementary School								
Computer Lab	12" Floor Tiles	90 sq. ft	MISC	No	Good	NF	1	
Staff room previously listed as Rm. 221	Pipe Insulation	50 sq. ft	TSI	Yes	Damaged	1	2	Materials were observed to have exposed ends and joints above ceiling. Repair. Conduct O&M cleaning within 15' of all surfaces with ACBM insulation.
Staff room previously listed as Rm. 221	Pipe Fitting Insulation	8 observed	TSI	Yes	Damaged	1	2	
Hall outside library previously listed as Hall-221	12" Tan Floor Tile	100 sq. ft	MISC	No	Good	NF	1	
Hall outside room #8 previously listed as Hall-212	12" White Floor Tile	100 sq. ft	MISC	No	Good	NF	1	
Hall between room #1 & 2 previously listed as Hall-201	12" White Floor Tile	475 sq. ft	MISC	MNO	MNO	MNO	1	Materials have been covered over with newer flooring and plywood.
Classroom Room #1 previously listed as 203	12" Tan Floor Tile	910 sq. ft	MISC	MNO	MNO	MNO	1	
Classroom Room #2 previously listed as 202	12" Tan Floor Tile	900 sq. ft	MISC	MNO	MNO	MNO	1	
Custodian closet previously listed as Room 204	12" White Floor Tile	25 sq. ft	MISC	No	Fair	NF	1	Materials were observe to be cracking at the entrance and lifting.
Girls Bath	12" Grey Floor Tiles	170 sq. ft	MISC	No	Good	NF	1	
Teacher's room	12" Tan Floor Tile	250 sq. ft	MISC	MNO	MNO	MNO	1,6	Materials have been covered over with newer flooring per site representative.
Closet room #3 previously listed as Room 209	9" Floor Tiles	16 sq. ft	MISC	MNO	MNO	MNO	1	Materials are covered over with carpet.

S.A.U. 93 Monadnock Regional School District 3 Year Reinspection 2020

Location	ACBM	Approximate Quantity	Category	Friable	Condition	Assessment	Response	Notes
Cutler Elementary School								
Classroom #3 previously listed as Room 210	12" Tan Floor Tile	1,386 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Stairwell outside classroom #5/6	12" White Floor Tile	120 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Hall outside classroom 5/6 previously listed as Hall-214	12" White Floor Tile	225 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout
Classroom #6 previously listed as Room 219	12" White Floor Tile	748 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Classroom #5 previously listed as Room 218	12" White Floor Tile	934 sq. ft	MISC	No	Fair	NF	1	Floor tiles were observed to have minor wear throughout.
Girl's Bath	12" Grey Floor Tiles	100 sq. ft	MISC	No	Good	NF	1	
Boy's Bath	12" Grey Floor Tiles	72 sq. ft	MISC	No	Good	NF	1	
Custodial	12" Grey Floor Tiles	20 sq. ft	MISC	No	Good	NF	1	
Basement Storage	12" Tan Floor Tile	1,059 sq. ft	MISC	No	Fair	NF	1	Normal wear throughout.
Throughout	Other suspect materials are present and further review is required. Prior to any renovation and/or demolition a full NESHAP survey must be conducted in accordance with various state and federal regulations.						4	See further discussion in report.
Category: MISC is miscellaneous material; TSI is thermal system insulation; SURF is surfacing material. Categorized in accordance with 40 CFR Part 763. Assessment Codes based on 40 CFR Part 763: 1. Damaged or significantly damaged thermal system insulation ACM; 2. Damaged friable surfacing ACM; 3. Significantly damaged friable surfacing ACM; 4. Damaged or significantly damaged friable miscellaneous ACM; 5. ACBM with potential for damage; 6. ACBM with potential for significant damage; 7. Any remaining ACM. "NF" means nonfriable, and assessments are not required. MNO means material not observed. Please reference AHERA and the school management plan for discussion on assessment codes.								
Response Codes: 1. Manage ACBM in accordance with Management Plan; 2. Conduct repairs and cleaning; 3. Conduct removal and cleaning; 4. Material suspect and requires further testing; 5. ACBM has been removed and may be removed from listings; 6. ACBM was not observed and further review is required. See further discussion and requirements in report.								
Scheduling: For general O&M management of ACBM recommendations, the beginning start date was the inception of the management plan and the completion shall be until removal of all materials or sampling and analysis proved material is non-ACBM unless otherwise specified in the notes/scheduling column. O&M cleaning of surfaces in locations with friable ACBM or damaged ACBM, and Code 2 repairs and cleaning be completed by December 31, 2020 or sooner if feasible.								

APPENDIX B

AHERA Management Plan – 2020 Update Recommendations

The following comments and recommendations should be reviewed in conjunction with the findings and discussions contained in the text of the report, attachments, the school's 1989 initial AHERA Report and Management Plan, and the federal standard 40 CFR Part 763. In particular, the existing Operations and Maintenance program should be referenced for additional work methods, minimum requirements and procedures, and safety and health.

Documentation review during the reinspection consisted of only those specific documents which list ACBM and were provided by the school for RPF to review. A full review or audit of the AHERA Plans for each building (including abatement records), other record-keeping requirements, or AHERA implementation records was not completed as part of this service. Except as otherwise noted, the reinspection work only included ACBM's identified in the inspection report provided to RPF by the school. During the reinspection and initial inspections, abatement documentation and other record-keeping items were not completely reviewed or audited for accuracy and completeness. This type of review was beyond the scope of services for the project.

A full inspection (for confirmation of previous inspection results) was also not completed during this project. In the event that other readily accessible suspect materials were observed by the inspector during the course of the reinspection (materials that may have been missed during the initial inspection or may require confirmation testing), the inspector provided preliminary notation on the reinspection reports to make the school aware that additional inspection or review may be required. Based on the RPF preliminary review of the records provided to RPF, it is RPF's opinion that the AHERA Plans may not address all of the possible ACBM present. However, in accordance with AHERA reinspection requirements, the inspector did not conduct full initial inspection during the course of the reinspection work.

