



January 20, 2021

Abatement, Waste Handling and Project Monitoring of Asbestos Loose-fill Vermiculite Type Insulation Material

Loose-fill vermiculite type insulation materials (hereby vermiculite) must be sampled and analyzed as per the Utah Asbestos Rule and DAQ's March 31, 2020 "How many samples are required of loose-fill vermiculite type insulation to prove it is not ACM" guidance document (DAQA-186-20). In situations where those samples are determined to contain >1% asbestos, this document is meant to provide guidance on how to abate and handle the vermiculite. Vermiculite with >1% asbestos is considered friable and a regulated asbestos-containing material (RACM).

The Utah Asbestos Rule states in UAC R307-801-13(10) that "regulated vermiculite shall be removed to the maximum extent possible, or by following a work practice that has been established by the director, or by an alternative work practice request as approved by the director." The wording "to the maximum extent possible" used here means that all asbestos is to be removed; much like any other asbestos abatement project. This may be feasible in certain work spaces but more often, when vermiculite is found in a CMU block wall, this may not be possible. Currently, there is not a work practice that has been established by the director and incorporated into the Utah Asbestos Rule. Therefore, when abating and handling vermiculite, the owner or operator will most likely need to submit an alternative work practice request form and project design to the DAQ for approval. This guidance document will discuss some key points that we expect to see in an alternative work practice request form and project design.

Removal Methods During Abatement

The DAQ will expect to see an alternative work practice request form and project design from a Utah certified project designer that includes specific steps for abatement of the vermiculite in a CMU block wall. The abatement work must be completed by a Utah certified asbestos contractor. It is up to the project designer to determine and describe those steps but please address the following concerns:

- How will the bulk of the vermiculite be removed from the block wall?
- How will the finer pieces of vermiculite be removed from the rough interior of each CMU block?
- How will the contractor ensure that the vermiculite is not stuck on a shelf inside the CMU block wall?
- How will the interior of the cells be decontaminated with either HEPA vacuum or wet methods?
- How will encapsulant be sprayed on the interior of the CMU cells?
- How large of a work area will be established?
- Will the contractor use outside work practices or create a negative pressure enclosure?
- An asbestos abatement/renovation notification form must be submitted to the DAQ prior to the start of the project

Waste Handling Methods During Demolition

The DAQ will expect to see an alternative work practice request form and project design from a Utah certified project designer that addresses the following concerns:

- How will the demolition contractor keep the debris wet during the demolition and waste handling procedures?
- How will the demolition contractor prevent visible particulate matter (dust)?
- A Utah certified asbestos inspector or contractor/supervisor is required to be on-site during the demolition to watch for large amounts of residual vermiculite.
- A statement that if large amounts (>NESHAP amounts of 160 square feet or 35 cubic feet) of residual vermiculite are found during the demolition, then the demolition contractor will stop work and a certified asbestos abatement contractor will return to perform additional abatement, decontamination, and encapsulation.
- A statement that all waste with possible residual vermiculite that is leaving the site must be wrapped or covered during transportation to the landfill.
- Where will the waste be disposed of (please remember the waste cannot be reused, recycled, or repurposed)?
- DAQ recommends that you contact the landfill to discuss disposal.
A demolition notification form must be submitted to the DAQ prior to the start of the project.

Area Air Sampling During the Asbestos Abatement and Demolition

The DAQ expects to see a plan for area air sampling included in the alternative work practice request form and project design. Area air sampling is required to be collected during the asbestos abatement and during the demolition. If a negative pressure enclosure is erected during abatement, then area air sampling is not required during the abatement. The DAQ has developed an area air sampling protocol to be used during the abatement and demolition. This protocol is found on the following page.

Thank you from the DAQ ATLAS team!

This document is meant to help facilitate compliance. This document and the opinions within are subject to change and may be amended in the future. Regulatory compliance is determined on a case-by-case basis.

