

Standard Interpretations / Compliance with OSHA's Asbestos Standard - Composite Bulk Samples.

• **Standard Number:** 1926.1101

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 7, 1997

MEMORANDUM FOR: GERARD RYAN
ASSISTANT REGIONAL ADMINISTRATOR
FOR TECHNICAL SUPPORT REGION VIII

FROM: STEPHEN MALLINGER, ACTING DIRECTOR
OFFICE OF HEALTH COMPLIANCE ASSISTANCE

SUBJECT: Compliance with OSHA's Asbestos Standard - Composite Bulk Samples

This is in response to your memorandum of November 5, 1996. The issues discussed are OSHA's presumptive rule, the definition of Presumed Asbestos Containing Material (PACM), and bulk sampling techniques under OSHA's Asbestos Standard (29 CFR 1926.1101).

As you are aware, building owners are responsible for locating the presence and quantity of PACM in buildings built before 1981. Technically this process does not require any special training since PACM is easily recognized. To clarify that point a closer look at the definition of PACM is necessary. PACM is thermal system insulation (TSI, such as pipe-wrap or duct insulation) and sprayed-on and troweled-on surfacing material (such as fireproofing material or acoustical material). OSHA limited the list to those asbestos-containing building materials that were installed most frequently and may present the greatest exposure hazard when the materials are disturbed.

The employer can rebut the designation of installed material as PACM by either having an inspection in accordance with AHERA or hiring an accredited inspector or a Certified Industrial Hygienist (CIH) to take bulk samples. This section of the standard, which is the only section that requires bulk sampling, does not include wallboard systems. PACM materials, specifically TSI and sprayed-on and troweled-on surfacing material are not typically multi-layered, unlike wallboard systems. Therefore, the issues you raised regarding multi-layered/composite testing do not pose a problem, nor are they in conflict with the EPA.

The important point to note is that wallboard and wallboard systems are not covered by the presumptive rule. Gaskets, siding, or roofing are likewise not covered. The example you provided in your memorandum describes the disparity between OSHA, AHERA and NESHAPS in the way wallboard systems are analyzed. First recall that building owners do not have to identify asbestos-containing wallboard systems under the presumptive rule. Other building materials such as wallboard and wallboard systems may contain asbestos but unless an employer has specific knowledge or should have known through the exercise of due diligence that these other materials contain asbestos, the standard does not compel the building owner to sample these materials.

Recall however, that the removal of wallboard systems that contain asbestos is covered by the standard as a Class II operation and the employer needs to comply with the appropriate sections of the standard. Class II operations require that the employer conduct only personal sampling, not bulk sampling. Any bulk sampling an employer performs, such as composite sampling on multilayered systems, is beyond what is required by the OSHA standard. Please bear in mind that during OSHA compliance activities it continues to remain OSHA's policy that single layer sampling is required for multilayered materials such as wallboard. When a compliance officer (CSHO) investigates a complaint alleging asbestos exposure during a renovation project where wallboards are being removed for example, any bulk samples taken by the CSHO would consist of the separate components of the wallboard. This sampling technique would accurately reveal the percentage of all parts of the wallboard system.

We hope you have found this information useful. If you have additional questions please contact Wanda Bissell of my staff at (202) 219-8036 ext. 36.

November 5, 1996

MEMORANDUM FOR: RUTH MCCULLY, DIRECTOR
HEALTH COMPLIANCE ASSISTANCE

FROM: GERARD RYAN
ASSISTANT REGIONAL ADMINISTRATOR
FOR TECHNICAL SUPPORT-VIII

SUBJECT: Potential for Legal/Compliance Problems with OSHA's
Asbestos Standards

Questions continue to be raised in Region VIII regarding the issue of OSHA policy for separate layer sampling for determination of asbestos in building materials vs. the EPA rules regarding determination of percent asbestos. We continue to hold the position that OSHA's policy has been, and will continue to be that separate layer analysis must be done if an employer chooses to rebut presumption of asbestos in building materials older than 1981. Informal discussions with area consultants have revealed that they have seen employee over exposures to asbestos when wallboard systems with a topcoat of joint compound is sanded or wallboard systems are dismantled with no precautions.

However, further discussion with Region VIII EPA representatives indicate that misunderstandings regarding various nuances of OSHA, and both the AHERA and NESHAPS EPA asbestos rules are common. For example, although AHERA does not officially define their meaning of compositing, EPA uses this term in AHERA to mean mixing samples together that were obtained separately from a homogenous area for analysis. However, NESHAPS rules actually defines compositing in their 12/19/95 Federal Register notice to mean full depth sample. NESHAPS further defines compositing as it applies to wallboard systems, depending upon whether the joint compound is applied to cover seams and nail holes, or whether it has been applied as a skim coat on top of gypsum board.