Asbestos Program Manager

The school must maintain a current true and correct statement, signed by the individual designated by the school (the Asbestos Program Manager) that certifies that the general, local education agency responsibilities, as stipulated by the AHERA regulation, have been met or will be met. It is important to update this as personnel changes occur and that a copy is maintained with the current Management Plan documentation. The Asbestos Program Manager must be sure to receive and maintain adequate training and to obtain and file all necessary recordkeeping requirements pursuant to AHERA and the Management Plan, including but not limited to: training, reinspections, surveillance, O&M activity, abatement design and final reports, annual notifications, and other related asbestos management information and documentation.

Resources

Below is an estimated cost for various training and requirements of the AHERA management plan with reasonable cost assumptions over the next three years:

AHERA Management Plan – 2020 Update Recommendations

Task/Description	Estimated Costs
Annual 2-hour Awareness Training	\$785-\$950
O&M Initial Training - up to 4	\$1,600-\$1,900
O&M Refresher Training	\$750-\$950
6-month Periodic Surveillance (if outsourced and not performed by the trained in-house staff)	\$600-\$,850
3-year AHERA Reinspection 2020	\$1,800-\$2,500
Additional Inspection, Lab Work, Updates	\$5,500-\$7,500

In addition, it is anticipated that some of the repair and cleaning work (small-scale and of short duration) that is recommended will be completed by in-house O&M level trained facilities staff, in accordance with the school's existing O&M Program and AHERA requirements. As such, the incremental increase in cost will likely be approximately \$1,500 for various materials and disposal.

3-Year Reinspection

The school must continue to have a reinspection completed by a licensed inspector and management planner at least once during every three-year period from the inception of the Management Plan.

6-Month Surveillance

The school must continue to have periodic surveillance of all ACBM at least every 6-months, by either an adequately trained O&M level staff member or an outside licensed inspector.

Maintenance and Custodial Staff Training

The school shall ensure that all custodial and maintenance employees are properly trained in accordance with AHERA and other applicable rules and regulations

2 Hour Awareness: All janitorial, custodial and maintenance staff shall have a minimum of 2-hour asbestos awareness training upon hiring and each year

O&M Level Training: Maintenance staff who may come in contact or who may disturb asbestos shall have a minimum of 16-hours of training upon hire and annual refresher training per State and EPA/OSHA requirements.

O&M Level Activity

The school must continue to ensure that all appropriate procedures are taken to protect building occupants for any O&M activity undertaken, including but not limited to:

- Restrict entry into the area by persons other than those necessary to perform the maintenance project, either by physically isolating the area or by scheduling.

AHERA Management Plan – 2020 Update Recommendations

- Post signs to prevent entry by unauthorized persons.
- Shut off or temporarily modify the air-handling system and restrict other sources of air movement.
- Use work practices or other controls, such as wet methods, protective clothing, HEPA-vacuums, mini-enclosures, and glove bags, as necessary to inhibit the spread of any released fibers.
- Clean all fixtures or other components in the immediate work area.
- Place the asbestos debris and other cleaning materials in a sealed, leak-tight container for proper disposal at a permitted site.

O&M activity is typically limited to small-scale, short duration work where the primary intent is building maintenance, repair, or renovation where the removal of ACBM is not the primary goal of the job; and, the amount of ACBM to be disturbed or repaired is less than 3 linear or 3 square feet. Larger projects or activity cannot be broken up or scheduled in groups to minimize the quantity of ACBM for the purposes of classifying work as small-scale, short duration O&M activity.

Worker Protection

The school must comply with either the OSHA Asbestos Construction Standard at 29 CFR 1926.1101 (or for public employees the Asbestos Worker Protection Rule at 40 CFR 763.120) including proper training, personal protective equipment, respiratory protection programs, medical surveillance, proper equipment and engineering controls, and other relevant work and safety requirements.

General O&M Cleaning

Cleaning should be completed through each entire room marked (or as otherwise indicated on the attached room-by-room inventory) as having damaged ACBM or friable ACBM present, as stated in AHERA, on a semi-annual basis.

- (i) HEPA-vacuum or steam-clean all carpets.
- (ii) HEPA-vacuum or wet-clean all other floors and all other horizontal surfaces.
- (iii) Dispose of all debris, filters, mop heads, and cloths in sealed, leak-tight containers

Fiber Release Episodes

In the event of the falling or dislodging of small amounts, less than 3 square or 3 linear feet of ACBM, ensure the following is completed by O&M level trained, qualified staff:

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- Immediately restrict access and thoroughly saturate the debris using wet methods.
- Clean the area using appropriate O&M level methods.
- Place the asbestos debris in a sealed, leak-tight container for proper disposal
- Repair the area of damaged ACM as applicable according to the AHERA rule.

In the event of the falling or dislodging of more than 3 square or 3 linear feet of ACM:

- Immediately restrict entry to the area and post signs to prevent entry into the area by persons other than those necessary to perform the response action.
- Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.
- Contact the school's outside consultant for assistance with testing and design of the appropriate response action. Use the design plan to obtain pricing from qualified abatement contractors to complete the response action.

Other Specific ACM Updates

Flooring and Mastic

The floor tile and mastic are present in most of the school buildings and is nonfriable ACM with the potential for damage. No immediate response action is required, as these materials can safely be managed in place. The materials were in good condition with some minor wear and tear observed. Care should be used not to disturb the underlying flooring (i.e. drilling or cutting holes for electrical/plumbing work). Regarding the flooring that is not covered with carpeting and/or newer 12" floor tile, care should be taken to avoid activities which will abrade the surface of the floor tile. Buffing, stripping, and other flooring maintenance activity should be completed in accordance with the most current guidelines for ACM flooring. High speed buffing or use of abrasive pads must not be conducted on the ACM floors. (References the Draft EPA Region I Guidance Document enclosed herein.)

The flooring ACM must be managed properly in accordance with AHERA and this management plan until they are completely removed.

Flooring mastic, along with any floor tile or linoleum that is, was, or may have been assumed to be ACM, should continue to be classified as ACM and properly tested prior to any flooring removal work (as applicable). It should be noted that a recent EPA advisory statement recommends that flooring which was previously tested as asbestos-free be confirmed using electron microscopy prior to any removal or other activities that may result in the disturbance of the flooring.

