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The 1% Rule and the Joint Compound Question

by Tom Laubenthal

One of the most vexing issues in asbestos management today is identifying and managing asbestos in wallboard joint compound. The problem falls into a number of technical areas; sampling, sample analysis, and work practices pursuant to maintenance and demolition/renovation. We'll quickly discuss the first two issues and focus on the third.

Wallboard and wallboard joint compounds are categorized as Miscellaneous materials according to AHERA definitions. The AHERA regulations require inspectors to collect a minimum of 2 samples per homogenous area (material) when sampling Miscellaneous materials. The samples are then submitted to an accredited laboratory for polarized light microscopy (PLM) analysis. The sampling and analyses are performed to provide information regarding the asbestos content of the wallboard system for management, maintenance, and/or renovation/demolition purposes.

What regulators often find when making inspections in the case of demolition/renovation is that the joint compound is under sampled¹. Meaning, that taking only two samples of joint compound relegates the information obtained as insufficient to truly understand the extent of the asbestos-containing joint compound throughout the wallboard system within a building. Many regulators are now citing building inspectors (and/or those responsible for determining the scope of work) for "under sampling" joint compound². The citations stem from the inspection report not determining the extent of asbestos-containing materials (ACM) leading to demolition/renovation activities that release asbestos into the air and as uncontained dry ACM debris.

Inspectors also make a common mistake in that the best way to pad profit with their inspections is to use the most inexpensive lab available. While this is their choice, it can often lead to major decision making errors based on faulty analytical data. While no lab performs perfectly for any analyte, inexperienced analysts or an irresponsible laboratory can easily overlook or misidentify asbestos in wallboard joint compound. Joint compound is difficult to analyze because of the interfering materials within the matrix and often requires additional techniques beyond that which is supplied for a minimum analysis fee. The asbestos content can also hover at the regulatory definition of ACM (greater than 1 percent asbestos). This can yield quantification errors; both false positives and negatives. It behooves inspectors to reconsider laboratory service providers in this effort. The fact that a PLM laboratory maintains an accreditation does not guarantee performance when analyzing more difficult samples like joint compound.

The regulatory definition of >1% is often misunderstood in regards to regulatory compliance. In all Federal regulations, notably, EPA/NESHAP (40CFR Part 61) and OSHA (29CFR1926.1101 and others), the definition of ACM is clearly >1%. But if a material is found to be <1% by PLM are there any further responsibilities?

Let's then look at the joint compound issue. Provided that the inspector sufficiently sampled joint compound within the wallboard system (and not as a composite sample) and all samples were properly analyzed what do the results tell us? Does the material contain >1% or < 1%? If the material is found to be >1% most State regulators, pursuant to EPA/NESHAP (demolition/renovation issues), will regulate the material as ACM and require procedures such as wet methods, regulated areas, containerization and proper disposal. Regulators can issue citations for "visible emission" if ACM debris is found at the work site.

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Mission Statement of the Environmental Information Association

The Association's multi disciplinary membership will collect, generate and disseminate information concerning environmental health hazards to occupants of buildings, industrial sites & other facility operations.

The 1% Rule - cont'd

Additionally, citations can be given for "dry removal" if wet methods are not employed and "improper disposal/containerization" citations can be issued if ACM debris is merely put into an open dumpster.

But what if the material is <1% asbestos? OSHA has numerous *Standard Interpretation* letters that address this issue. On OSHA's web page³ is a section that should be monitored regularly by those that work within the asbestos control industry. Professionals within industry send letters with questions regarding compliance issues and OSHA representatives (usually within one of the 10 OSHA regions) respond with their interpretations. Often one of these letters is deemed as an issue that is widely sought out from industry. OSHA then will post the letter to the web page in the hope that it will serve as a common answer to an oft posed question.

A mistake often made by asbestos inspectors, consultants and contractors is that if a material is not ACM (<1% asbestos) then they have no duty in regards to OSHA compliance. Following letter from 1997 entitled: *04/17/1997 - OSHA's asbestos standard regulates working with materials containing less than 1 percent asbestos*,⁴ described OSHA's perspective of the "1% rule:"

"...However, the OSHA standard has a definition for both "asbestos" and "asbestos-containing materials." The definition of asbestos does not have a one percent cut off, therefore, asbestos that is present in percentages less than one percent continues to be covered by the OSHA standard..."

Probably one of the most important letters on the 1% issue on OSHA's web page is from August, 13, 1999 entitled: *08/13/1999 - Requirements for demolition operations involving material containing <1% asbestos*⁵, has numerous issues addressed:

"...However, if the materials contain some amount of asbestos that is less than or equal to 1%, the contractor must observe the asbestos PELs and 29 CFR 1926.1101(g)(1)(ii) and (iii). Therefore, the contractor has an implied obligation to determine if the materials contain some asbestos. The contractor must exercise due diligence to identify the presence of asbestos in materials..."

Also:

"You ask if a demolition project involving only materials containing <1% asbestos requires an initial negative exposure assessment. In order to avoid the need to comply with the elements of the standard that are applicable when either asbestos PEL is exceeded, the contractor conducting the demolition project must produce an initial negative exposure assessment for his/her employees."

And:

"As to your inquiry into the protective equipment and training that must be provided to employees who are working while the contractor seeks to produce a negative exposure assessment, the contractor must provide those employees with the protective clothing described in 29 CFR 1926.1101(i). At a minimum, half-mask air-purifying respirators, other than disposable respirators, equipped with high efficiency filters are required. And, the contractor must provide those employees training that meets the mandates of 29 CFR 1926.1101(k)(9)(viii)."

A few other notable citations on this issue can be found within the letter entitled), *11/24/2003 - Compliance requirements for renovation work involving material containing less than 1% asbestos*.⁶

Question 6: Why, if material containing <1% asbestos is to be considered hazardous (employers are to wet it, put it in containers, and perform air monitoring), are employers not required to warn workers about its presence when they know it is present at a work site or in a building?

Reply: You **must** inform employees about the presence of material containing <1% asbestos when you know it is present. When employees perform work activities involving such material, you are required per 29 CFR 1926.1101(f)(2)(i) to assess their exposures to asbestos...

And as an interesting work practices issue:

Question 7: If OSHA had intended to regulate material containing <1% asbestos, why do not employers have to use HEPA-filters when using vacuum cleaners to clean up material containing <1% asbestos?

Reply: An employer does not have to use vacuum cleaners to clean up material containing <1% asbestos. However, if an employer uses vacuum cleaners to clean up the material, then per 29 CFR 1926.1101(l)(1), it must use HEPA-filtered vacuuming equipment.

In general it would be prudent to say that to assume that one does not have responsibilities in regards to protecting workers, through notification and air sampling, would be a mistake and an OSHA violation. What is really the issue here? How many buildings are currently being renovated or demolished without a clear understanding of the asbestos content within joint compound? It does not take much industry experience or imagination to realize that this is a national problem. Inspectors, consultants, contractors, employers, building owners, and regulators all have a duty to demolition/renovation workers to protect them from asbestos exposure despite the additional cost this may incur to these projects. We must persevere to inform our clients and the contracting community of their responsibility in this matter. And with any luck, we'll have better enforcement from Federal and State agencies, but that's another story.