NESHAPS requires each layer of a wallboard system to be treated separately and the results reported by layer (discrete stratum) when the wallboard system has a surface treatment, i.e., entire surface has a skim coat of a joint compound. If the joint compound is only applied to seams, corner bead, and or nails then EPA allows the compositing of the various layers. Conversely, AHERA allows compositing of all layered bulk samples regardless of surface treatments. This seems to run contrary to OSHA's understanding and policy to require separate layer analysis for compliance with OSHA's asbestos regulation. Further confusing this issue is that OSHA allows employers/building owners to rebut presumed asbestos containing building materials if the employer follows the AHERA regulation.

Besides our discussions with EPA representatives here in Region VIII, we have also obtained copies of interpretation letters from EPA on these issues. These interpretations along with the Jan. 5, 1994 and the Aug. 1, 1994 EPA Federal Register Notices further clarify analysis of bulk samples obtained from multi-layered systems. The difficulty of these letters and the Notices is that they apply only to NESHAP.

OSHA may be legally weak if an employer following AHERA bulk sample analysis methods were cited by OSHA for not performing separate layer sampling and analysis. Under OSHA's regulation we allow the employer to rebut PACM if they follow AHERA rules on sampling and analysis. AHERA rules only required one-time sampling by schools, and have not been amended since the 1980's. NESHAPS asbestos rules which would apply to schools if they perform asbestos removal, require separate layer sampling and analysis, and have been amended several times since the 1980's. The amendments have embraced more state of the art sampling and analysis.

Region VIII will continue to uphold the OSHA position that separate layer analysis must be performed to determine asbestos content of building materials. However, we recognize, and bring forward to your attention and action, that we may be legally weak should a case proceed to trial. Any comments and or suggestions that you have would be appreciated.

Attachments

January 17, 1995

Mr. Gerald Garrett
Garrett Laboratories, Inc.
8500 Stemmons Freeway, Suite 2020
Dallas, TX 75247-3804

Dear Mr. Garrett:

This is in response to your October 12, 1994 letter requesting an explanation of the scientific basis for differentiating the analysis of joint compounds from all other building materials. Additionally you state that the January 5, 1994 Federal Register appears to nullify the practice of compositing layered bulk samples to determine the asbestos content.

It has always been the policy of the asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) program to have each layer of a multi-layered system analyzed for asbestos content when determining compliance with the asbestos NESHAP rules. Compositing layered bulk samples was only allowed for compliance with the Asbestos Hazard Emergency Act (AHERA) rule.

6/18/2020

Compliance with OSHA's Asbestos Standard - Composite Bulk Samples. | Occupational Safety and Health Administration

Joint compound when used as a skim coat on the entire wallboard system is treated as an add-on material. It is only when joint compound and/or tape is used specifically to cover the joints and nail holes in a wallboard system (not to cover the entire wallboard) that the materials may be averaged for a "composite" result. The decision to exempt joint compound and/or tape in this circumstance is based on practical enforcement issues and not epidemiological data. It would be difficult at best to find all the joints and nail holes in a wall system that are covered with asbestos-containing material, measure and add the surface areas together to determine if the 160 ft(2) threshold has been exceeded, and then abate only the regulated material. Essentially the whole wallboard system would have to be treated as regulated asbestos-containing material which would greatly increase the amount of material going to asbestos landfills unnecessarily.

This response was coordinated with the Office of Regulatory Enforcement and the Emissions Standards Division of the Office of Air Quality Planning and Standards. If you have any questions, please contact Tom Ripp of my staff at (202) 564-7003.

Sincerely,

John B. Rasnic
Manufacturing, Energy, and Transportation Division
Office of Compliance

January 13, 1994

Dewey C. Green
President
Chem S.I. Inc.
180 Commerce Drive
Pelham, AL 35124

Dear Mr. Green:

This is in response to your letter dated November 22, 1993 requesting a written clarification on the applicability of asbestos containing "sheetrock mud" or other added-on material as it applies to the asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP). Specifically you asked whether a wall system consisting of 1/2" to 5/8" sheetrock, one layer of sheetrock mud and tape, followed by an additional thin layer of asbestos containing sheetrock mud that is either troweled or stippled onto the surface, is subject to the asbestos NESHAP. Additionally, you asked if the stated wall system can be considered a complete wall system for testing purposes.

You stated that it was your understanding, based on a prior determination (Law Engineering, September 4, 1992), that the sheetrock mud, tape, and an additional thin layer of asbestos containing sheetrock mud that is troweled over the surface would be an integral part of the wallboard. We do not agree with your interpretation of the referenced letter. The Law Engineering letter did not address situations with a layer/layers of added-on materials. The letter specifically dealt with a situation where a joint compound was used for mending purposes. For example: the letter addressed situations where joint compounds were used to cover nail holes, cracks, small gaps and wall corners. The wallboard system you described above should be considered as several individual layers with the asbestos containing sheetrock mud being a separate and distinct layer.

