CHAPTER 11 – APPENDICES

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Appendix 10 Policy for Handling Asbestos

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Appendix 10  Policy for Handling Asbestos

10.1 Introduction

10.1.1 The U.S. Environmental Protection Agency (EPA), and the Kansas Department of Health and Environment (KDHE) have issued rules and regulations concerning the handling of, or working with, asbestos. Those rules and regulations are summarized below and Kansas State University personnel will comply with the rules.

10.2 Inspection of Buildings for Asbestos

10.2.1 Any building owned by Kansas State University must be properly inspected for the presence of friable and nonfriable asbestos prior to demolition or renovation of the building. Building includes any institutional, commercial, public, industrial, residential or farm structure.

10.2.2 The inspection must be performed by an individual accredited in accordance with the asbestos Model Accreditation Plan (MAP) as stated in the EPA Asbestos School Hazard Abatement Reauthorization Act (ASHARA). The individual designing or conducting asbestos response actions must also be accredited in accordance with the MAP.

10.2.3 National Emission Standards for Hazardous Air Pollutants (NESHAPS) required pre-demolition notification. Ten (10) days prior to demolition of any structure, the EPA must be notified, whether or not asbestos is found in the inspection.

10.3 Asbestos Containing Materials

10.3.1 The potential for an asbestos-containing product to release breathable fibers depends on its degree of friability. Friable means that the material can be crumbled with hand pressure when dry and is therefore likely to emit fibers. The fibrous or fluffy sprayed-on materials used for fireproofing, insulation, or soundproofing are considered to be friable. Materials such as vinyl-asbestos floor tile, roofing felts, or asbestos-cement pipe or sheet (Transite) are considered nonfriable and generally do not emit airborne fibers unless subjected to sanding or sawing operations.

10.3.2 Major (greater than 3 linear or square feet) projects involving the removal and abatement of friable asbestos or materials containing friable asbestos will be handled on a case by case situation. All major asbestos projects shall be coordinated with the Department of Public Safety to ensure compliance with current regulations. The project coordinator must also notify KDHE and the EPA in writing not less than 10 working days before the intended start of the project. Kansas Annotated Regulations (K.A.R.) 28-50-8 provides for waivers in case of an emergency.

10.3.3 Kansas State University personnel certified by the state as asbestos workers may only perform maintenance related work without notification of KDHE. Maintenance related work is any job involving the removal, clean up, or encapsulation of three linear feet or less of friable asbestos from the surface of a pipe or three square feet or less of friable asbestos from any other structure. All maintenance related work shall be coordinated with the Division of Public Safety to ensure compliance with current regulations. All friable asbestos work will be reported in writing to the Division of Public Safety prior to the start of
the job. In the case of emergencies, notification will be by phone immediately followed by a written notification. Please use the Asbestos Maintenance Work form Appendix A (Section 10.12), or a reasonable facsimile.

10.3.4 Each asbestos worker shall be trained in an approved training course in accordance with K.A.R. 28-50-6. Only persons holding a current Kansas Class I or Class II Asbestos Worker certificate may engage in asbestos work in accordance with a K.A.R. 28-50-5. Any Kansas State University department that allows an uncertified individual to engage in asbestos work will be responsible for any fines levied by the EPA, or KDHE, as well as additional costs incurred for air monitoring, surveillance, and asbestos clean up.

10.3.5 Waiver for any individual requirements of these guidelines may be requested from the Division of Public Safety. Waivers will be considered on a case by case determination with approval by KDHE.

10.3.6 Nonfriable asbestos falls outside the state and federal asbestos rules and includes vinyl asbestos floor tile, mastic, transite and any other asbestos material that does not crumble with hand pressure. However, the workers and the public must be adequately protected during all removal procedures.

10.4 Worker Protection

10.4.1 Each asbestos worker shall be examined by a licensed physician within the preceding year and declared by the physician to be physically capable of working while wearing a respirator. The annual medical examination shall include a comprehensive history, a chest X-ray at the discretion of the physician, a pulmonary function test (forced vital capacity and forced expiratory volume at 1 second) and any other tests the physician requires. A signed statement by the physician shall be submitted to the KDHE at the time of application and a copy shall be maintained by the Division of Public Safety or the employee’s department (K.A.R. 28-50-5-a-1).

10.4.2 The worker’s department will be responsible to pay for the initial and annual medical examination. Physicians of the Lafene Health Center will administer the examination. Workers must use the attached Medical Questionnaire (Appendix B (Section 10.13) for initial exam and Appendix C (Section 10.14) for annual exam).

10.4.3 Respirators shall be worn by all workers while engaged in a maintenance project which disturbs friable asbestos. The respirators must be Mine Safety and Health Administration (MSHA) / National Institute of Occupational Safety and Health (NIOSH) approved for respiratory protection against dust, fumes and mists having an air contamination level less than 0.05 milligrams per cubic meter of air and must include any required attachments and/or filters.

10.4.4 Asbestos workers shall wear appropriate protective clothing to prevent unintentional transfer of asbestos fibers from the work area to other areas including home. Protective clothing shall consist of coveralls, gloves, head covers and foot covers. Protective clothing shall be worn at all times during asbestos work.

10.5 Asbestos Work Practices for Maintenance Jobs

10.5.1 Only certified Kansas Class I or Class II asbestos workers shall be allowed in the work area where asbestos related maintenance work is being performed. An
appropriate danger sign (see Appendix D, Section 10.15) shall be prominently posted at all approaches to the work area until the operation and cleanup is completed (K.A.R. 28-50-1-e).

10.5.2 The walls and floor in the vicinity (not less than six feet from the work site) shall be covered with not less than six-mil thick plastic sheeting. The plastic sheeting shall remain in place until cleanup.

10.5.3 The asbestos material must be wetted with a water solution containing an effective wetting agent prior to being cut, scrapped, removed, or otherwise handled. Power tools are not allowed when working with friable asbestos without prior approval of the Division of Public Safety.

