

Will My Educational Furniture Pass the LEED / BIFMA / CDPH / CHPS Low VOC Emitting Furniture Standards?

Unfortunately, it is not possible to simply look at a product and know whether it will pass or fail with any degree of accuracy – hence why testing is required. That said, presented below are a few facts that will help to shed some light on this matter:

1. Historically most educational furniture and seating submitted to MAS will comply with the 7-day LEED and 14-day CDPH/CHPS standard (in some cases use of an alternative low emitting top coat finishes on wood veneered furniture is required).
2. In general, plastic laminated and melamine case goods and work surfaces tend to fair better and are lower emitters (comparatively) than top coated wood veneered based systems.
3. Historically chromed and powder coated metal components are very low emitters
4. Relative to wood based furniture – hardwood plywood is a lower emitter than MDF and particleboard.
5. On most wood veneered products, it is the type of top coat finish used that typically is the decisive factor on whether a product will pass or not. Historically conversion varnishes, certain lacquers and catalyzed finishes have a harder time pass than water based polyurethanes and solid UV finishes.
6. Sealing exposed MDF and particleboard edges with edge banding and/or sprayed sealants, along with use of backer sheets helps to reduce emissions from the cores of composite woods.
7. Fiberglass used in some acoustical panels can emit high levels of formaldehyde, but there are low emitting types available (the density of the fabric covering will impact emissions of the underlying batts).
8. Most chairs (executive and task seating) covered under the LEED/CHPS standard have an easier time passing than workstations due largely to scale. Historically, MAS has never tested a typical polymer based chair that was not compliant.
9. Relative to upholstered furniture, the types of foam and backer boards used typically impact emissions the most. Most woven fabrics / textiles will not significantly impact the overall emissions. That said, use of leathers and vinyls will affect emissions as they are significantly less porous and tend to impede but not stop emissions of the underlying materials.
10. Comparatively, most vinyls and the coating used on leather coverings will contribute negatively to the off-gassed emissions from upholstered furniture.
11. Using short duration, small scale comparative R&D tests to identify a “worst” case scenario of construction / component options (that exist in product lines), MAS can effectively certify multiple products (2 to 30) under a single cost savings compliance test.

12. As an evaluator step, MAS typically conducts lower cost small scale “screening” test on representative “worst” case scenario samples of a product line to determine the likelihood of compliance of all similar products in that line – without incurring the expense of manufacturing and testing a full size sample.

13. If requested MAS can determine with a single test furniture compliance with multiple standards including: BIFMA and CDPH (Section 1350).

14. Note: In January 2012, CDPH and CHPS based standards for formaldehyde emissions will be dramatically lowered from the current air concentration of 16.5 µg/m³ to 9 µg/m³. This reduction will represent a significant challenge for certain manufacturers and types of furniture.

How can I increase the likelihood of my products meeting ever more stringent emission standards?

Emissions of VOCs are cumulative and they can be interactive. This means all raw materials used in a finished product that contain VOCs will over time off-gas from it and can combine with other chemicals to form new VOCs. To minimize the overall impact of VOCs – prudent manufacturers should implement the following preemptive steps:

1. Screen all raw material /component suppliers for formaldehyde use. An easy initial step is to begin this process is to review Material Safety Data Sheets (MSDS) for the presence of formaldehyde and other regulated VOCs in product Formulations.

2. Ask suppliers for test data and a declaration that supports no or minimal formaldehyde use in the formulation.

3. Manufacturers of furniture using composite wood substrates should request products that are certified as (in order of preference): a). CARB Phase II compliant for formaldehyde emissions, b). Ultra Low Emitting Formaldehyde Resins (ULEF), or c). No-Added Formaldehyde (NAF). Ask for proof and note, that these certifications must be updated at least annually –so check the date of the last test.

4. Many adhesives and glues used in construction / assembly often contain high levels of formaldehyde – find substitutes or use minimally

5. Top coat finishes and paints often contain high levels of formaldehyde and other target VOCs. Actual emissions test data confirming off gassed concentrations is the best evaluatory tool. Reliance solely on VOC content compliant with Green Seal and/or SCAQMD Rule 1168 is not sufficient.

6. Many types of fiberglass, Kraft papers, vinyls and other soft plastics are high VOC emitters – find substitutes or use minimally

7. Frequently minor variations in the manufacturing process can have significant impacts on off-gassed emissions including; increasing drying oven temperatures, increasing drying time, increasing ventilation flows, use of breathable packaging increasing age of stocked products, etc.