Pipe Fitting Insulation

The insulation was observed at the Mt. Caesar trench and the Cutler staff room. These materials were observed to be damaged with exposed ends, and are

AHERA Management Plan – 2020 Update Recommendations

classified as damaged or significantly damaged ACBM, and repairs/removal is required by licensed and trained personnel. Special care should be used when accessing areas above ceilings or within walls to avoid accidental disturbance to the ACBM insulation or any possible debris and contaminated dust. It is also likely that additional material is present in locations not accessed for the reinspection work or in concealed locations.

Initial and periodic cleaning of the adjacent surfaces should be performed on an annual basis at a minimum, using wet-wiping and HEPA vacuuming.

Glue Daubs

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Fire Doors

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Transite Panels

No immediate response action is required. The ACBM is nonfriable with the potential for damage. The ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted either directly or indirectly by the work. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

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Assumed ACBM

Based on the RPF preliminary review of the records provided to RPF, it is RPF's opinion that the AHERA Plans may not address all of the possible ACBM present. For example, although not directly regulated by AHERA, various exterior suspect materials are present, as well as possible interior hidden ACBM. Based on the types and conditions of the listed assumed ACBM in this school building, it is recommended that all the assumed nonfriable ACBM be managed in-place accordance with the requirements of AHERA and the operations and maintenance program.

Assumed ACBM that does not require any immediate response actions includes the following materials:

- Sink basin undercoat
- Building seam caulk throughout the buildings
- Ceramic tile mastic and grout (2 types) in bathrooms
- Covebase, stair treads and adhesive throughout the building
- Gypsum board with joint compound
- Interior Door Caulk/Glaze
- Various exterior materials.

The gypsum board with joint compound throughout the building also requires initial testing and is assumed ACBM. Care should be used not to disturb the materials during the interim including notification and facilities staff, faculty and others that may disturb the gypsum or joint compound materials.

The non-friable assumed ACBM listed above are classified under AHERA as ACBM with the potential for damage. However, it should be noted that nonfriable ACBM and nonfriable assumed ACBM can be rendered friable when, for example, they are subjected to certain forces such as cutting, grinding, sawing, sanding, drilling, high-speed buffing, and other abrasive forces. This is particularly true during demolition or removal of nonfriable ACBM.

Under normal building conditions, the assumed nonfriable ACBM does not pose an immediate hazard. The materials are in good to fair condition in general, with some minor wear and tear. Care should be taken to ensure that the chalkboards are not broken or chipped. The exterior roofing, caulking, and glazing materials should not be subjected to grinding, cutting, abrasion, or other forces which would result in the production of dust.

The assumed nonfriable ACBM must be managed properly in accordance with AHERA and this management plan until they are completely removed. In the event that any renovation work or other construction, repairs or maintenance is to be completed, then the APM must review the work to determine that the ACBM will not be impacted, either directly or indirectly. If there exists a possibility that

AHERA Management Plan – 2020 Update Recommendations

the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required.

Testing of the interior, accessible assumed ACBM should be completed as soon as feasible by a licensed inspector and the management plan be updated accordingly by a licensed management planner.

Exterior Suspected ACBM

Exterior ACBM (in many cases) is not directly regulated by AHERA but are regulated by other State and federal regulations. Prior to any disturbance, renovation, or demolition, a licensed inspector must inspect for and sample any suspect exterior ACBM to be impacted or disturbed. If ACBM is found, a licensed project designer should prepare abatement plans as needed to facilitate work.

Warning Labels

The schools must ensure warning labels are and continue to be immediately adjacent to any friable and nonfriable ACBM, suspected ACBM, and assumed to be ACM located in routine maintenance areas (such as boiler rooms, mechanical space and maintenance areas) at each school building. The warning label must read (in print which is readily visible because of large size or bright color) as follows: CAUTION: ASBESTOS. HAZARDOUS. DO NOT DISTURB WITHOUT PROPER TRAINING AND EQUIPMENT.

Asbestos Abatement Activity

Asbestos response actions, as defined by AHERA, must be detailed in a specification (project design) prepared by a licensed asbestos abatement project designer in accordance with AHERA and State regulations. Licensed personnel/contractors must carry out the response actions. Abatement activity itself is beyond the scope of the management plan/O&M program.

New Construction, Additions and Renovated Space

For any new buildings or renovated space, obtain architectural/engineering (A/E) statements for new construction/renovation areas in accordance with AHERA, certifying that no asbestos was specified or used. In lieu of A/E statements, all newly installed buildings materials must be tested pursuant to the AHERA inspection requirements.

Prior to any renovation or demolition activity, additional inspection and testing by a licensed inspector is required to satisfy current state, EPA and OSHA requirements that may exceed the inspection requirements under AHERA and the existing inspection documentation for the school buildings.

In the event that any renovation work or other construction, repairs or maintenance is to

AHERA Management Plan – 2020 Update Recommendations

be completed, then the APM must review the work to determine that the ACBM will not be impacted, either directly or indirectly. If there exists a potential that the ACBM may be disturbed, then an accredited project designer/management planner should review the project and prepare abatement specification as required. Only properly accredited and licensed personnel should complete the work.

Conflict of Interest

Pursuant to the EPA AHERA requirements and industry standards, abatement contractors should be engaged for inspection, testing, lab work, design or oversight, and clearance testing services. These services must be performed by qualified, certified firms completely independent of any abatement contractors used to complete work for the school.

**Note: Also reference the 2020 Reinspection Report for additional comments and recommendations.*

OSHA Asbestos Flooring Maintenance Information

OSHA ASBESTOS FLOORING MAINTENANCE SECTION

1926.1101(l)(3) Care of asbestos-containing flooring material.

1926.1101(l)(3)(i)

All vinyl and asphalt flooring material shall be maintained in accordance with this paragraph unless the building/facility owner demonstrates, pursuant to paragraph (g)(8)(i)(I) of this section that the flooring does not contain asbestos.

1926.1101(l)(3)(ii)

Sanding of flooring material is prohibited.

1926.1101(l)(3)(iii)

Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods.

1926.1101(l)(3)(iv)

Burnishing or dry buffing may be performed only on flooring which has sufficient finish so that the pad cannot contact the flooring material.

..1926.1101(l)(4)

1926.1101(l)(4)

Waste and debris and accompanying dust in an area containing accessible thermal system insulation or surfacing ACM/PACM or visibly deteriorated ACM:

1926.1101(l)(4)(i)

shall not be dusted or swept dry, or vacuumed without using a HEPA filter;

1926.1101(l)(4)(ii)

shall be promptly cleaned up and disposed of in leak tight containers.