10.5.4 When the job is completed, cleanup shall be done by wet cleaning the surfaces and/or vacuuming with a device equipped with a HEPA filter. This includes all surfaces previously covered by plastic sheeting if there are signs of visible leakage.

10.5.5 All asbestos containing materials that are removed or cleaned from a surface shall be maintained in a wet condition and placed in a sealed container for disposal in accordance with K.A.R. 28-50-14. This includes the plastic sheeting, protective clothing, and respirator cartridges used during the job.

10.5.6 All visible asbestos residue must be cleaned and removed. Any asbestos material left exposed after the job is completed, and surfaces once covered by asbestos shall be covered and sealed with a pigmented sealant before the area can be occupied by persons other than the asbestos workers.

10.5.7 Asbestos workers shall be provided with and shall wear an appropriate respirator and protective clothing while performing the operation. Outer clothing shall be cleaned with a HEPA filter equipped vacuuming device or by wet cleaning methods or removed before the persons move from the plastic sheeting placed on the floor.

10.6 Asbestos Work Practices Using Glove Bags

10.6.1 Each asbestos worker using the glove bag shall avoid damaging other friable asbestos containing materials located in the work area. Damaged sections of pipe or conduit from which the friable asbestos containing material is to be removed that is not immediately enclosed within a glove bag shall be tightly enclosed in six mil thick plastic sheeting until a glove bag is placed over it and the asbestos containing material is removed.

10.6.2 Glove bags shall be sealed to pipe or conduit to provide an airtight seal around the area to be removed.

10.6.3 All exposed surfaces of friable asbestos containing materials shall be wetted as per item 10.5.3 above and maintained in a wet condition until the bag is sealed for final disposal.

10.6.4 All other work practices as outlined in Section 10.5 are to be followed as directed.

10.7 Asbestos Work for Greater than Maintenance Jobs
10.7.1 Only certified Kansas Class I or Class II asbestos workers shall be allowed in the work area where asbestos abatement is being performed. An appropriate danger sign shall be prominently posted at all approaches into the area until the operation and cleanup is completed (K.A.R. 28-50-1-e).

10.7.2 Three ante rooms attaching to the work area.

10.7.2.1 Clean Room – large enough to house all clean, non-contaminated supplies and changing room for personnel.

10.7.2.2 Shower Room – Self-contained shower with hot and cold running water, drain, and adequate soap for washing.

10.7.2.3 Equipment Room – large enough to house all contaminated equipment, clothing waste, and changing room for personnel.

10.7.2.4 These ante rooms must have one layer of 4 mil thick plastic sheeting covering their frames and three layers plastic sheeting acting as entry doors before, between, and after the rooms.

10.7.3 A HEPA air filtering device shall be added to the system to effectively create a negative air pressure in the work area. The exhaust of the HEPA air filtering device shall be vented to outside the building. All air passing to the outside must first pass through a HEPA filter. The HEPA air filtering unit may be placed inside or outside the work area.

10.7.4 All equipment and furniture must be cleaned using wet techniques or a High Efficiency Particulate Air (HEPA) filtered vacuum and removed from the work area, if possible. All surfaces not being abated and non-moveable equipment or furniture must be cleaned using wet techniques or a HEPA vacuum.

10.7.5 All surfaces not on the asbestos abatement schedule in the work site shall be covered with one layer of four mil thick plastic sheeting on the walls and two layers of six mil thick plastic sheeting on the floor. The plastic sheeting shall remain in place until cleanup.

10.7.6 The work area will only be entered and exited via the ante rooms. Respirators must be worn while inside the work area, the equipment room, and the shower room. There will be no eating, drinking, smoking, or using smokeless tobacco once in the ante rooms and the work area.

10.7.7 The asbestos material to be abated must be wetted with a water solution containing an effective wetting agent prior to being cut, scrapped, removed, or otherwise handled.

10.7.8 Any asbestos material left exposed after the job is completed, and surfaces once covered by asbestos shall be covered and sealed with a pigmented sealant.

10.7.9 When the job is completed, the first layer of plastic sheeting must be cleaned by wet cleaning the surfaces and/or HEPA vacuum or completely removed.

10.7.10 After the plastic sheeting has been removed, all previously covered surfaces must be cleaned by wet cleaning or by HEPA
10.7.11 Not less than 24 hours after completing the above step, an air stream from a high speed leaf blower shall be swept across all cleaned surfaces for a minimum of five minutes per 1,000 square feet of area. Fan(s) must be operated in the area during the next 24 hours to maintain air currents in the work space.

10.7.12 After 24 hours, a sample of air must be taken using standard methods for asbestos air monitoring. This sample will be considered the clearance sample.

10.7.12.1 Members of the Division of Public Safety or their designee will enter the work area, inspect the area for asbestos contamination, and take the sample.

10.7.12.2 The individual assigned the task must be adequately trained to inspect the area, take the sample, and must at least be a Class I asbestos worker.

10.7.12.3 Air samples will be collected using a high air flow sampling pump. At least 2,000 liters of air will be sampled for clearance sampling.

10.7.13 The work area will be considered clean only if the clearance sample has a fiber concentration of less than 0.009 fibers/cm³ or none detected (ND). If the clearance sample is greater than 0.009 fibers/cm³, the work area must be re-cleaned or additional air samples taken, whichever the Division of Public Safety deems necessary.

10.7.14 All asbestos-containing materials that are removed or cleaned from a surface shall be maintained in a wet condition and placed in a sealed container for disposal in accordance with K.A.R. 28-50-14. This includes the plastic sheeting used during the job and all contaminated disposable supplies.

10.8 Work Practices for Nonfriable Asbestos

10.8.1 Safe work practices must be followed in any job requiring the handling of nonfriable asbestos. To protect the public, limit access to only essential personnel.

