

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

I. Purpose

The University of Texas at Austin (UT) has established a set of procedures third party consulting companies must follow when conducting asbestos investigations at its facilities. These procedures assume an investigation of areas for pre-renovation planning purposes.

II. Instructions for Inspectors

Follow Texas Department of State Health Services (DSHS) minimum 3 sample rule for sampling thermal system insulation (TSI) and miscellaneous materials. Follow the AHERA 3-5-7 rule for all surfacing materials.

Follow DSHS minimum 3 sample rule for all roof and building exterior sampling.

Any questions regarding sampling should be addressed to Environmental Health and Safety (EHS).

If you are unsure if a material is a suspect asbestos-containing material (ACM), sample it.

All bulk sample collection will be conducted using the USEPA Science and Ecosystem Support Division (ESED) guidance document, SESDGUID-104-R1 protocol.

Asbestos sampling should not be conducted in occupied spaces if at all possible.

The Asbestos Inspector is required to properly remove any debris from the area around where samples are collected.

Single sample collection, splitting, and subsequent submittal as 3 discrete samples is strictly prohibited.

If samples are not collected from 3 discrete locations, please use comment section on the chain-of-custody (COC) document to provide justification.

All information on the COC should be legible to others. Common acronyms should be used on the COC. Identify acronyms used in the comments section of the COC. See COC document protocols in Appendix B.

All floor plans should be marked to indicate rooms and areas where sampling was conducted. This information should be reflected on the COC.

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

At any time EHS may observe third consulting companies to confirm that all State and Federal regulations and UT protocols are being followed.

III. Specific Material Sampling Instructions

A. Surfacing Materials:

Joint compound, if present, will be sampled on all drywall materials.

When sampling drywall, samples are to be collected at ceiling height not at floor level. Samples should be collected at a height greater than 4.0' above floor surface, unless otherwise noted on the request.

Samples should be collected in unobtrusive areas only, if possible.

When sampling plaster, make sure that the sample includes both layers for 2-coat, and all layers for 3-coat systems. Plaster samples should be inclusive of exposed surface to lathe in thickness.

When sampling textured paint on concrete masonry unit (CMU), do not scrape surface only but collect a composite sample that includes CMU.

B. Thermal System Insulation (TSI) Materials

When sheet metal clad TSI is encountered, sheet metal must be removed prior to sampling. Samples must not be collected through the sheet metal. Do not attempt to reattach straps when sampling is completed.

When foam glass is encountered, the black mastic found along the seams of the TSI is where the sample is to be collected. Assume there is mastic applied directly to pipe beneath foam glass. The inspector will verify if mastic is applied directly to the pipe.

Elbows, fittings, and lagging should all be treated as discrete materials with three samples for each material encountered.

C. Miscellaneous Materials

When sampling floor tile, ensure that there is sufficient mastic on the sample for the laboratory to analyze. Staining on the floor tile sample is not sufficient for laboratory analysis of mastic.

V. Communicating Information

Information regarding sampling collection, data analysis, and the investigation in general will only be communicated to the Environmental, Health & Safety (EHS) Department or the project manager.

Building occupants are not to be communicated with by the third party consulting company personnel. Building occupants are to be referred to the project manager for all project information.

If EHS specifies that raw data is the deliverable, then only raw data with no interpretation must be provided.

All data tables must include unit of measure if appropriate. The margin of error for all methodologies and devices used must be included in the report, as a foot note under the table unless otherwise specified by EHS.

Sample identification must be consistent in the report, floor plans, and on the chain-of-custody (COC).

V. Chain-of-Custody Documentation

The chain-of-custody procedure is intended to ensure that the sample is kept secure at all times and will stand up to the documentation requirements that may be associated with legal challenge. The COC document identifies the location, transfer, and security of the sample from collection to disposal and provides documentation that identifies each person having true possession of the sample.

The COC will be completed in sufficient detail so that individual sample identification can be directly correlated to the corresponding floor plans and the laboratory analytical results. Current room uses, designations, and colors can change and should not be the only way of identifying the sample.

1) Sample Identification

All samples collected shall have a unique identification number assigned to them so that there are multiple ways to research individual samples. The preferred method is to use the three letter building designation followed by a hyphen and then a catalog number for the sample. This would also apply to UT Systems buildings. For outlying facilities such as MSI, MCB, PRC etc. use the facility designation.

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

2) Sample Location

This should include:

Room number(s), this is dependent on whether or not the material is homogeneous throughout the area being inspected.