OSHA Standards Interpretation and Compliance Letters

11/05/1999 - Questions regarding the cleaning of asbestos-containing floor tile.

[OSHA Standard Interpretation and Compliance Letters - Table of Contents](#)

Interpretation :Record Type •
(I)(3)1926.1101;(k)(7)1910.1001 :Standard Number •
Questions regarding the cleaning of asbestos-containing :Subject •
.floor tile
11/05/1999 :Information Date •

November 5, 1999

William A. Onderick, President
RFM Inc.
1008 Dogwood Lane
West Chester, Pennsylvania 19382

Dear Mr. Onderick:

Thank you for your July 27 letter regarding the cleaning of asbestos-containing floor tile. You wish clarification of the provisions in the Occupational Safety and Health Administration (OSHA) asbestos standards which regulate this activity. Your questions and our answers are provided below.

:Question 1

Are we correct that asbestos floor tile **cleaning** activities (normal maintenance such as stripping and buffing operations) are covered under both the Asbestos General Industry Standard (§1910.1001) and the Asbestos Construction Standard (§1926.1101)?

:Answer

control methods for only Class I or II asbestos work. The fact that the asbestos PELs are not exceeded when the floor stripping uses low abrasion pads at speeds greater than 300 revolutions per minute (rpm) is not a sufficient condition to warrant the receipt of a variance permitting such use. In order to receive a variance, the employer must have implemented some means of maintaining asbestos aerosol levels in the employees' breathing zones at levels equal to or less than the levels occurring at speeds lower than 300 rpm.

:Question 4

While the Construction Standard discusses submitting alternative work procedures, the General Industry Standard does not. How does one handle an alternative work procedure regarding the General Industry Standard?

:Answer

As we noted in our reply to your third question, the Construction Asbestos Standard makes allowances for alternative control methods for only Class I or II asbestos work. Therefore, whether the stripping or buffing of asbestos-containing flooring material is covered by the Construction Asbestos Standard or the General Industry Asbestos Standard, the employer who wishes to use alternative stripping or buffing procedures must seek a permanent variance.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. Please be aware that OSHA's enforcement guidance is subject to periodic review and clarification, amplification, or correction. Such guidance could also be affected by subsequent rulemaking. In the future, should you wish to verify that the guidance provided herein remains current, you may consult OSHA's website at <http://www.osha.gov>. If you have any further questions, please feel free to contact OSHA's Office of Health Compliance Assistance at (202) 693-2190.

Sincerely,

Richard E. Fairfax, Director
Directorate of Compliance Programs

OSHA Standard Interpretation and Compliance Letters - Table of Contents



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Occupational Safety and Health Administration



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Protecting the Safety and Health of America's Workers

[Text Only]

Standard Interpretations

02/09/2000 - Use of electric floor buffer with rotating blade attachment to remove asbestos-containing mastic.

Standard Interpretations - Table of Contents

• **Standard Number:** 1926.1101(g)(8); 1926.1101(b)

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

February 9, 2000

Ms. Paula K. Smith
Attorney for Utah OSHA
State of Utah
Labor Commission
Office of General Counsel
160 East 300 South, 3rd Floor
P.O. Box 146600
Salt Lake City, Utah 84114-6600

Dear Ms. Smith:

Thank you for your December 14, 1999 letter to the Occupational Safety and Health Administration's (OSHA's) Directorate of Compliance Programs (DCP). We are providing you with interpretations of the Construction Asbestos Standard, 29 CFR 1926.1101, based on the specific situation you describe pertaining to floor tile and associated mastic removal.

Scenario: You describe an employer in Utah who was using an electric floor buffer with a rotating blade attachment to remove asbestos-containing mastic without first erecting a negative pressure enclosure (NPE) in which to perform the work. The employer in this scenario had wetted the floor. Utah OSHA (UOSH) believes the floor buffer was a



Project Summary

Airborne Asbestos Concentrations During Buffing, Burnishing, and Stripping of Resilient Floor Tile

John R. Kominsky, Ronald W. Freyberg, and James M. Boiano

This study was conducted to evaluate airborne asbestos concentrations during low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile under pre-existing and prepared levels of floor care maintenance. Airborne asbestos concentrations were measured before and during each floor-care procedure to determine the magnitude of the increase in airborne asbestos levels during each procedure. Airborne total fiber concentrations were also measured for comparison with the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) of 0.1 f/cm^3 , 8-hr. time-weighted average (TWA). Low-speed spray-buffing and wet-stripping were evaluated on pre-existing floor conditions and three levels of prepared floor-care conditions (poor, medium, and good). Ultra high-speed burnishing and wet-stripping were evaluated on two levels of prepared floor-care conditions (poor and good). All of the computed 8-hr. TWA personal sample results were below the OSHA PEL. It is noted that the floor tile in this study was of low asbestos content and in good condition, hence it is conceivable that floor tile with higher percentages of asbestos could result in higher levels of airborne asbestos during routine floor care maintenance activities. TEM analysis showed higher exposures to fibers predominantly less than $5 \mu\text{m}$ in length, whereas these shorter fibers were not counted by PCM.

This study shows that low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile can be sources of airborne asbestos in building air. The results suggest that multiple layers of sealant applied to the floor prior to the application of the floor finish can reduce the release of asbestos fibers during polish removal. The results of this study further support the U.S. EPA Recommended Interim Guidance for Maintenance of Asbestos-Containing Floor Coverings.

This Project Summary was developed by EPA's National Risk Management Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Three principal types of preventive maintenance are routinely performed on resilient floor tile: spray-buffing, ultra high-speed burnishing, and wet-stripping followed by refinishing. Spray-buffing is the restorative maintenance of a previously polished floor by use of a floor-polishing machine (operating at 175 to 1000 rpm) immediately after the surface has been mist-sprayed with a restorative product whereby the floor is buffed to dryness. Ultra high-speed burnishing is the buffing of a previously polished floor by using a floor polishing machine (operating at greater than 1500 rpm) without using a

restorative spray product. Wet-stripping is the removal of the finish from the floor using a chemical floor-polish stripper and a 175 rpm floor machine equipped with an appropriate strip pad. This current study was conducted to evaluate airborne asbestos concentrations during low-speed spray-buffing, ultra high-speed burnishing, and wet-stripping of asbestos-containing resilient floor tile under pre-existing and prepared levels of floor care maintenance.