10.8.2 Each nonfriable asbestos job must be handled as a case-by-case situation and must therefore request approval by the Division of Public Safety prior to the start of the job. More stringent worker practices in the situation of ‘about to become friable’ material or more restricted access to the public may be required.

10.8.3 The nonfriable asbestos should be removed using hand operations and completely wetting down the area. The use of mechanical chipping devices to remove nonfriable asbestos materials is not recommended for all situations. Besides wetting down the area, the materials should be constantly misted with water during removal and disposal into waste containers. The waste should be collected and disposed as nonfriable asbestos in the sanitary landfill.
10.8.4 As a minimum, all workers on the project must attend a 90-minute training session on asbestos safety. This must be arranged prior to the start of work.

10.9 Disposal of Friable Asbestos Materials

10.9.1 All friable asbestos materials shall be placed in tightly sealed containers in a wet condition before they are removed from the work area. Waste containers must be double bagged in not less than 6 mil thick plastic bags. Plastic bags may be placed into fiber or metal containers with airtight fitting lids which can be fastened firmly in position.

10.9.2 The exterior surface of each container shall be cleaned free of all visible residue. An asbestos caution label shall be securely attached to each container before its removal from the work area.

10.9.3 The material shall be transported to the landfill under permit number 94-587. This permit is for use by Kansas State University employees only and is not to be used by outside contractors. Asbestos waste must be completely sealed during transportation to the landfill to prevent asbestos fiber loss. The proper Department of Transportation (DOT) labeling and marking must be affixed to each container of asbestos waste.

10.9.4 Waste water from cleanup of asbestos removal projects shall be mixed with the solid waste and disposed with the asbestos. Waste water from decontamination showers and final cleanup of equipment may be disposed of in public sewer systems by discharge into the plumbing system. The wastewater shall be free of any material that is likely to cause stoppage in the plumbing or sewer systems.

10.9.5 Discharge of other waste water not identified in item 10.9.4 above from asbestos related projects must have the approval of KDHE.

10.10 Respirator Protection Program

10.10.1 A written, standard-operating procedure is required by the Worker Protection Regulation, Title 40 Code of Federal Regulations (CFR) 763, subpart G, to provide a document which can be used to administer an effective respiratory protection program, and to provide the information, training, and equipment necessary for proper respiratory protection for asbestos removal.

10.10.1.1 Each Kansas State University department is responsible for the establishment and maintenance of the KSU respiratory program.

10.10.1.2 The Division of Public Safety has overall University responsibility for the program and has authority to make the technical and administrative decisions necessary for the continued success of the program.

10.10.1.3 Each employee shall use only respirators issued or approved by the University in accordance with the training received; the employee shall guard against damage to the respirators and to report any malfunction to their supervisors.

10.10.2 Selection and Use of Respirators for Asbestos Work
10.10.2.1 All available respirators shall be approved by NIOSH for protection against airborne asbestos.

10.10.2.2 The selection of respirators depends upon the airborne concentration of asbestos fibers. The minimum levels of respiratory protection are given below:

<table>
<thead>
<tr>
<th>Respirator Type</th>
<th>Maximum Asbestos Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half-Mask, Air-Purifying</td>
<td>2.0 Fibers/cc</td>
</tr>
<tr>
<td>Full-Face, Air Purifying</td>
<td>2.0 Fibers/cc</td>
</tr>
<tr>
<td>Powered-Air Purifying or continuous flow airline</td>
<td>20.0 Fibers/cc</td>
</tr>
<tr>
<td>Full-face Pressure on Demand Airline</td>
<td>200.0 Fibers/cc</td>
</tr>
<tr>
<td>Full-face Continuous-flow, supplied air equipped with auxiliary Self Contained Breathing Apparatus (SCBA)</td>
<td>Greater than 200.0 Fibers/cc or unknown concentration</td>
</tr>
</tbody>
</table>

* Respiration protection factor using a Qualitative Fit Test based on a Time Weighted Average (TWA)

10.10.2.3 Respirators meeting the above minimum protection requirements are required. Respirators with higher levels of protection may be used.

10.10.2.4 Adequate respiratory protection shall be worn during all asbestos related jobs including:

10.10.2.4.1 all pre-removal activities when the possibility of exposure to airborne asbestos fibers exists;

10.10.2.4.2 all removal activities;

10.10.2.4.3 all clean-up, decontamination, and disposal activities, until the final clearance level has been met;

10.10.2.4.4 disposal at the landfill to avoid exposure if the potential for an asbestos container rupture exists.

10.10.3 Procedures for Wearing Respirators for Asbestos Work.

10.10.3.1 Air-Purifying Respirators.

10.10.3.1.1 Only a clean, sanitized, and inspected respirator shall be worn.

10.10.3.1.2 The respirator shall be properly donned in the...
Clean Area, prior to putting on disposable hoods or any other articles worn on the head or neck.

10.10.3.1.3 Prior to leaving the Clean Area, a positive and negative pressure check shall be performed. If successful, any remaining clothing and equipment can be donned, and the worker can proceed to the duties. If not successful, the worker will contact the job supervisor. A qualitative fit test may be required at any time.

10.10.3.1.4 Each time the worker exits the work area, the respirator is worn into the shower, and the respirator is thoroughly soaked before it is removed.

10.10.3.1.5 The respirator is then removed and the filters placed in the labeled receptacle.

10.10.3.1.6 Any visible contamination is washed from the respirator, and the respirator is placed in the labeled receptacle.

10.10.3.1.7 After removing the respirator, the worker showers and proceeds to the Clean Area.

10.10.3.2 Powered-Air Purifying Respirators

10.10.3.2.1 Only a clean and inspected respirator shall be worn. If shared use, the respirator shall also be sanitized before being worn.

10.10.3.2.2 The respirator shall be properly donned in the Clean Area, prior to putting on disposable hoods or any other articles worn on the head or neck.