All floor plans should be marked to indicate rooms and areas within the rooms where sampling was conducted. This information should be reflected on the COC.

VI. Reporting

All reporting must be inclusive of raw data and laboratory analyses. Recitation of current state and federal rules and statutes will not be put in the report. Regulatory reference may be placed in an appendix. Reporting should be provided in tabular format and the information should be cross-referenced with the COC and sample analytical results.

The Asbestos Survey Report must include the following attachments to substantiate the report:

1. A chain-of-custody that provides a traceable origin and handling of all the samples,
2. A copy of the laboratory analysis sample results,
3. A diagram identifying the sampling locations,
4. Color photographs of each homogeneous application, and
5. Any other relevant data.

Reporting format must comply with Appendix D. Prior approval from EHS must be obtained for any deviation from information found in these appendices.

Recommendations will only be included in the report if EHS has provided prior approval.

VII. Resources

Asbestos Hazard Emergency Response Act (AHERA) - Sampling requirements for surfacing materials

<http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-part763-subpartE.pdf>

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

National Emission Standards for Hazardous Air Pollutants (NESHAP) - Sampling the exterior of structures

<http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=d89125c8c9e72a116a213fcae1e3745b&rgn=div5&view=text&node=40:9.0.1.1.1&idno=40#40:9.0.1.1.1.13>

Occupational Safety and Health Administration (OSHA) Standards – Safety and Health requirements

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9995

Texas Asbestos Health Protection Rules (TAHPR)

<https://www.dshs.state.tx.us/asbestos/rules.shtm>

USEPA Science and Ecosystem Support Division (ESED) guidance document, SEDGUID-104-R1 - Guidance on proper sampling techniques -

<http://www.epa.gov/region4/sesd/fbqstp/Bulk-Sampling-for-Asbestos.pdf>

APPENDIX A

SUSPECT ASBESTOS CONTAINING MATERIALS

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

APPENDIX A

The following list of building materials or replacement parts are considered suspect asbestos containing materials and include but are not limited to:

Surfacing Materials:	Miscellaneous Material:
<ul style="list-style-type: none"> - acoustical plaster; - decorative plaster/stucco; - fireproofing insulation; - joint compound; - spackling compounds; - spray applied insulation; - textured paint/coating. - Thermal System Insulation: - boiler insulation; - breaching insulation; - fireproofing; - HVAC duct insulation; - HVAC gaskets; - pipe insulation; - taping compounds (thermal); - thermal paper products; - valve packing. - Miscellaneous Material: - adhesives/mastics; - asphalt/vinyl floor tile; - base flashing; - blown in insulation; - caulking/putties; - ceiling tiles/lay-in ceiling panels; - cement insulating panels; - cement pipes; - cement wallboard/siding; - cement insulating panels; - chalkboards; - construction mastic; - cooling tower baffles or louvers; - cooling tower fill; 	<ul style="list-style-type: none"> - damp proofing - door insulation; - ductwork flexible fabric connections; - electrical panel partitions; - electrical cloth/electrical wiring insulation; - elevator, car, truck brake shoes; - elevator equipment panels; - fire blankets/curtains; - fire damper; - fire doors; - fireproofing applied to exterior of high voltage cables - flexible fabric joints (vibration isolation cloth); - floor backing; - gaskets and gasket material; - gypsum wallboard; - heating and electrical ducts; - incandescent recessed fixtures; - laboratory fume hoods (non-metallic & non-glass parts); - laboratory oven gaskets; - laboratory table tops; - laboratory thermal gloves; - packing materials; - packing or rope (penetrations through floors or walls); - reinforced roof flashing sheet; - roofing felt; - roof flashing (plastic cement for sheet metal work); - roofing paint; - roofing shingles/tiles; - vermiculite insulation inside CMU - vinyl sheet flooring/vinyl wall coverings;

APPENDIX B

GENERAL ASBESTOS INFORMATION

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

Bulk Sampling Requirements

Type of Material	Number of Samples Required
Friable Surfacing Material	
Area ≤ 1,000 sq. ft.	3
Area > 1,000 sq. ft. but ≤ 5,000 sq. ft.	5
Area > 5,000 sq. ft.	7
Thermal System Insulation (TSI)	
TSI not assumed to be ACBM	3
Patched TSI	3
Each insulated mechanical system not assumed to be ACBM where cement or plaster is used on fittings such as tees, elbows, or valves	3
Miscellaneous Materials	
Friable Miscellaneous Material not Assumed to Be ACBM	3
Non-friable Suspected ACBM not Assumed to Be ACBM	3