DAQA-025-21

Loose-fill Vermiculite Alternative Work Practice Air Monitoring Protocol

The consultant will determine wind direction at the start of the project and on each additional day of the project. The consultant will set air sampling pumps in the upwind and downwind locations on each day of the project. A minimum of two additional sampling locations collected at ninety-degree angles to the upwind and downwind sampling sites and a sampling pump cassette on the demolition equipment (a total of five daily samples) must be collected. Additional sampling locations must also be collected to adequately capture visible emissions and/or dust from the abatement/renovation and demolition activities at any and all locations of the project site.

The demolition equipment sampling pump cassette will be located on the outside of the demolition equipment and on the front, articulating arm, or bucket side of the demolition equipment. The demolition equipment sample must be collected using a personal sampling pump calibrated to run at 2.0 liters per minute (LPM) +/- 0.2 LPM. The surrounding area air samples must be collected using high-volume sampling pumps calibrated to 4.0 LPM +/- 0.2 LPM. Area sampling pump cassettes shall be placed at breathing height, approximately 5 feet off the ground) and be oriented downward at approximately 45 degrees from the horizontal. Sampling pump cassettes shall be visually inspected at least every two hours or less for signs of overloading. If darkening of the filter is noted, a final calibration check will be made on the cassette and a new cassette calibrated for remaining portion of the shift.

Samples will be initially analyzed using phase contrast microscopy (PCM) and transmission electron microscopy (TEM) will be used, if necessary. All PCM samples will be sent 1-day delivery or hand carried to an accredited asbestos laboratory that is participating in a Quality Assurance Program (such as AIHA or an equivalent nationally-recognized interlaboratory comparison program) within 24-hours of sample collection on business days (defined as the time period between Monday at 12:00:00 AM to Friday at 11:59:59 PM excluding state or federal holidays). All PCM samples will be sent with requested analysis of 24-hours or less of receipt on business days by an accredited asbestos laboratory, as defined above. Electronic copies of all accredited asbestos laboratory analytical results, including chain-of-custody forms, will be sent to the Utah DAQ within 24-hours of receipt on business days.

If PCM sample fiber counts from the abatement/renovation or demolition site rise above 0.0075 fibers per cubic centimeter (f/cc), the consultant will submit all samples above 0.0075 f/cc for analysis by TEM. All TEM samples will be sent 1-day delivery or hand carried to the accredited asbestos laboratory within 48-hours of determining PCM sample analysis results above 0.0075 f/cc on business days. All samples will be sent with requested analysis of 24-hours or less of receipt by the accredited asbestos laboratory on business days. Electronic copies of all accredited asbestos laboratory results will be sent to the DAQ within 24-hours of receipt on business days.

If the first six TEM sample results are below the AHERA clearance criteria of 70 structures per square millimeter (S/mm²) based on a 1199 liter sample for a 25 mm cassette or on a 2799 liter sample for a 37 mm cassette, the consultant may propose to the DAQ raising the TEM analysis trigger level to the PCM accredited asbestos laboratory level of 0.010 f/cc. If the sample volume is less than 1199 liters, the AHERA clearance criteria of 70 S/mm² will be reduced proportionally. The AWPR applicant will submit all samples above 0.010 f/cc for

analysis by TEM through an accredited asbestos laboratory, as defined above. Air sampling results above the appropriate TEM analysis trigger level will require an immediate evaluation of engineering controls by the AWPR applicant, asbestos and/or demolition contractor, the building owner, and DAQ to discuss dust and fiber suppression options with the results of the evaluation submitted in the form of a written report to the DAQ.

A final report must be submitted to the DAQ within 20 business days after all requirements of the alternative work practice request (AWPR) have been completed. At a minimum, the final report must include all air sample accredited asbestos laboratory reports, pump calibration records, site wind and dust observations, a summary of the results of all air samples analyzed including accredited asbestos laboratory detection limits, and all other information required by the AWPR.