10.10.3.2.3 Prior to leaving the Clean Area, a fit test shall be performed. If successful, any remaining clothing and equipment can be donned, and the worker can proceed to the duties. If not successful, the worker will check the respirator, re-don the device, and again perform a negative or positive pressure check. If successful, the worker will don any remaining clothing and equipment and proceed with the duties. If the check is still unsuccessful, an alternative respirator should be worn.

10.10.3.2.4 Each time the worker exits the work area, the battery pack is carefully held while the worker removes disposable clothing in the Equipment Room.

10.10.3.2.5 The worker then shuts off the battery pack and places it into the designated plastic bag. The battery pack is still connected to the respirator. Clean air is still...
being supplied to the worker, but the respirator is now a negative-pressure device.

10.10.3.2.6 The worker proceeds into the shower and carefully holds closed the plastic bag at the point where the breathing tube connects to the battery pack.

10.10.3.2.7 The worker then soaks the respirator and exposed breathing tube.

10.10.3.2.8 After the exposed respirator parts are soaked, the respirator is removed, and the breathing tube is carefully disconnected from the battery pack, while holding the top shut.

10.10.3.2.9 The battery pack is secured with the closure provided and placed in the labeled receptacle.

10.10.3.2.10 Any visible contamination is washed from the respirator, and the respirator is then placed in the labeled receptacle.

10.10.3.2.11 After removing the respirator, the worker showers and proceeds to the Clean Area.

10.10.3.3 Airline Respirators

10.10.3.3.1 Only a clean, sanitized and inspected respirator shall be worn.

10.10.3.3.2 The respirator shall be properly donned in the Clean Area, prior to putting on disposable hoods or any other articles worn on the head or neck.

10.10.3.3.3 Prior to leaving the Clean Area, the airline will be connected to the respirator.

10.10.3.3.4 Each time the worker exits the work area, the respirator remains on while the worker removes disposable clothing in the Equipment Room.

10.10.3.3.5 The respirator is worn into the shower, and thoroughly soaked before it is removed.

10.10.3.3.6 All visible contamination is washed from the device, the airline is disconnected, and the respirator is placed in the labeled receptacle.

10.10.3.3.7 After removing the respirator, the worker showers and proceeds to the Clean Area.

10.10.4 Respirator Limitations

10.10.4.1 Air-purifying respirators and Powered-Air Purifying
Respirators (PAPR) are to be used only in atmospheres that are not oxygen-deficient, atmospheres that are not Immediately Dangerous to Life or Health (IDLH), and atmospheres that do not exceed the protection factors listed in paragraph 10.10.2.2 above.

10.10.4.2 Airline respirators are to be used only in atmospheres that are not IDLH.

10.10.5 Donning Air-Purifying Respirators:

10.10.5.1 Check to ensure that all required parts are present and intact.

10.10.5.2 Check to ensure that the device is clean.

10.10.5.3 Place the device over the face by first fitting the chin into the respirator and pulling the facepiece to the face.

10.10.5.4 Position the headbands around the crown of the head and the back of the neck.

10.10.5.5 Adjust the headbands, beginning with the lowest ones, until a tight, but comfortable fit is obtained.

10.10.5.6 Perform a negative or positive pressure check. Each time a respirator is donned, a negative or positive pressure check is done by the wearer:

10.10.5.6.1 Negative check – Place the palms of the hands over each filter to seal off the inhalation valves. Inhale slightly to create a negative pressure inside the facepiece. If no air escapes, proceed with the job duties. If air escapes, readjust the respirator and check again.

10.10.5.6.2 Positive check – Place the palm of the hand or the thumb over the exhalation valve cover and press lightly. Exhale slightly to create a positive pressure inside the facepiece. If no air escapes, proceed with the job duties. If air escapes, readjust the respirator and check again.

10.10.6 Donning Powered-Air Purifying Respirators:

10.10.6.1 Check to ensure that all required parts are present and intact.

10.10.6.2 Check to ensure that the device is clean.

10.10.6.3 Place the device over the face by first fitting the chin into the respirator and pulling the facepiece to the face.

10.10.6.4 Position the headbands around the crown of the head and the back of the neck.

10.10.6.5 Adjust the headbands, beginning with the lowest ones,
until a tight, but comfortable fit is obtained.

10.10.6.6 Perform a fit test. Each time respirator is donned a fit test is done by the wearer. The palm of the hand is placed over the end of the breathing tube, and the wearer inhales slightly, creating negative pressure inside the facepiece. If no air escapes, proceed with the job duties. If air escapes, readjust the respirator and check again.

10.10.6.7 The breathing tube is then connected to a fully-charged battery pack, and the back is fastened to the small of the back.

10.10.7 Donning Airline Respirators:

10.10.7.1 The hood is placed over the head.

10.10.7.2 The airline is connected prior to leaving the Clean Area.

10.10.8 Donning Helmet Type Respirators:

10.10.8.1 Check to ensure all required parts are present and intact.

10.10.8.2 Check to ensure the device is clean.

10.10.8.3 Fit the filter unit and/or power pack around the waist.

10.10.8.4 After adjusting the helmet to fit snugly on the head, the helmet is placed on the head and the chin strap tightened under the chin.

10.10.8.5 The face shield is snapped down into position, with the chin protector fitting under the chin and covering any facial hair.

10.10.8.6 The power is turned on prior to leaving the clean area.

10.10.9 Respirator Fit Testing

10.10.9.1 Qualitative fit testing is conducted for air-purifying respirators.

10.10.9.2 The procedure is done prior to issuing a worker with a respirator and every six months.

10.10.9.3 Test procedure.

10.10.9.3.1 The worker dons the respirator (equipped with HEPA and/or acid/gas filters) and must successfully pass a negative or positive pressure check before proceeding.