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

Categories of Asbestos Used by EPA, AHERA/ASHARA and OSHA

TSI	“Thermal system insulation (TSI)” means ACM applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain. “Thermal system insulation ACM” is thermal system insulation which contains more than 1% asbestos.
SURFACING (usually mixed on site at time of application)	“Surfacing material” means material that is sprayed, troweled-on or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes). “Surfacing ACM” means surfacing material which contains more than 1% asbestos. NOTE: OSHA does not classify skim coat, taping mud, floor tile mastic, stucco, leveling compound, and hard wall plasters or wall texturing as surfacing.
MISC	All other ACM, including classify taping mud, floor tile mastic, stucco, leveling compound, and hard wall plasters or wall texturing as surfacing.

NESHAPS Categories for Asbestos

Category I	Cat I Non-friable Asbestos Containing Material(ACM) refers to asbestos containing packing, gaskets, resilient floor covering, Galbestos, and asphalt roofing products containing more than 1% asbestos.
Category II	Cat II Non-friable Asbestos-Containing Material (ACM) is any material that is not Cat I that contains greater than 1% asbestos including spraycrete, gunite, and magnesite.
RACM	“Regulated Asbestos-Containing Material.” – Friable manufactured asbestos material (ACM) or a Category I non-friable ACM that has become friable OR a Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading OR Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations. RACM should be removed prior to renovation or demolition.

APPENDIX C

ASBESTOS COC EXAMPLE



Sample Collector: _____ **TAT:** **NORMAL** **PRIORITY** **EMERGENCY** **Page** _____ **of** _____

Comments: _____

Page 12 of 21

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

Exposure Assessment Algorithm

The Exposure Assessment Algorithm lists eight factors, which assist in evaluating the condition of a particular installation. Assessment and determination of health risk should be conducted by trained personnel.

(1) Condition of Material

An assessment of the condition considers the quality of the installation, adhesion of the material to the underlying substrate, deterioration, vandalism and/or damage.

(2) Water Damage

Water can dislodge, delaminate and disturb friable asbestos-containing materials that are otherwise in good condition. Water can carry fibers as a slurry to other areas where evaporation leaves a collection of fibers that can be released into the air.

(3) Exposed Surface Area

The exposed surface area of friable material affects potential fiber fallout levels and the possibility for contact and damage. Visible friable material is considered to be exposed.

Maintenance personnel frequently access the space above suspended ceilings to service or maintain electrical or communications equipment, or adjust the ventilation system. In most cases, this space is considered an exposed surface. Areas with louvers, grids or other open ceiling systems should be considered exposed.

(4) Accessibility

. If the asbestos-containing material can be reached, it is accessible and subject to accidental or intentional contact and damage. Friable material is considered accessible if it is close to heating, ventilation, lighting and plumbing systems requiring maintenance or repair.

(5) Activity and Movement

This factor combines the effects of general causes that may result in contact with, or damage to, friable material. These causes include air movement, maintenance activities, vibration (from machinery or other sources) and activity levels of students or building workers. This factor is also an indication of the potential for future exposure.

(6) Air Plenum or Direct Air Stream

Action is required by building owners if asbestos-containing materials are found in these areas.

(7) Friability

The material in question must be touched to evaluate its friability. The easier it is to crumble, the more friable the material and the greater the potential for asbestos fiber release and contamination. Sprayed asbestos material is generally more friable than most troweled materials or mechanically installed insulation.

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

(8) Asbestos Content

To calculate total asbestos content, the percentage content for each type of asbestos present in a given sample should be summed. While all asbestos-containing materials present an exposure potential, those with a high percentage of asbestos content can release more fibers.

Table 1 - Assessing exposure Risk

FACTOR	DESCRIPTION	RATING OF RISK EXPOSURE
Accessibility of Material	Accessible in high activity areas	High (H)
	Accessible in low activity areas or beyond the reach of area occupants	Medium (M)
	Enclosed	Low (L)
Condition of Material	Severely damaged	High (H)
	Mild to moderate damage	Medium (M)
	Good Condition	Low (L)
Friability of Material	Easily breaks apart	High (H)
	Mild to moderate friability	Medium (M)
	Non-friable	Low (L)

Table 2 - Determining the level of control required based on the risk exposure assessment of Table 1.

