

CASE STUDY: BROWN COAT PLASTER (REBUT ACM DESIGNATION) - MILLIONS SAVED

PROJECT DESCRIPTION: HISTORIC PROPERTY CONVERSION TO HOTEL

Scope of Services: AET was contracted to perform a comprehensive asbestos survey of the plaster walls and ceilings in a 100 year old vacant former corporate bank headquarters in New Jersey. The building is comprised of a penthouse, 10 floors and 3 basement levels (each 10,000 SF in size) and is planned to be renovated (requiring extensive demolition) into a hotel facility. The plaster is found in two distinct layers. It is composed of an outer white finish coat and an underlayer of brown coat and is applied to wire lath ceilings and terra cotta tile walls.

AET was hired as two previous asbestos surveys provided mixed results for asbestos content in the plaster to the building owner. AET reviewed the protocols, methodologies and analytical procedures utilized during the previous surveys and found them flawed. The building owner authorized us to complete a new survey.

AET Field Experience - Asbestos content in wall and ceiling plasters is not uniform and can vary significantly from floor to floor and also on different locations on the same floor. Where asbestos is found, it is primarily in the brown coat. Significant bulk samples must be collected to rebut plaster that has been previously characterized as ACM. OSHA, EPA and the State of NJ Asbestos regulations define and regulate ACM as create >1% asbestos.

AET Lab Experience - Finish coat and brown coat plaster rarely contain asbestos content exceeding 1% asbestos (usually <0.1-0.8%). Acoustical plasters and patching materials can have higher asbestos content. Laboratories frequently over estimate the asbestos content in plasters which can result in unnecessary costly asbestos abatement. Plasters in AET's laboratory are evaluated against a gravimetrically defined 1% comparison reference sample followed by a calibrated visual estimation in accordance with EPA protocol.

AET's Investigative Approach/Tools:

1. **Homogenous Areas** - AET's CIH and Building Inspector design team initiated EPA recommended sampling protocols including the collection of 7 bulk samples for PLM analysis to evaluate each floor homogenous area.
2. **NVLAP/AIHA Accredited Laboratory** - PLM samples were analyzed in AET's Media, PA laboratory and evaluated in comparison to our reference standard. The white finish coat did not contain asbestos; the brown coat was found to contain no asbestos content or trace (i.e, <1%) chrysotile asbestos. The brown coat plaster was classified as non-asbestos containing.
3. **Additional Quality Control** - To alleviate the concerns of the State of NJ, a secondary laboratory was chosen to reanalyze all samples with trace asbestos content. These samples were evaluated by a 1,000 point count. Again, the brown coat was classified as non-asbestos containing.
4. **TEM Analysis (ASTM D5755)** - At the request of the client, TEM analysis was performed on 8 samples; 1 of 8 had an asbestos content of 1.1% chrysotile. This ASTM method is used primarily for microvacuum sampling and determining surface dust levels for asbestos. In AET's professional opinion, this method should not be used for asbestos determination in bulk plaster samples due to the aggressive sample preparation requirements which can break the asbestos fiber bundles into small asbestos fibers (hence providing worst case results). Note: Application of the EPA's rounding rule for point counting asbestos bulk samples will result in the plaster being classified as not ACM.

Final Resolution - All asbestos in plaster data was submitted to the State of NJ for their review. NJ's acceptance of AET's findings to rebut the ACM designation of the brown coat plaster will save the building owners millions of dollars in remediation costs and time to renovate the property.

When you need professional help or advice, email Alan Sutherland, CIH at a.sutherland@aetinc.biz or call 610-891-0114. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services we provide at our website www.aetinc.biz.

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