10.10.9.3.2 The worker is allowed to wear the respirator for at least 10 minutes before beginning the test.

10.10.9.3.3 The test procedure is reviewed with the worker.

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10.10.9.3.4 Both ends of the ventilation smoke tube (stannic oxychloride) are broken.

10.10.9.3.5 A short length of tubing is attached to one end of the tube, and the other end is attached to a low flow pump set to deliver 200 cc/minute or some other air pumping device.

10.10.9.3.6 Instruct the subject to keep his or her eyes closed during the test, and the test is conducted within an enclosure.

10.10.9.3.7 Direct the stream of smoke toward the face-to-facepiece seal, beginning 12 inches away and gradually moving to within one inch of the respirator.

10.10.9.3.8 Perform the following exercises while the deal is being tested. Each exercise is performed for one minute:

(1). Normal breathing.

(2). Deep breathing (deep and regular).

(3). Turning head from side-to-side, while inhaling.

(4). Nodding head up-and-down, while inhaling.

(5). Talking. Talk aloud and slowly for several minutes or counting to 100.

(6). Jogging in place.

(7). Normal breathing.

10.10.9.3.9 If the irritant smoke produces an involuntary cough, stop the test. In this case, the respirator is either rejected, readjusted and retested, or another respirator is selected and tested.

10.10.9.3.10 Each person who passes the test is given a sensitivity check of the smoke from the same tube to determine if he or she reacts to the smoke. Failure to evoke a response voids the fit test.

10.10.10 Respirator Cleaning, Maintenance and Storage Procedures.

10.10.10.1 Cleaning:

10.10.10.1.1 Labeled receptacles, which contain the manufacturer’s recommended cleaning solution, are maintained in the shower.

10.10.10.1.2 The facepieces are removed from the receptacles and are disassembled.
10.10.10.3 All parts are washed in warm soapy water, and visible residue is removed with a brush.

10.10.10.4 The parts are rinsed in clean water and allowed to air-dry.

10.10.10.2 Inspection:

10.10.10.2.1 All parts are inspected for dirt, residue, pliability of rubber, deterioration and cracks, tears, and holes.

10.10.10.2.2 The valves are checked for holes, warpage, cracks, and dirt.

10.10.10.2.3 Check hoods, helmets, and faceshields for cracks, tears, abrasions, and distortions.

10.10.10.2.4 Check air supply for air quality, breaks or kinks in the supply hoses and detachable coupling attachments, tightness of connectors, and manufacturer’s recommendations concerning the proper setting of regulators and valves.

10.10.10.2.5 Check that couplings are compatible with other couplings used on the site.

10.10.10.2.6 Check the air purifying elements, carbon monoxide alarm, and high temperature shut-off.

10.10.10.3 Storage:

10.10.10.3.1 All cleaned and inspected respirators are stored in plastic bags in the Clean Area.

10.10.10.3.2 The devices are stored in a normal position.

10.10.10.4 Special Procedures for Airline Respirators

10.10.10.4.1 Air pumps are routinely used for airline respirators. The intake must be located in a clean, temperature controlled air source.

10.10.10.4.2 Compressed breathing air is tested weekly with a Draeger Aerotest Kit or compatible air test to insure that the following air purity standards are met:

(1). Oxygen = 19-23%

(2). Carbon Monoxide = 20 ppm

(3). Hydrocarbon = 5 mg/m3

(4). Carbon Dioxide = 1,000 ppm
10.10.10.4.3 The individual performing the tests will be technically competent.

10.10.10.4.4 The test results are recorded in the Test Log.

10.10.11 Respirator Training

10.10.11.1 Supervisor Training: Each year, supervisors must be trained in:

10.10.11.1.1 Basic respiratory protection practices;

10.10.11.1.2 Selection and use of respirators for protection from airborne asbestos fibers;

10.10.11.1.3 The nature and extent of the hazards to which workers are exposed;

10.10.11.1.4 The structure and operation of the entire respiratory protection program; and

10.10.11.1.5 The legal requirements pertinent to the use of the respirators.

10.10.11.2 Employee Training: Each year, workers must be trained in:

10.10.11.2.1 The nature and extent of the inhalation hazards of chemicals, mists, and dusts including asbestos;

10.10.11.2.2 An accurate account of what may happen if the proper device is not worn correctly;

10.10.11.2.3 An explanation of why respirators are necessary;

10.10.11.2.4 A discussion of why these devices are the proper types for the job;

10.10.11.2.5 A discussion of the capabilities and limitations of the respirators;

10.10.11.2.6 Instruction and training in actual use and frequent supervision to assure that the devices continue to be used properly;

10.10.11.2.7 An opportunity to: handle the respirator, have the respirator properly fitted, test the face-facepiece seal, wear the device in normal air for a long familiarity period, and wear the respirator in a test atmosphere.
10.11 References


KANSAS STATE UNIVERSITY
ASBESTOS MAINTENANCE WORK REPORT
DATE ______________________
PROJECT DATE _____________________________     TIME _______________ 
PROJECT DESCRIPTION:
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
BUILDING AND ROOM
____________________________________________________________________
EMERGENCY PROJECT YES _______ NO _______
WORKER’S NAME:
____________________________________________________________________
SUPERVISOR’S NAME:
____________________________________________________________________
REMARKS:
____________________________________________________________________

Public Safety, April 1, 1990
INITIAL MEDICAL QUESTIONNAIRE

1. NAME___________________________________________________________
2. SSN_____________________________________________________________
4. PRESENT JOB TITLE______________________________________________
5. DEPARTMENT____________________________________________________
6 & 7. BUILDING____________________________________________________
Kansas State University, Manhattan, Kansas 66506
8. PHONE (785) 532-____________________________________________________
9. INTERVIEWER___________________________________________________
10. DATE__________________________________________________________
11. Date Of Birth (Month, Day, Year)_________________________________
12. Place of Birth____________________________________________________

OCCUPATIONAL HISTORY:
17A. Have you ever worked full time (30 hours per week or more) for 6 months or more?
   Yes _______ No _______

