



TECHNICAL TIPS: KEEPING THE SCHOOL INDOOR ENVIRONMENT FREE FROM TOXIC ORGANIC CHEMICAL EMISSIONS

Building owners, designers, contractors, and facility maintenance personnel are ensuring the products used for school building construction and renovation meet the CHPS standards for volatile organic compounds (VOC) and added formaldehyde contents.

Many common building products and materials used indoors in the construction of educational facilities can be sources of unwanted chemical pollutants. When emitted to indoor air, these pollutants can enter the body through normal breathing. Such inhalation exposures can result in adverse health effects, including sensory and upper respiratory irritation, pulmonary irritation, asthma, damage to organ systems and neurological and reproductive systems, and increased risk of cancer. Exposure to these carbon containing chemicals is an especially important issue for schools as children may be more susceptible than adults.

To reduce the potential for adverse effects due to inhalation exposures, it is important to specify and use products and materials that have no to low emissions known to be harmful.

There are six categories of building products with the potential of chemical emissions. The categories are adhesives, sealants and caulks, paints and coatings, flooring systems, ceiling and wall systems, composite wood and agrifiber products, and furniture and furnishings.

FINDING THE RIGHT LOW-EMITTING PRODUCTS

There are multiple options for selecting products that have disclosed the VOC and added formaldehyde content, as well as other health related information. Finding the right low-emitting products has become much easier today as the demand for transparency in environmental and health impacts of products has increased. As a result, manufacturers are committed to documenting and sharing their products' impact on the environment and human health.

Step 1: Refer to the Environmental Qualities (EQ) prerequisites and credits in the CHPS Criteria that require low emitting products.

Step 2: In the Requirements section of the prerequisite and credit find the standard that is applicable to the product category.

Step 3: There are several ways to find products that comply with the adopted CHPS standards.

- Refer to CHPS Product information at <https://chps.net/products> and search our partner sites for our Pre-Approved Products: zerodocs.com and <https://www.transparencycatalog.com/>.
- Use the link to find other third-party certifications and programs that use CDPH Standard Method v1.2 (2017) for testing. <https://www.cdph.ca.gov/Programs/CCDPPH/DEODC/EHLB/IAQ/CDPH%20Document%20Library/List%20of%203rd%20party%20certifications%20for%20CDPH%20v1.2-Oct-10-2019%20ADA.pdf>.
 - Follow the links, shown in the above listing, to the certification or program website applicable to your product category.
 - Within each certification or program website search for building products that meet the material content requirements.
- For sealant and adhesive VOC content refer directly to [South Coast Air Quality Management District Rule \(SCAQMD\) 1168](#), or their list of [Compliant Products](#) comprised from manufacturer/suppliers who have informed SCAQMD that they can provide Rule 1168 compliant products. Compliance with SCAQMD Rule 1168 can also be found through the third-party certifications and programs listed above.
- New or newly refurbished furniture and furnishings must meet the VOC emission guidelines, including formaldehyde, established by ANSI/BIFMA X7.1-2011 (reaffirmed 2016), *FES Test Method*, and ANSI/BIFMA e3-2019, Furniture Sustainability Standard found on the [Business & Institutional Furniture Manufacturers Association \(BIFMA\) website](#).

Step 4: Select product(s) based on the CHPS Criteria requirements.

ENSURING COMPLIANCE

1. At the schematic design phase, Designers and Specifiers shall use the CHPS Criteria as their reference to establish low-emitting standards. Each building product with low-emitting properties belong to a product category with specific measurements for compliance such as: by area, by volume, and by number of items.
2. At the procurement phase, as part of the pre-bid conference, the Designers shall inform potential bidders that the project is specified with building products with low-emitting properties, and the goal is to maintain good indoor air quality during construction and occupancy.
3. At the construction phase, the contractor shall include supporting documents of building products with low-emitting properties into the submittal process. The supporting documents will be a certification, declaration or claim validation issued by a third-party, or a manufacturers compliance letter with product data showing the VOC or added formaldehyde content, such as a Material Safety Data Sheet (MSDS).
4. If two requirements exist, the product must comply with both requirements. As an example, composite wood panels (e.g. acoustical panels) must comply with both the Composite Wood category and the Wallcovering & Ceiling Panels

category. If the panel manufacturer uses wood components from another manufacturer, both must comply.

5. During construction the most effective way to track compliance is for one construction team member to keep a running list of materials and their compliance information (e.g., VOC or formaldehyde content, applicable emissions testing standard, volume, cost, area or number of items), with a copy of the compliance documentation. Project teams may use the Low Emitting Materials worksheet included in the CHPS Verified Workbooks, or a tracking tool of their choice.
6. Furnishings and furniture are considered part of the scope if it is installed at the time of occupancy, regardless of who specified or provided it.
7. Adhesives, sealants, paints, and coatings used on site with flooring products are considered interior adhesives and sealants or interior paints and coatings, as appropriate. The flooring itself must meet the requirements of the flooring product category.

The organic chemical content is not the only qualifier for selecting materials on a project, however, it has taken on a major role as the evidence of the impact of poor indoor air quality grows. Quality, life-expectancy, cost, and maintainability continue to be important considerations when selecting products for schools.

More detailed information about VOC's and added formaldehyde, and the California Department of Public Health (CDPH) Standard Method of Testing using Environmental Chambers Version 1.2 (2017) is available on the [California Department of Public Health Indoor Air Quality \(IAQ\) Section](#) webpage.