Objectives

The objectives of the study were as follows:

- To determine the airborne asbestos concentrations during low-speed spray-buffing of asbestos-containing resilient floor tile in pre-existing floor condition.
- To determine airborne asbestos concentrations during polish removal from asbestos-containing resilient floor tile in pre-existing floor condition.
- To determine and compare the airborne asbestos concentrations during low-speed spray-buffing of asbestos-containing resilient floor tile in poor, medium, and good floor conditions.
- To determine and compare airborne asbestos concentrations during polish removal after low-speed spray-buffing of asbestos-containing resilient floor tile in medium and good conditions using a manual floor machine.
- To determine and compare the airborne asbestos concentrations during ultra high-speed burnishing of asbestos-containing resilient floor tile in poor and good floor conditions.
- To determine and compare the airborne asbestos concentrations during polish removal after ultra high-speed burnishing of asbestos-containing resilient floor tile in poor and good floor conditions using an automated floor machine.
- To determine whether personal breathing zone concentrations during low-speed spray-buffing of floors in pre-existing, poor, medium, and good conditions exceed the OSHA Permissible Exposure Limit (PEL) of 0.1 f/cm³, 8-hr. Time-Weighted Average (TWA).
- To determine whether personal breathing zone concentrations during ultra high-speed burnishing of floors in poor and good conditions exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.
- To determine whether personal breathing zone concentrations during polish removal after low-speed spray-

buffing of floors in pre-existing, poor, medium, and good condition exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.

- To determine whether personal breathing zone concentrations during polish removal after ultra high-speed burnishing of floors in poor and good conditions exceed the OSHA PEL of 0.1 f/cm³, 8-hr. TWA.

Site Description

This study was conducted in an unoccupied building located at the decommissioned Chanute Air Force Base (AFB) in Rantoul, IL. The study was conducted in a room which contained approximately 8600 ft² of open floor space tiled with 9-inch by 9-in. resilient floor tile containing approximately 5% chrysotile asbestos. Representatives of the Chemical Specialties Manufacturers Association (CSMA) and a floor products manufacturer visually inspected the physical condition of the floor. Their inspection focused on the evenness of the floor plane and the physical condition of the tile. They concluded that the floor was acceptable for the proposed study.

Configuration for Low-speed Spray-buffing and Wet-stripping Experiments

Approximately 6500 ft² of floor space was isolated as the experimental test area. A containment shell was constructed from 2-in. by 4-in. and 2-in. by 6-in. lumber to provide five equally-dimensioned test rooms, each with approximately 1300 ft² of floor space and 7-ft ceiling height. The containment shell was then surfaced with 6-mil polyethylene sheeting to provide airtight walls and ceilings for the five test rooms. The ceiling for each test room consisted of a single layer of polyethylene sheeting. The walls of each test room were surfaced with seven layers of polyethylene sheeting. Four high-efficiency particulate air (HEPA) filtration units were placed in the hallway outside of the five test rooms to ventilate the test rooms and reduce the airborne asbestos concentrations to background levels after each experiment.

Configuration for Ultra High-Speed Burnishing and Wet-stripping Experiments

Upon completion of the low-speed spray-buffing and wet-stripping experiments, the test area was reconfigured to accommodate the ultra high-speed burnishing and wet-stripping experiments. The test area was reconfigured to provide a

single test room of approximately 6500 ft² of floor space and 7-ft. ceiling height. The ceiling for the test room consisted of a single layer of polyethylene sheeting. The walls were surfaced with eight layers of polyethylene sheeting. Three HEPA filtration units were placed in the hallway outside of the test room to ventilate the test room and reduce the airborne asbestos concentrations to background levels after each experiment. The units were operated during the preparation phase of each experiment but not during the actual burnishing or wet-stripping experiments. All three HEPA units discharged the air outdoors via 12-in. diameter flexible ducting. Fresh air into the test room was obtained directly from outdoors through windows.

Experimental Design

Low-Speed Spray-Buffing and Wet-Stripping

Pre-existing Conditions

Low-speed spray-buffing was first evaluated on the pre-existing floor-care condition. Pre-existing condition was the condition of the floor as it existed in the room prior to evaluating the prepared floor-care conditions. Pre-existing floor conditions consisted of an undetermined number of coats of a Carnauba-type, buffable polish on the floor tile. Low-speed spray-buffing of the pre-existing floor-care condition was evaluated five times, once in each of the five test rooms. Wet-stripping (including polish and sealant removal) was also evaluated on the pre-existing floor-care condition. Wet-stripping of the pre-existing floor-care condition was evaluated five times, once in each of the five test rooms.

Prepared Floor Care Conditions

Low-speed spray-buffing was evaluated on three levels of prepared floor-care conditions: 1) poor floor-care condition, 2) medium floor-care condition, and 3) good floor-care condition. Poor floor-care condition was defined as a floor with one coat of sealant and one coat of polish. Medium floor-care condition was defined as a floor with one coat of sealant and two coats of polish. Good floor-care condition was defined as a floor with two coats of sealant and three coats of polish. Floor-care conditions were defined in consultation with the CSMA and other representatives of floor-care products manufacturers. Each floor-care condition was evaluated five times, once in each of the five test rooms, to yield a total of 15 experiments.

Wet-stripping after low-speed spray-buffing was evaluated on two levels of floor-

cedure had a statistically significant effect on airborne asbestos concentrations measured during the procedure ($p=0.0128$). Specifically, larger increases in airborne asbestos concentrations were observed during wet-stripping than during spray-buffing. The estimated airborne asbestos concentrations during spray-buffing and wet-stripping as a proportion of the respective baseline concentrations were calculated along with the corresponding 95% confidence interval. The average airborne asbestos concentration measured during low-speed spray-buffing was approximately 11 times greater than the average baseline concentration. The 95% confidence interval for this proportion is (2.6, 47). The lower 95% confidence limit is greater than 1, which indicates this is a statistically significant increase. The average airborne asbestos concentration measured during wet-stripping was approximately 186 times greater than baseline concentrations. The 95% confidence interval for this proportion is (44, 788). The lower 95% confidence limit is greater than 1, which indicates this is a statistically significant increase.