IF YES TO 17A:
17B. Have you ever worked for a year or more in any dusty job?
   Yes _______ No _______ Does not apply _______
   Specify job/industry_________________________________________________
   Total Years Worked__________________________________________________
   Was dust exposure:   Mild _______   Moderate _______   Severe _______

17C. Have you ever been exposed to gas or chemical fumes in your work?
   Yes _______ No _______
   Specify job/industry_________________________________________________
   Total Years Worked__________________________________________________
   Was exposure:   Mild _______   Moderate _______   Severe _______

17D. What has been your usual occupation or job – the one you have worked at the
   longest?
   1. Job/occupation____________________________________________________
   2. Number of years employed in this occupation________________________
   3. Position/job title__________________________________________________
   4. Business, field or industry_________________________________________

(Record on lines the years you have worked in any of these industries, e.g. 1960-1969)

17 E-J. Have you ever worked:
   E. In a mine?   Yes _______ No _______
   F. In a quarry? Yes _______ No _______
   G. In a foundry? Yes _______ No _______
   H. In a pottery? Yes _______ No _______
   I. In a cotton, flax or hemp mill? Yes _______ No _______
   J. With asbestos?Yes _______ No _______

18. PAST MEDICAL HISTORY
18A. Do you consider yourself to be in good health?   Yes _______ No _______
   If ‘NO’ state reason_________________________________________________

18B. Have you any defect of vision?   Yes _______ No _______

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If ‘YES’ state nature of defect ________________________________________

18C. Have you any hearing defect? Yes _____ No ______
If ‘YES’ state nature of defect ________________________________________

18D. Are you suffering from or have you ever suffered from:
   a. Epilepsy (or fits, seizures, convulsions)? Yes _____ No ______
   b. Rheumatic fever? Yes _____ No ______
   c. Kidney disease? Yes _____ No ______
   d. Bladder disease? Yes _____ No ______
   e. Diabetes? Yes _____ No ______
   f. Jaundice? Yes _____ No ______

19. CHEST COLDs AND CHEST ILLNESSES
19A. If you get a cold, does it usually go to your chest? (Usually means more than ½ the time) Yes _____ No ______ Don’t get colds ______

20A. During the past 3 years, have you had any illnesses that have kept you off work, indoors at home, or in bed? Yes _____ No ______

IF YES TO 20A:
20B. Did you produce phlegm with any of these chest illnesses? Yes _____ No ______ Does Not Apply ______

20C. In the last 3 years, how many such illnesses with (increased) phlegm did you have which lasted a week or more? Number of illnesses ______
No such illness ______

21. Did you have any lung trouble before the age of 16? Yes _____ No ______

22. Have you ever had any of the following?
   1A. Attacks of bronchitis? Yes _____ No ______
      IF YES TO 1A:
      B. Was it confirmed by a doctor? Yes _____ No ______
      C. At what age was your first attack? Age in Years ______ Does Not Apply ______
   2A. Pneumonia? (include bronchopneumonia)? Yes _____ No ______
      IF YES TO 2A:
      B. Was it confirmed by a doctor? Yes _____ No ______ Does Not Apply ______
      C. At what age did you first have it? Age in Years ______ Does Not Apply ______
   3A. Hay Fever? Yes _____ No ______
      IF YES TO 3A:
      B. Was it confirmed by a doctor? Yes _____ No ______ Does Not Apply ______
      C. At what age did it start? Age in Years ______ Does Not Apply ______

23A. Have you ever had chronic bronchitis? Yes _____ No ______
IF YES TO 23A:
   B. Do you still have it? Yes _____ No ______ Does Not Apply ______
   C. Was it confirmed by a doctor? Yes _____ No ______ Does Not Apply ______
   D. At what age did it start? Age in Years ______ Does Not Apply ______

24A. Have you ever had emphysema? Yes _____ No ______
IF YES TO 24A:
   B. Do you still have it?   Yes _______   No _______   Does Not Apply_______
   C. Was it confirmed by a doctor?   Yes _______ No _______  
      Does Not Apply _______  
   D. At what age did it start?  Age in Years _______ Does Not Apply _______

25A. Have you ever had asthma?   Yes _______   No _______
IF YES TO 25A:
   B. Do you still have it?   Yes _______   No _______  Does Not Apply _______
   C. Was it confirmed by a doctor? Yes _______   No _______  
      Does Not Apply _______  
   D. At what age did it start?  Age in Years _______ Does Not Apply _______
   E. If you no longer have it, at what age did it stop?  
      Age stopped _______ Does Not Apply _______

26. Have you ever had:
   A. Any other chest illness? Yes _______   No _______  
      If yes, please specify _______________________________________________
   B. Any chest operations?   Yes _______   No _______  
      If yes, please specify _______________________________________________

27A. Has a doctor ever told you that you had heart trouble?   Yes _______   No _______
IF YES TO 27A:
   B. Have you ever had treatment for heart trouble in the past 10 years?  
      Yes _______   No _______  

28A. Has a doctor ever told you that you had high blood pressure?  Yes _______
   No _______
IF YES TO 28A:
   B. Have you had any treatment for high blood pressure (hypertension) in the past  
      10 years? Yes _______   No _______   Does Not Apply _______

29. When did you last have your chest X-rayed? (year) _________________________

30  Where did you last have your chest X-rayed? (if known) _____________________
   What was the outcome? __________________________________________________

FAMILY HISTORY
31. Were either of your natural parents ever told by a doctor that they had a chronic lung condition such as 
   (circle correct answer):
   A. Chronic Bronchitis? Yes ___  No ___  Don’t Know ___ (Father or Mother)  
   B. Emphysema? Yes ___  No ___  Don’t Know ___ (Father or Mother)  
   C. Asthma? Yes ___  No ___  Don’t Know ___ (Father or Mother)  
   D. Lung Cancer? Yes ___  No ___  Don’t Know ___ (Father or Mother)  
   E. Other Chest Conditions? Yes ___  No ___  Don’t Know ___ (Father or 
      Mother)  
   F. Is parent currently alive? Yes ___  No ___  Don’t Know ___ (Father or 
      Mother)  
   G. Please specify:
      Father, age if living _____ Age at death _____  Don’t know _____
      Mother, age if living _____ Age at death _____  Don’t know _____
   H. Please specify cause of death

COUGH
32A. Do you usually have a cough? (Count a cough with first smoke or on first going out of doors. Exclude clearing of throat.) [If no, skip to question 32C].

