CASE STUDY: LEAD BASED PAINT (LBP) EVALUATION: MARINE VESSEL

Project Description: USS Intrepid Renovation/Stabilization Project
Conversion into Intrepid Sea - Air - Space Museum

Scope of Services: AET was contracted to review architectural plans for the Gallery Deck Fire Suppression and Egress Renovation Project and develop/implement an LBP Sampling Program. LBP data was used to develop a detailed scope of work for lead abatement including scraping of loose and flaking paint (defective paint surfaces) prior to repainting of the renovated areas. AET was also contracted to provide lead abatement cost estimates for the pending lead abatement work.

Commissioned in 1943, the USS Intrepid is an aircraft carrier which was converted into a museum and open to the public in 2008. The Gallery Deck level is compartmentalized into rooms and passageways consisting primarily of metal floors, ceilings and bulkhead walls. Significant portions of the Gallery Deck had been renovated from the original configuration and converted into offices, museum exhibit space and a vocational training area prior to AET's LBP evaluation.

AET's Investigative Approach/Sampling/Tools:

1. **Planning...** Working from the Gallery Deck scope and drawings, AET segregated the affected areas of the Gallery Deck into 29 distinct functional spaces based on existing barriers and space usage. Each functional space was assigned a sequential numeric designation and vessel components were tested based on paint color, substrate and condition.

2. **LBP testing...** A direct reading NITON XL 309 Xray Florescent Spectrum Analyzer was used to evaluate lead content within the paint. A total of 337 surfaces were evaluated and compared to the EPA/HUD regulations for lead of 1.0 mg/cm2.

3. **Quality Control Evaluation...** Representative paint chip samples were also collected from the metal substrates and analyzed by Atomic Absorption Spectophotometry and compared to the EPA/HUD regulation of 0.5% lead by weight.

AET's Experience: Painted components on marine vessels are multiple layered as previous paint coatings are hardly ever removed and just painted over. Hence, lead paint removal is very costly due to the thickness of the paint coatings which remain. Paint stabilization continues to be the recommended control method and must be performed by Licensed Professional Lead Contractors. Lead abatement must be performed in isolated/confined work areas under negative pressure created by HEPA filtration devices. Cleanup of lead debris/dust generated during abatement is often incomplete and is essential. The extent of cleaning must be verified by surface wipe sampling (EPA/HUD Criteria).

When you need professional lead advice email Alan Sutherland, CIH, CHMM at a.sutherland@aetinc.biz or call 610-891-0114 and reference AET's Project #6097NJ. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services on our website www.aetinc.biz.

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