PCM Concentrations

Two personal breathing zone samples were collected during each experiment and analyzed by PCM. None of the individual PCM concentrations exceeded the OSHA

PEL of 0.1 f/cm^3 . The highest individual PCM concentration (0.023 f/cm^3) was measured during wet-stripping. The 8-hr TWA concentrations associated with the measured levels were calculated by assuming zero exposure beyond that which was measured during the experiment. The 8-hr TWA concentrations ranged from 0.001 to 0.003 f/cm^3 during low-speed spray-buffing and from 0.0003 to 0.003 f/cm^3 during wet-stripping of floors in pre-existing condition. None of the 8-hr TWA concentrations exceeded the OSHA PEL of 0.1 f/cm^3 .

Although the results of the personal breathing zone samples analyzed by PCM were all below the OSHA PEL, considerably higher exposures were shown by the personal breathing zone samples analyzed by TEM. Two primary reasons explain why the TEM concentrations were considerably higher than the PCM concentrations. First, PCM cannot detect fibers thinner than $0.25 \mu\text{m}$ in width. Second, the PCM method used in this study (i.e., NIOSH 7400) does not count fibers shorter than $5 \mu\text{m}$ in length. Over 99% of the asbestos structures measured during low-speed spray-buffing and wet-stripping of floors in pre-existing condition were shorter than $5 \mu\text{m}$ in length and would therefore not be counted by the PCM method.

Caution should be exercised in extrapolating the PCM measurements collected

during this study to conditions at other sites. These tile were of low asbestos content and in good condition, and no other asbestos exposure activity was assumed.

Prepared Floor Conditions

TEM Concentrations

Figure 1 illustrates the overall average (geometric mean) concentrations measured before and during low-speed spray-buffing and wet-stripping on floors in prepared floor conditions. Although the mean relative increase in airborne asbestos concentrations during low-speed spray-buffing tended to decrease as the floor care condition improved (i.e., poor condition resulted in a larger relative increase than medium, and medium condition showed a larger relative increase than good), the differences between the three levels of floor care were not statistically significant ($p=0.1149$). Overall, the average airborne asbestos concentration during low-speed spray-buffing was approximately 2.6 times higher than the average baseline concentration. This increase was statistically significant ($p=0.0017$). A 95% confidence interval for the mean airborne asbestos concentration during spray-buffing as a proportion of the baseline concentration showed that the overall mean airborne asbestos con-

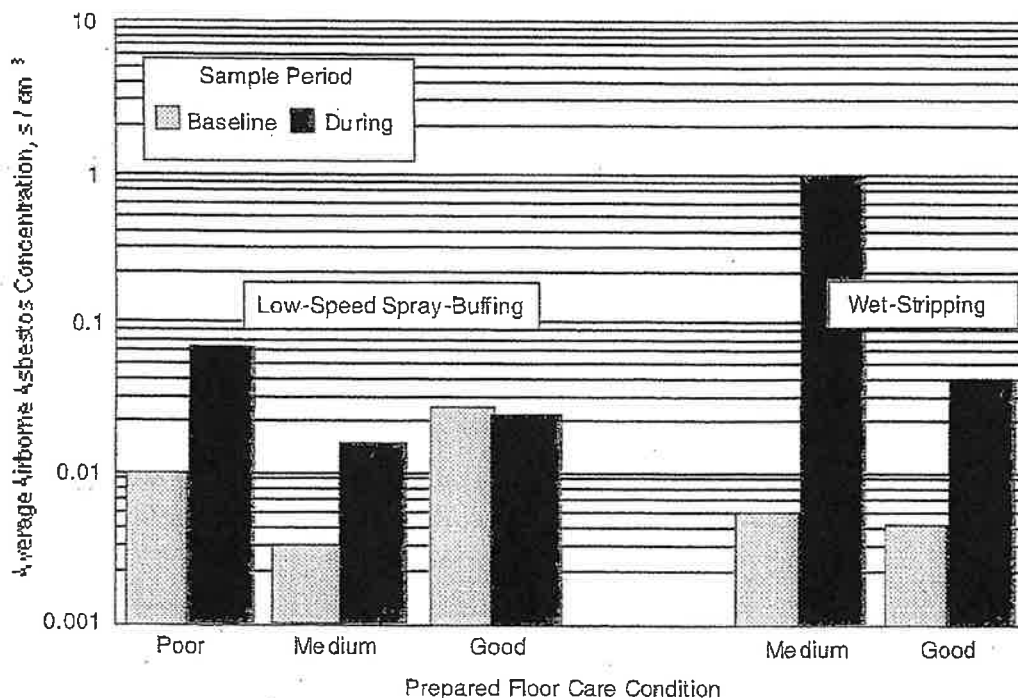


Figure 1. Average airborne asbestos concentrations during low-speed spraying of floors in prepared conditions.

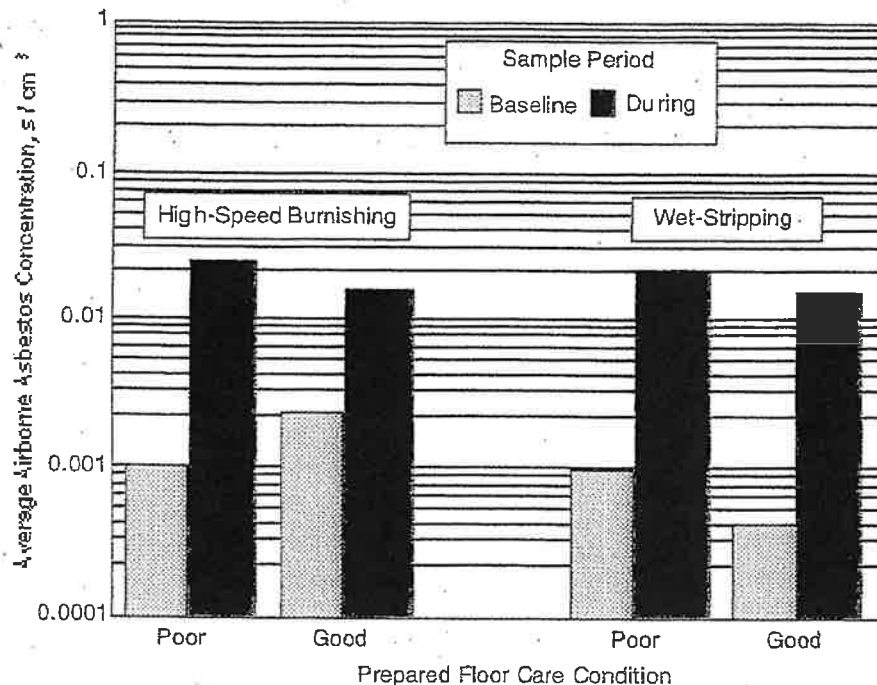


Figure 2. Average airborne asbestos concentrations measured before and during ultra high-speed burnishing and wet-stripping of floors in prepared conditions.