   Yes _____   No _____

B. Do you usually cough as much as 4 to 6 times a day 4 or more days out of the week?

   Yes _____   No _____

C. Do you usually cough at all on getting up or first thing in the morning?

   Yes _____   No _____

D. Do you usually cough at all during the rest of the day or at night?

   Yes _____   No _____

IF YES TO ANY OF ABOVE (32A, B, C, OR D) ANSWER THE FOLLOWING. IF NO TO ALL, CHECK DOES NOT APPLY AND SKIP TO 34A.

E. Do you usually cough like this on most days for 3 consecutive months or more during the year?  Yes _____  No _____

F. For how many years have you had the cough?

   Number of Years _____   Does Not Apply _____

33A. Do you usually bring up phlegm from your chest? (Count phlegm with the first smoke or on first going out of doors. Exclude phlegm from the nose. Count swallowed phlegm.) Yes _____  No _____

   Does Not Apply _____

(IF NO SKIP TO 33C)

B. Do you usually bring up phlegm like this as much as twice a day 4 or more days out of the week?

   Yes _____   No _____   Does Not Apply _____

C. Do you usually bring up phlegm at all on getting up or first thing in the morning?

   Yes _____   No _____   Does Not Apply _____

D. Do you usually bring up phlegm at all during the rest of the day or at night?

   Yes _____   No _____   Does Not Apply _____

IF YES TO ANY OF THE ABOVE (33A, B, D, OR D), ANSWER THE FOLLOWING; IF NO TO ALL, CHECK DOES NOT APPLY AND SKIP TO 34A.

E. Do you bring up phlegm like this on most days for 3 consecutive months or more during the year?  Yes _____  No _____

F. For how many years have you had trouble with phlegm?

   Number of years _____   Does Not Apply _____

EPISODES OF COUGH AND PHLEGM

34A. Have you had periods or episodes of (increased*) cough and phlegm lasting for 3 weeks or more each year?  Yes _____  No _____

   * (For persons who usually have cough and/or phlegm)

IF YES TO 34A

B. For how long have you had at least 1 such episode per year?

   Number of Years _____   Does Not Apply _____

WHEEZING

35A. Does your chest ever sound wheezy or whistling?

1. When you have a cold? Yes _____  No _____

2. Occasionally apart from colds?  Yes _____  No _____

3. Most days or nights?  Yes _____  No _____

IF YES TO 1, 2, OR 3 IN 35A

B. For how many years has this been present?

   Number of Years _____   Does Not Apply _____
36A. Have you ever had an attack of wheezing that has made you feel short of breath?
   Yes _____   No _____

IF YES TO 36A
B. How old were you when you had your first such attack?
   Age in Years _____   Does Not Apply _____
C. Have you had 2 or more such episodes?  Yes _____   No _____
   Does Not Apply _____
D. Have you ever required medicine or treatment for the(se) attack(s)?
   Yes _____   No _____   Does Not Apply _____

BREATHELESSNESS
37. If disabled from walking by any condition other than heart or lung disease, please describe and proceed
to question 39A.
   Nature of condition(s) ____________________________________________
   ___________________________________________________________________

38A. Are you troubled by shortness of breath when hurrying on the level or walking up a short hill?
   Yes _____   No _____

B. Do you have to walk slower than people at your age on the level because of breathlessness?  Yes
   _____   No _____   Does Not Apply _____
C. Do you ever have to stop for breath when walking at your own pace on the level?
   Yes _____   No _____   Does Not Apply _____
D. Do you ever have to stop for breath when walking at your own pace on the level?
   Yes _____   No _____   Does Not Apply _____
E. Are you too breathless to leave the house or breathless on dressing or climbing one flight of stairs?
   Yes _____   No _____   Does Not Apply _____

TOBACCO SMOKING
39A. Have you ever smoked cigarettes?  (No means less than 20 packs of cigarettes or 12 oz. of tobacco in
   a lifetime or less than 1 cigarette a day for a year.)
   Yes _____   No _____

IF YES TO 39A
B. Do you now smoke cigarettes (as of one month ago)?
   Yes _____   No _____   Does Not Apply _____
C. How old were you when you first started regular cigarette smoking?
   Yes _____   No _____   Does Not Apply _____
D. If you have stopped smoking cigarettes completely, how old were you when you stopped?  Age
   stopped _____   Check if still smoking _____
   Does Not Apply _____
E. How many cigarettes do you smoke per day now?
   Cigarettes per day _____   Does Not Apply _____
F. On the average of the entire time you smoked, how many cigarettes did you smoke per day?
   Cigarettes per day _____   Does Not Apply _____
G. Do or did you inhale the cigarette smoke?
   Does Not Apply _____
Not at all _____ Slightly _____ Moderately _____ Deeply _____

40A. Have you ever smoked a pipe regularly? (Yes means more than 12 oz. of tobacco in a lifetime.) Yes _____ No _____

IF YES TO 40A:
FOR PERSONS WHO HAVE EVER SMOKED A PIPE
B1. How old were you when you started to smoke a pipe regularly? Age _____
2. If you have stopped smoking a pipe completely, how old were you when you stopped? Age stopped _____ Check if still smoking pipe _____ Does Not Apply _____

C. On the average over the entire time you smoked a pipe, how much pipe tobacco did you smoke per week? _____ oz. per week (a standard pouch of tobacco contains 1 ½ oz.)