In general, when a sample consists of one or more distinct layers or materials, each layer should be treated separately and the results reported by layer (discrete stratum).

I have enclosed a copy of the multi-layer clarification that has been published in the Federal Register. "Joint compound" that is used as a texturing material would be covered under "add-on" materials. Please review this section for a more detailed explanation. If you have any questions, please contact Jeffery KenKnight of my staff at (703) 308-8728.

Sincerely,

Linda J. Lay, Chief
Inorganic Chemicals Section
Stationary Source Compliance Division

Attachment

May 8, 1991

MEMORANDUM

SUBJECT: Clarification of Asbestos NESHAP Requirement to Perform Point Counting

FROM: John B. Rasnic, Acting Director

Stationary Source Compliance
Division Office of Air Quality Planning and Standards

TO: Air Management Division Directors
Regions III and IX

Air and Waste Management Division Director
Region II

Air Pesticides and Toxic Management Division
Directors
Region I, IV and VI

Air and Radiation Division Director
Region V
Air and Toxic Division Directors
Region VII, VIII and X

Revisions to the Asbestos NESHAP were promulgated on November 20, 1990 and included a requirement to perform point counting to quantify asbestos in samples where the asbestos content is below ten percent. This requirement has been the subject of many questions, and the attached guidance document has been developed to clarify when point counting is required.

It should be understood that while the point count rule was published as a revision to the Asbestos NESHAP, the intent of the revision is to improve the quantitative analysis of asbestos for all applications. Therefore, the revision is required for all NESHAP monitoring, under the conditions discussed in the attached clarification, and recommended for AHERA and other asbestos monitoring application. This guidance document was prepared with the cooperation of the following parties: the National Institute of Standards and Technology, EPA's Office of Toxic Substances, Office of Research and Development, and the Emissions Standards.

CLARIFICATION OF NESHAP REQUIREMENT TO PERFORM POINT
COUNTING TO QUANTIFY ASBESTOS BELOW 10%

Since the amendment to the NESHAP for asbestos (Federal Register, Volume 55, Number 224, November 20, 1990) there have been several questions regarding the interpretation of the point count rule. Also, several recommendations for improving the quantitative analysis of asbestos in bulk samples have been made. This clarification notice addresses these questions and discusses the recommendations. A discussion of important considerations related to the quantitative analysis of asbestos in bulk samples follows the clarification statements. This clarification applies to all regulated asbestos containing materials as defined in 40 CFR Section 61.141.

First, a sample in which no asbestos is detected by polarized light microscopy (PLM) does not have to be point counted. However, a minimum of three slide mounts should be prepared and examined in their entirety by PLM to determine if asbestos is present. This process should be carefully documented by the laboratory.

Second, if the analyst detects asbestos in the sample and estimates the amount by visual estimation to be less than 10%, the owner or operator of the building may (1) elect to assume the amount to be greater than 1% and treat the material as asbestos-containing material or (2) require verification of the amount by point counting.

Third, if a result obtained by point count is different from a result obtained by visual estimation, the point count result will be used.

DISCUSSION

The recently amended NESHAP for asbestos (Federal Register, V.55, N. 224, 11/20/90) requires that when the asbestos content of a bulk material is determined using procedures outlined in the interim method (40 CFR Part 763, Appendix A to Subpart F), and the asbestos content is estimated to be less than 10% by a method other than point counting, the quantitative analysis must be repeated using the point count technique. This action was taken after several reports of data from split samples analyzed by visual estimation by two or more laboratories produced conflicting results which made it difficult to determine if a sample should be classified as an asbestos-containing material. The materials were reanalyzed by point count and by interlaboratory exchange of prepared samples resulting in a consistent set of data. A review of data from performance audits indicated an unacceptable number take care to examine a sufficient amount of any sample to be sure that it does not contain asbestos. If the sample is not homogenous, some homogenization procedure should be performed to ensure that slide preparations made from small pinch samples are representative of the total sample. A minimum of three slide mounts should be examined to determine the asbestos content by visual

area estimation. Each slide should be scanned in its entirety and the relative proportions of asbestos to nonasbestos noted. It is suggested that the amount of asbestos compared to the amount of nonasbestos material be recorded in several fields on each slide and the results be compared to data derived from the analysis of calibration materials having similar textures and asbestos content.

The parties legally responsible for a building (owner or operator) may take a conservative approach to being regulated by the asbestos NESHAP. The responsible party may choose to act as though the building material is an asbestos containing material (greater than 1% asbestos) at any level of asbestos content (even less than 1% asbestos). Thus, if the analyst detects asbestos in the sample and estimates the amount to be less than 10% by visual estimation, the parties legally responsible (owner or operator) for the building may (1) elect to assume the amount to be greater than 1% and treat the material as regulated asbestos-containing material, or (2) require verification of the amount by point counting.

