Appendix C

Asbestos Fact Sheet
Clemson University
Asbestos Fact Sheet

What is Asbestos?
Asbestos is a natural occurring fibrous mineral – a rock. A rock composed of long strings of fiber; a natural “rock wool”. It was used in numerous building materials and vehicle products for its strength and ability to resist heat and corrosion before its dangerous health effects were discovered. Individual asbestos fibers cannot be seen by the naked eye.

What is the hazard?
When left intact and undisturbed, asbestos containing materials (ACM) pose no health risk to occupants. A potential hazard exists when asbestos fibers are released into the air during activities that disturb asbestos-containing materials. The asbestos fibers can then be inhaled without knowing and trapped in the lungs. If swallowed, they can become embedded into the digestive tract as well. Asbestos is a known human carcinogen and can cause chronic lung disease as well as lung and other cancers. Symptoms and/or cancer may take many years to develop following exposure.

There are three diseases typically associated with long term inhaled asbestos exposure:

Asbestosis is a serious, chronic, non-cancerous lung disease. Inhaled fibers harm lung tissues, which causes scarring. Symptoms include shortness of breath and a dry crackling sound in the lungs while inhaling.

Lung cancer causes the largest number of deaths from asbestos exposure. The most common symptoms of lung cancer are coughing and a change in breathing. Other symptoms include shortness of breath, persistent chest pains, hoarseness, and anemia.

Mesothelioma is a rare form of cancer that most often occurs in the thin membrane lining of the lungs, chest, abdomen, and (rarely) heart. Virtually all cases of mesothelioma are fatal and linked with asbestos exposure.

Exposure to asbestos alone is not the single determining factor as to whether or not an individual will contract an asbestos-related illness or disease. The levels of asbestos in air that may result in lung disease depend on several factors other factors which must be considered including: the dose (how much), the duration (how long), the fiber type (mineral form and size distribution), and type of contact with the ACM. You must also consider the other chemicals you’re exposed to and your age, sex, diet, family traits, lifestyle (including whether you smoke tobacco), and general state of health. If you are exposed to asbestos and you smoke, you can be up to 90 times more likely to develop lung cancer than non-smokers who are not exposed to asbestos.

A "friable" ACM can be easily crushed, pulverized or reduced to powder by hand pressure (materials such as insulation, ceiling tiles, dried out caulking). A "non-friable" ACM cannot be crushed, pulverized, or reduced to powder by hand pressure (materials such as table tops, roofing and flexible flooring). In general, the more friable the material is, the greater the potential for asbestos exposure. Just because there is ACM present does not necessarily mean that it is a health risk, but you must be careful so the materials are not accidentally disturbed.

What Products Contain Asbestos?
Asbestos may be found in many different products and places. Broadly speaking, the materials listed below are assumed to contain asbestos if they were installed before 1981:

- Pipe insulation, boiler insulation, and pipe-fitting mud and cements
- Plasters, sprayed-on materials, and textured paints on walls, ceilings, or other structural members
- Sheetrock joint compound, chalkboard/whiteboard adhesives
- Vinyl and asphalt floor tiles and floor sheeting (linoleum), as well as underlayment's, cove base, and adhesives
- Ceiling tiles and panels and associated adhesives
- Wallboard, corrugated roofs, and building siding
- Stage and welding curtains, lab bench tops, fume hood walls
- Roof shingles, felt, tar, tar paper, and flashing

Usually asbestos is mixed with other materials and may contain only a small percentage of asbestos. Depending on what the product is, the amount of asbestos in ACM may vary from 1% to 100%. Federal and state regulations require inspection or testing of suspect materials for asbestos content prior to disturbance, regardless of building age. If the material is found to contain asbestos, abatement by licensed firms will be required.

**Building materials may contain asbestos even if new.**
The use of asbestos was never completely banned in the United States. Products that are manufactured in countries such as Canada and Mexico, that have not banned the use of asbestos, are currently available for purchase in the United States, and may contain asbestos.

**Avoiding Asbestos Exposure**
**Under no circumstances are Clemson University employees allowed to perform any tasks that involve the disturbance of ACM.** If you do not know whether something contains asbestos or not, assume that it does until it is verified otherwise.

In most cases even experts cannot tell the difference between asbestos containing and non-asbestos containing forms of the same product (e.g. pipe insulation, fireproofing etc.) just by looking at it. The material must be sampled and tested to confirm whether or not it contains asbestos. Clemson University Environmental Safety department has an Environmental Consultant available to assist in determining whether a material contains asbestos, and to assess the hazards. Any removal or disturbance of asbestos must be performed by outside certified asbestos abatement contractors.

**Working Around Asbestos**
Occasionally, employees may need to work in areas where asbestos containing materials are present but are not friable, and will not be disturbed by the work activity. If there is any concern that fibers may inadvertently be released, contact Environmental Safety at 656-1806 to request an assessment.

**Floor Tiles** - Some Clemson University buildings have floor tile that contains asbestos. Regular washing, waxing, wet stripping and non-abrasive buffing of these tiles will not release asbestos fibers if done correctly.

- Do not sand asbestos-containing flooring material;
- Use only low-abrasion buffing pads;
- Operate buffers only at speeds lower than 300 rpm;
- Use wet methods;
- If asbestos-containing flooring material has sufficient finish, brushing or dry buffing is permissible.

**Damaged Asbestos Materials**
It is important to report any damaged asbestos-containing materials to Environmental Safety (656-1806) immediately. Debris from damaged asbestos must be cleaned up by a licensed asbestos abatement contractor; do not attempt to clean up or fix the problem yourself. Do not disturb the material.

**For More Information**
Contact Environmental Safety at 656-1806. There are many federal and state asbestos regulations, all with the goal of minimizing exposure to asbestos. ES has copies of these standards and the Occupational Safety and Health Administration (OSHA) standard available.