TWA concentrations measured during wet-stripping (after ultra high-speed burnishing) exceeded the OSHA PEL of 0.1 f/cm³ for total fibers, all of the 8-hr TWA concentrations measured during ultra high-speed burnishing exceeded the OSHA PEL. These exceedances, however, were due to the excess nonasbestos-containing particulate generated during the burnishing process and not to elevated airborne asbestos particles.

Conclusions

The following are the principal conclusions reached during this study:

- 1) Larger increases in airborne asbestos concentrations were observed during wet-stripping than during low-speed spray-buffing of floors in pre-existing condition. The average airborne asbestos concentration measured during low-speed spray-buffing was approximately 11 times greater than the average baseline concentration. The average airborne asbestos concentration measured during wet-stripping was approximately 186 times greater than the respective average baseline concentration. In both cases, the increases in airborne asbestos concentrations were statistically significant.
- 2) The average airborne asbestos concentration measured during low-speed spray-buffing of floors in the three levels of prepared floor-care conditions (poor, medium, and good) was approximately 2.6 times higher than the average baseline concentration. This increase was statistically significant.
- 3) The level of prepared floor care did not significantly affect the airborne asbestos concentrations measured during low-speed spray-buffing. Although the average increase in airborne asbestos concentrations tended to decrease as the level of floor care improved, the differences due to the three levels of floor care were not statistically significant.
- 4) Wet-stripping of floors in medium and good condition (after low-speed spray-buffing) resulted in statistically significant increases in airborne asbestos concentrations. The average airborne asbestos concentration measured during wet-stripping of floors in medium condition was approximately 108 times higher than the average baseline concentration, whereas the average airborne asbestos concentration measured during wet-stripping of floors in good condition was approximately 8.0 times higher than the average baseline concentration. The increase was statistically significant for both floor-care conditions.
- 5) A second layer of sealant appears to significantly decrease airborne asbestos levels during wet-stripping (after low-speed spray buffing). Larger increases in airborne asbestos concentrations were observed during wet-stripping of floors in medium condition than on floors in good condition. The average increase (relative to baseline measurements) in airborne asbestos concentration during wet-stripping of floors in medium condition was approximately 108 times greater than the average baseline concentration, whereas the average increase in airborne asbestos concentration during wet-stripping of floors in good condition was approximately 8.0 times greater than the average baseline concentration. The increase was statistically significant for both floor-care conditions.

John R. Kominsky, Ronald W. Freyberg, and James M. Boiano are with
Environmental Quality Management, Inc., Cincinnati, OH 45240
Alva Edwards is the Technical Project Officer (see below) and
Thomas Sharp is the EPA Project Officer
The complete report, entitled "Airborne Asbestos Concentrations During
Buffing, Burnishing, and Stripping of Resilient Floor Tile," (Order No.
PB95-260212; Cost: \$27.00, subject to change) will be available only
from:

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650

The EPA Technical Project Officer can be contacted at:
National Risk Management Research Laboratory
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machine speeds and the release of asbestos particles from asbestos containing floor coverings. The higher the machine 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 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 percent solid finish.

It is an industry recommendation to apply several thin coats of a high percent solid finish to obtain a good sealing of the floor's surface, thereby minimizing the release of asbestos particles from the floor's surface.

2. If spray-buffing of floors is used, 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 concentrations than spray-buffing with low speed machines.

3. When dry-burnishing of floors is used, 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. During the winter months where sanding and/or salting of icy parking lot becomes necessary, it is an industry recommendation that a 16-24 ft. matting be used at the entrance way to the school building and where feasible inside the doorway. This would significantly eliminate the scuffing of floors by abrasive sanding materials brought into the building on the shoes of students. Also more frequent wet mopping and dry mopping of floors should be performed during the winter months to minimize damage to the floors.

6. 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.

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 buffing or burnishing a floor finish while using a polishing or rejuvenating liquid. This liquid is sprayed on the floor in front of 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 floor 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.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 25 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Recommended Interim Guidance for Maintenance of
Asbestos-Containing Floor Coverings

FROM: Robert C. McNally, Chief *RC McNally*
Assistance Programs Development Branch
Environmental Assistance Division (TS-799)

TO: Interested Parties

Attached are recommended interim guidelines for stripping wax or finish coat from asbestos-containing floors in your buildings. They were developed by the U.S. Environmental Protection Agency (EPA) in consultation with asbestos control professionals and several flooring material and floor care product manufacturers to reduce any possible exposure to asbestos fibers.

In November 1989, the local NBC affiliate in Washington, D.C. produced and aired a 3-part series on the potential danger of stripping asbestos-containing floor tiles. The NBC network news carried a brief portion of the series on November 29. The series concluded that stripping excess wax or finish coat from asbestos-containing floor tiles in schools may increase the asbestos exposure of school maintenance personnel and school children.

The series has precipitated numerous telephone calls to EPA Headquarters and to the ten EPA Regional offices. Perhaps many of you have also received calls from parents, staff, custodial workers, and others.