The interim method states that asbestos shall be quantified using point counting or an equivalent estimation technique. The Agency (ORD) has been conducting research to determine procedures for defining "equivalent estimations". Recent studies have suggested that the use of gravimetrically prepared standard materials, in conjunction with quantitative techniques, can be used to improve the analyst's ability to estimate asbestos quantity. A procedure for the formulation of calibration materials and quality assurance (QA) procedures for their use has been drafted and is being tested. The Agency believes that use of such material and QA procedure, as well as other objective measurement techniques, have the potential to greatly improve quantitative estimates of asbestos, especially in the range below 10%. If the research proves these procedures to be worthy, the Agency will consider proposing a revised method. A draft of the proposed procedure will be circulated to all NVIAP labs for comment when it has been approved internally.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 61

[OAQPS- ;FRL-]

Asbestos NESHAP Clarification regarding analysis of multi-layered systems

AGENCY: Environmental Protection Agency

ACTION: Notice of clarification to the Final Rule _____

SUMMARY: This document provides clarification regarding the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos. It is intended to address common questions regarding situations where one or more layers which may contain asbestos are present.

FOR FURTHER INFORMATION CONTACT: Mr. Chris Oh at (703) 308-8732 or Mr. Jeffery KenKnight at (703) 308-8728

SUPPLEMENTARY INFORMATION: On November 20, 1990, the Federal Register published the Environmental Protection Agency's (the Agency's) revision of the National Emission Standards for Hazardous Air Pollutants for Asbestos (asbestos NESHAP), 40 CFR part 61, subpart M, 55 FR 48406. The asbestos NESHAP applies to any facility as defined in 40 CFR 61.141. The Agency has learned that some of the regulated community have questions concerning the analysis of samples which may contain multiple layers, any or all of which may be asbestos containing materials (ACM) under the asbestos NESHAP. Because these questions are frequently asked, EPA is making this clarification.

This clarification does not supersede, alter, or in any way replace the existing asbestos NESHAP. This notice is intended solely as guidance and does not represent an action subject to judicial review under the section 307(b) of the Clean Air Act section 704 of the Administrative Procedure Act.

I. Clarification of multi-layered ACM system

The Environmental Protection Agency has received many questions about analyzing multi-layered systems for asbestos content to determine the applicability of the asbestos NESHAP. This clarification reiterates EPA's position for analysis of multi-layered samples for applicability of the asbestos NESHAP.

In general, when a sample consists of two or more distinct layers or materials, each layer should be treated separately and the results reported by layer (discrete stratum). Specific examples are given below.

Plaster/Stucco Systems

If plaster and stucco wall or ceiling systems are layered, and the layers can be distinguished, then the layers must be analyzed separately. Where a plaster or stucco wall system is constructed in layers, and the asbestos-containing layer becomes a distinguishable but "non-separable" component of the wall system, the results of the analysis of the individual layer(s) may include a small amount of the other layers when analyzed (e.g. a skim coat layer may contain a small amount of the base coat layer in the analysis of the skim coat layer).

Add-on Materials

All materials added to wallboard or other base materials (e.g., sprayed-on materials, paint, ceiling or wall texture, etc.) must be analyzed separately, if possible. The results of the analysis of those individual layers of "add-on" material may not be averaged with the result of the analysis of wallboard for a composite result, but must be analyzed and reported separately. Where a thin coating of one material is applied over

another material and the materials cannot be separated without compromising the layers, the analysis may include a small amount of the base layer. If for example, a paint layer containing asbestos is spread over a wallboard layer, and the paint layer cannot be separated from the wallboard, then a small amount of the wallboard layer may be included in the sample of the paint.

If any of the "add-on" materials meet the definition of regulated asbestos-containing material (as defined in 40 CFR 61.141), and if at least 160 square feet of the material(s) are involved in demolition or renovation (whether planned or unplanned during a calendar year), then the project would be subject to the asbestos NESHAP.

Joint Compound/Wallboard

When joint compound and/or tape is applied to wallboard it becomes an part of the wallboard and in effect becomes one material forming a system. Therefore, where a demolition or renovation impacts such a wall system, a composite analysis of the wall system (percent of asbestos in the joint compound, tape and wallboard) should be conducted. If the analysis shows an asbestos content of greater than one percent and at least 160 square feet of the wall system is involved in the demolition or renovation activities (whether planned or unplanned, during a calendar year), then the activities would be subject to the asbestos NESHAP.

Dated: December 3, 1993

John Rasnic

Director, Stationary Source Compliance Division, Office of Air
Quality Planning and Standards.

UNITED STATES DEPARTMENT OF LABOR

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