D. How much pipe tobacco are you smoking now? _____ oz. per week
Not currently smoking a pipe _____

E. Do you or did you inhale the pipe smoke? Never smoked _____ Not at all _____ Slightly _____ Moderately _____ Deeply _____

41A. Have you ever smoked cigars regularly? (Yes means more than 1 cigar a week for a year) Yes _____ No _____

IF YES TO 41A:
FOR PERSONS WHO HAVE EVER SMOKED CIGARS
B1. How old were you when you started to smoke a cigar regularly? Age _____
2. If you have stopped smoking cigars completely, how old were you when you stopped? Age stopped _____ Check if still smoking cigars _____ Does Not Apply _____

C. On the average over the entire time you smoked cigars, how many cigars did you smoke per week? Cigars per week _____ Does Not Apply _____

D. How many cigars are you smoking per week now? Cigars per week _____ Check if not smoking cigars currently _____

E. Do you or did you inhale the cigar smoke? Never smoked _____ Not at all _____ Slightly _____ Moderately _____ Deeply _____

Signature _______________________________________ Date ___________________

Mandatory medical questionnaire as modified from the Federal Register/Vol. 51, No. 119/Friday, June 20, 1986/Rules and Regulations. Questions regarding sex, marital status, or race have been removed from the questionnaire.
Division of Public Safety, May 1, 1994
PERIODIC MEDICAL QUESTIONNAIRE

1. NAME ______________________________________________________________

2. SSN ________________________________________________________________

4. PRESENT JOB TITLE _________________________________________________

5. DEPARTMENT ______________________________________________________

6 & 7. BUILDING ______________________________________________________

Kansas State University, Manhattan, Kansas 66506

8. PHONE (785) 532- _________________

9. INTERVIEWER ________________________________________

10. DATE _____________________________________

12. OCCUPATIONAL HISTORY

12A. In the past year did you work full time (30 hours per week or more) for 6 months or more? Yes _____ No _____

IF YES TO 12A:

12B. In the past year, did you work in a dusty job? Yes _____ No _____

Does Not Apply _____

12C. Was dust exposure: Mild _____ Moderate _____ Severe _____

12D. In the past year, were you exposed to gas or chemical fumes in your work? Yes _____ No _____

12E. Was exposure: Mild _____ Moderate _____ Severe _____

12F. In the past year, what was your:

Job/Occupation? ________________________________________

Position/Job title? _______________________________________

13. RECENT MEDICAL HISTORY

13A. Do you consider yourself to be in good health? Yes _____ No _____

If NO, state reason ______________________________________________________
________________________________________________________________________

13B. In the past year, have you developed:

Epilepsy? Yes _____ No _____

Rheumatic fever? Yes _____ No _____

Kidney disease? Yes _____ No _____

Bladder disease? Yes _____ No _____

Diabetes? Yes _____ No _____

Jaundice? Yes _____ No _____

Cancer? Yes _____ No _____

14. CHEST Colds AND CHEST ILLNESSES

14A. If you get a cold, does it usually go to your chest (usually means more than ½ the time?)

Yes _____ No _____ Don’t get colds _____

15A. During the past year, have you had any chest illnesses that have kept you off work, indoors at home, or in bed? Yes _____ No _____ Does Not Apply _____

IF YES TO 15A:

15B. Did you produce phlegm with any of these chest illnesses?
15C. In the past year, how many such illnesses with (increased) phlegm did you have which lasted a week or more? Number of illnesses _____  No such illnesses _____

16. RESPIRATORY SYSTEM
In the past year have you had (comment further on positive answers):

a. Asthma Yes _____ No _____
b. Bronchitis Yes _____ No _____
c. Hay fever Yes _____ No _____
d. Other Allergies Yes _____ No _____
e. Pneumonia Yes _____ No _____
f. Tuberculosis Yes _____ No _____
g. Chest Surgery Yes _____ No _____
h. Other Lung Problems Yes _____ No _____
i. Heart Disease Yes _____ No _____
Do you have (comment further on positive answers):

k. Frequent Colds Yes _____ No _____
l. Chronic Cough Yes _____ No _____
m. Shortness of breath when walking or climbing one flight of stairs Yes _____ No _____
Do you (comment further on positive answers):

n. Wheeze Yes _____ No _____
o. Cough up phlegm Yes _____ No _____
p. Smoke cigarettes Yes _____ No _____
Packs per day _____ How many years _____
Comment Further on Positive Answers:

Date ________________ Signature ______________________________________

Mandatory medical questionnaire as modified from the Federal Register/Vol. 51, No. 119/Friday, June 20, 1986/Rules and Regulations. Questions regarding sex, marital status, or race have been removed from the questionnaire.
Division of Public Safety, May 1, 1994
TO: Vickie DeWitt  
FR: Steven J. Galitzer  
RE: Vinyl Asbestos Floor Tile and Mastic  

After careful consideration, I offer the following in response to your question about what to do about asbestos containing floor mastic. The floor mastic and the vinyl asbestos tiles (VAT) are considered to be non-friable asbestos containing material. They therefore offer no great risk to human life unless they are reduced to a powder. If the VAT is removed and the mastic is left in place, there is even a lesser risk. This is true primarily since the mastic is such a thin layer. If the bare underlayment is to be left and not covered up, then the mastic should be removed. If the underlayment will be covered with another floor, tile, carpet, or some other permanent covering, then there seems to be little reason to remove the non-friable mastic. Even if the floor will be drilled through, with the VAT removed, there is little evidence that the concentration of fibers released to the air will be greater than 0.01 fibers per cubic centimeter. So, to answer your question, I see no reason to remove the mastic in preparation for a new floor. Furthermore, I see little reason to remove the VAT in preparation for carpeting.

cc: M. Warren
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