Since its airing, EPA's Environmental Assistance Division has tried to explain more clearly what the series did and did not demonstrate. First, there is no clear evidence that the "routine" stripping activities described in the series produced significantly elevated levels of asbestos fibers. In fact, the air levels generated during routine stripping were below those which require special procedures under federal regulation. Thus,

(continued on back)

APPENDIX C

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Asbestos Management & Control Program
ASBESTOS INSPECTOR

KARA L FORSYTHE



DOB: 10/19/78

Eff. Date: 11/02/19

Exp. Date: 11/01/20

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AI100394

Craig A. Wright
Craig A. Wright, Director
Air Resources Division

STATE OF NEW HAMPSHIRE
Department of Environmental Services
Asbestos Management & Control Program
ASBESTOS MANAGEMENT PLANNER

KARA L FORSYTHE



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Class Location: Northwood, NH

This is to certify that

Kara Forsythe

*has completed the requisite training and
has passed an examination for accreditation as:*

Asbestos Inspector - Annual Refresher

Pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

January 14, 2020
Examination Date

January 14, 2020
Course Date

January 14, 2021
Expiration Date

199631 - 07 - 10/19/78
Certificate Number/DOB

Dennis N. Francoeur Jr., Instructor

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This is to certify that

Kara Forsythe

*has completed the requisite training and
has passed an examination for accreditation as:*

Asbestos Management Planner - Annual Refresher

Pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

January 14, 2020
Examination Date

199632 - 01 - 10/19/78
Certificate Number/DOB

January 14, 2020
Course Date

January 14, 2021
Expiration Date

Dennis N. Francoeur Jr.
Dennis N. Francoeur Jr., Instructor

APPENDIX D

AHERA REINSPECTION METHODS & LIMITATIONS

(Page 1 of 2)

Reinspection Methods

The reinspection was completed in accordance with Part 763.85 (b) of 40 CFR Part 763, Subpart E - Asbestos Hazard Emergency Response Act (AHERA). Accessible ACBM's which were identified in the existing AHERA reports were visually reinspected in accordance with AHERA, to (a) observe whether the materials are friable, (b) observe the conditions of the ACBM and potential for disturbance, and (c) to assess the hazard potential of the ACBM. Documentation review consisted of only those specific documents which list ACBM which were provided by the school to RPF for review. A full review or audit of the AHERA Plans for the building (including abatement records), other record keeping requirements, and AHERA implementation records were not completed as part of this service. Please note that this reinspection report is intended to comply with the federal regulation and the report should not be considered or referenced as a detailed, full initial AHERA room-by-room inspection. Please also reference the initial AHERA Inspection Report prepared for the building by RPF and subsequent update records. This reinspection does not meet the requirements for full inspections prior to renovation or demolition activity.

A full inspection (for confirmation of previous inspection results) was also not completed during this project. In the event that other readily accessible suspect materials were observed by the inspector during the course of the reinspections (materials that may have been missed during the initial inspection or may require confirmation testing), the inspector provided preliminary notation on the reinspection reports to make the school aware that additional inspection or review may be required. However, in accordance with the AHERA reinspection requirements, the inspector did not conduct full initial inspection during the course of the reinspection work.

Limitations

- This reinspection only included the school buildings designated in the RPF listing. If other buildings are used as school buildings in accordance with 40 CFR Part 763 and need to be reinspected, please notify our office to make necessary arrangements. This reinspection and report does not meet the requirements set forth by US EPA, OSHA, and State agencies for conducting full asbestos inspections prior to renovation or demolition.
- The observations and conclusions presented in the report were based solely upon the services described herein, and not on scientific tasks or procedures beyond the Scope of Services as discussed in the proposal and text of the report. The conclusions and recommendations are based on visual observations and testing (which was limited as indicated in the report), and were arrived at in accordance with generally accepted standards of industrial hygiene practice and asbestos professionals. In addition and as applicable, where sample analyses were conducted by an outside laboratory, RPF has relied upon the data provided and has not conducted an independent evaluation of the reliability of this data.
- Observations were made of the designated accessible areas of the site as indicated in the report. While it was the intent of RPF to conduct a survey to the degree indicated, it is important to note that not all suspect ACBM material at the site(s) were specifically assessed. Visibility was limited, as indicated, due to the presence of furnishings, equipment, solid walls, and solid or suspended ceilings throughout the facility. Suspect material may have been used and may be present in areas where detection and assessment is difficult until renovation and/or demolition proceeds.

- Although some assumptions may have been stated regarding the potential presence of inaccessible or hidden ACBM, a full inspection for all ACBM or a destructive inspection for possible inaccessible suspect ACBM was not conducted. This inspection did not include a hazard assessment survey or testing to determine current dust concentrations of asbestos in and around the building. The survey was limited to ACBM as indicated herein and a site assessment for other possible environmental health and safety hazards or subsurface pollution was not performed as part of the scope of this initial site inspection.
- Where access to portions of the surveyed area was unavailable or limited, RPF renders no opinion of the condition and assessment of these areas. The survey results only apply to areas specifically accessed by RPF during the site inspection.
- Interiors of mechanical equipment and other building or process equipment may also have ACBM gaskets or insulation present and were not included in this inspection. Further inspections would likely be required prior to renovation or demolition activity.
- Existing reports, drawings and analytical results provided by the Client to RPF (as applicable), were not verified and, as such, RPF has relied upon the data provided as indicated and has not conducted an independent evaluation of the reliability of this data.
- All hazard communication and notification requirements, as required by 40 CFR Part 763, U.S. OSHA regulation 29 CFR Part 1926, 29 CFR Part 1910, and other applicable rules and regulations, by and between the Client, general contractors, subcontractors, building occupants, employees, and other affected persons were the responsibility of the Client and Client's abatement contractor and are not part of the Scope of Services to be provided by RPF.
- Results presented in the report are limited to the materials and conditions present at the time that the site inspection was actually performed by RPF. The applicability of the observations and recommendations presented in this report to other portions of the site were not determined as part of this scope of work. Many accidents, injuries and exposures, and environmental conditions are a result of individual employee/employer actions and behaviors, which vary from day to day and with operations being conducted. Changes to the site that occur subsequent to the RPF inspection may result in conditions which differ from those present during the survey and presented in the findings of the report. For example, during construction changes it is possible that previously inaccessible suspect material may be encountered. As such, the contractors, employer's OSHA-competent persons, and other affected staff should be advised of the possible presence of inaccessible ACBM and suspect ACBM. In the event that newly identified suspect material is encountered, please contact RPF to arrange for proper inspection, assessment and testing as applicable.
- Typically, hazardous building materials such as asbestos, lead paint, PCB's, mercury, refrigerants, hydraulic fluids and other materials may be present in buildings. The survey performed by RPF only addresses the specific items as indicated in the report. In general, it is recommended that surveys for all accessible hazardous building material be performed. Notify RPF to arrange for additional survey work as needed.