	Asbestos Not Present in Return Air Plenum		Asbestos Present in Return Air Plenum
	Less than 20 percent Asbestos Content in Material	Greater than 20 percent Asbestos Content in Material	
Immediate Control Required	2 Hs or 3 Ms	1 H or 2 Ms	Control required unless 3 Ls and less than 20 percent asbestos content in material
Control Required	1 H or 2 Ms	1 M	
No Control Required	1 M or 3Ls	3 Ls	

APPENDIX D

ASBESTOS REPORT FORMAT

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

Asbestos inspection reports shall be prepared and sent electronically to EHS for review in a single PDF file with OCR capabilities. The report is to include chain-of-custody and laboratory analytical data.

The survey report should list the results of an asbestos survey that are easy to understand. The survey report should contain an introductory summary that briefly explains what will be found in the report. Documentation such as field data sheets and photographs should appear in appendices of the report.

The report should include all of the following information.

1. Title Page

- a. Company name, building inspector name(s), report preparer name (if different from inspector), company mailing address, and company telephone number.
- b. Name, address, contact person and telephone number of UT project manager.
- c. Name (if any) and street address, city, state, zip code for structure(s) inspected.
- d. Date of inspection, and date of report preparation (if different).
 - e. Description of building status after survey, if known (Will the building be totally or partially renovated and/or demolished?)

2. Signature Page

- a. Printed name and signature of each individual involved in the inspection.
- b. Asbestos Building Inspector License number and expiration date for each individual involved in the inspection and/or preparation of the inspection report. Also include analytical laboratory licensure.

3. Executive Summary

Summary of the asbestos containing materials and what needs to be abated based on the type of activity, or renovation. Provide a separate, detailed, discussion for each building inspected if multiple buildings are included in the same report.

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

4. Table of Contents

Include title and location of all information/data included in report for easy identification and access.

5. Body of report

- a. Identify the inspector(s), the date, location, and purpose of the inspection.
- b. Identify the inspection report writer if different from the inspector.
- c. Provide a separate, detailed discussion for each building inspected including special features, if multiple buildings are included in the same report. Use the 3-letter designation for each building.
- d. For each building, identify and provide a detailed description of all exterior and interior building materials. Provide a description of building systems such as structural system, mechanical system, roofing system, non-structural systems (not inherent to building), etc.
- e. Indicate how samples locations and/or materials are labeled/identified in the building. Document sample locations and areas that were accessible during the inspection.
- f. If hidden or inaccessible areas are to be disturbed or are likely to be disturbed, provide a detailed description of the procedure used to find hidden suspect materials
- g. If third party reporting is used for any part of the evaluation, consulting company must include the evaluation information within their inspection report and annotate which information was provided by a third party. This information shall include date of sampling, provider of sampling data, and results.
- h. Provide an estimated square or linear footage for each type of suspect building material.. State the number of samples collected for each type of suspect material based on the estimated or actual square or linear footage.
- i. Discuss the type, amount (square or linear footage) and condition of all suspect material testing positive or assumed positive for asbestos.
- j. Include a written recommendation for disposition of all identified asbestos-containing materials (ACM) – ONLY IF REQUESTED BY EHS.
- k. Include a color photograph for each homogeneous application.
- l. Include building drawings or sketches that detail sample locations.

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

- m. Include building drawings or sketches that detail homogeneous application locations of asbestos-containing materials.
- n. Provide a copy of all sample collection data, chain of custody form(s), and lab analytical reports. Include special instructions regarding type of analysis requested such as PLM, point counting, or TEM.
- o. Copy of licensure for all individuals and laboratories who participated in the project, if requested by EHS.
- p. Other documents such as current copies of directives, state or federal regulations, guidance documents, or any other printed materials, if requested.

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

EXAMPLES OF REQUIRED TABLES

TABLE 1
**REGULATED ASBESTOS-CONTAINING MATERIALS (RACM) BY PLM ANALYSIS-
CATEGORIZATION OF ACM LOCATED ON-SITE**

Sample Number	Homogeneous Application	Description	Location	Approximate Quantity s.f. / l.f.	Condition	NESHAP Category	Laboratory Analytical Results
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 2
NON-ASBESTOS CONTAINING MATERIALS BY PLM

Sample Number	Homogeneous Application	Description	Location
N/A	N/A	N/A	N/A

APPENDIX D

REQUIRED ASBESTOS INVOICE INFORMATION

Asbestos Requirements for Contractors Conducting Work at The University of Texas at Austin

Invoices submitted by contractors for payment must include the following:

Exact Project Location including Building Abbreviation and Room Number

Dates of provided service

Type of service provided

UT Project Manager name

UT Work Order Number

UT Capital Project Number

UT Project Account Number