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The VOC epidemic in schools

Reducing VOCs is the key to keeping classrooms safe and healthy for everyone.
Learn how choosing the right finishes can lead to academic success.

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Curat Education

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Introduction

Volatile Organic Compounds (VOCs) are found in almost everything. On tables, chairs, flooring, adhesives, even that “new car smell,” virtually everything in the built environment.

Designing school environments is about more than choosing attractive finishes, it’s about safeguarding the health, comfort, and academic potential of students and staff. Among the materials that have a profound impact on indoor air quality (IAQ), flooring plays a crucial role. Prioritizing materials that are tested and proven to emit low VOCs is an effective strategy at reducing the concentration of these pollutants.

“(Children) are spending as much as three years during the most developmental parts of their lives in schools, exposed to chemicals.”

References

1. CDPH Standard Method V1.2 California District of Public Health – this widely recognized standard is used in LEED and other Green Building programs.
2. EPA Reference Guide for Indoor Air Quality in Schools
<https://www.epa.gov/iaq-schools/reference-guide-indoor-air-quality-schools>
3. Indoor Air Quality Tools for Schools – Framework for Effective School IAQ Management
<https://www.epa.gov/iaq-schools/framework-effective-school-iaq-management>
4. Controlling Pollutants and Sources – Indoor Air Quality Design Tools for Schools
<https://www.epa.gov/iaq-schools/controlling-pollutants-and-sources-indoor-air-quality-design-tools-schools>
5. Recommended Action Checklists for Improving IAQ in Schools
<https://www.epa.gov/iaq-schools/recommended-action-checklists-improving-indoor-air-quality-schools>
6. Does Carpet Cause IAQ Problems in Schools?
<https://www.epa.gov/iaq-schools/does-carpet-cause-indoor-air-quality-iaq-problems-schools>
7. Volatile Organic Compounds’ Impact on Indoor Air Quality <https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality>
8. American Lung Association – Indoor Air Quality in Schools
<https://www.lung.org/getmedia/14c45699-8055-4cdc-8695-7a57ae36058a/ALA-IAQ-School-V2.pdf>
9. Cambridge Mask – The Importance of Indoor Air Quality in Schools
<https://cambridgemask.com/blogs/news/the-importance-of-indoor-air-quality-in-schools>



Understanding the risks

VOCs and school indoor air

VOCs are chemicals commonly released by building materials such as paint, adhesives, furniture, carpet, and resilient flooring. According to EPA data, indoor concentrations of VOCs may be *2 to 5 times*, and sometimes as much as over *100 times*, higher than outdoor levels. This is partly because of the high concentrations in smaller areas like classrooms and this is why the CDPH test method for VOCs specifically references a classroom scenario.

Children are extremely sensitive to indoor pollutants as *they breathe more air per body weight*, spend most of the school day indoors, and are still developing physiologically. Even low level VOC exposure can lead to respiratory irritation, increased asthma symptoms, and allergic reactions.

EPA's Reference Guide for Indoor Air Quality in Schools warns that poor IAQ can contribute to health issues, discomfort, reduced concentration, and lower academic performance, highlighting the need to control pollutant sources like flooring materials.

The role of flooring in indoor air quality

The EPA explicitly identifies flooring as a significant potential source of VOC emissions. These emissions may come not only from the flooring material itself, but also from adhesives, coatings, and maintenance products used on the product over time.

Additionally, certain flooring systems like carpet present indoor air quality challenges if moisture intrusion occurs. Damp carpets can harbor mold, dust mites, and other biological contaminants, further reducing air quality and potentially triggering asthma or allergies.

EPA recommendations: selecting low VOC flooring

The EPA's Recommended Action Checklists for Improving IAQ in Schools includes clear guidance to help with this problem:

- *Specify low VOC adhesives and coatings* to minimize pollutant load during installation and occupancy.
- *Request manufacturer emissions data*, such as FloorScore certification, GreenGuard, VOC tests results or equivalent to confirm low VOC performance.
- *Use low VOC adhesives*, or opt for flooring types that may not require adhesives.
- *Ventilate thoroughly for at least 72 hours* after installation, allowing most off gassing to dissipate before occupancy.
- *Schedule installation during unoccupied periods*, such as school holidays, and ventilate work areas thoroughly.

These steps are also embedded in EPA's broader IAQ Tools for Schools framework, which emphasizes material selection and source control as key technical solutions for maintaining healthy school buildings.



The importance of choosing low VOC flooring

Health + academic benefits

By minimizing VOC emissions, low VOC flooring reduces exposure to respiratory irritants and known asthma triggers. This is especially important for younger children and staff with sensitivities.

- **Improved concentration and performance**
Studies suggest poor IAQ can impair cognitive function and performance. Cleaner indoor air helps students stay focused, reduces sick days, and supports better learning outcomes.
- **Fewer absenteeism and disruptions**
Asthma is a leading chronic illness in childhood, one in twelve children live with the condition. Frequent exposure to volatile organic compounds may trigger or increase symptoms. Low VOC flooring helps reduce this risk.
- **Support sustainability and certification goals**
Many schools aim for green building certifications like LEED, WELL, or CHPS. Low VOC flooring and adhesives, especially those certified under FloorScore, contribute directly toward points in these programs focused on indoor environmental quality. LEED v5 offers specific credits for products with these attributes.

Why Altro's low VOC products stand out

At Altro, our commercial vinyl flooring and wall systems are designed with both well being and performance in mind:

- Certified low VOC flooring and adhesives, often verified through FloorScore or similar standards, aligning with EPA criteria and green building protocols.
- Adhesive free installation options, to further reduce emissions and simplify installation.
- No finish required, minimizing the need for high-VOC sealants and finishes.

Designing schools that support health, learning and longevity

Every designer, facility manager, or architect has the responsibility to protect occupants. Low VOC flooring is more than a compliance checkbox, it's a proactive investment in well-being, academic performance, and operational efficiency.

By following EPA guidance, such as specifying low emitting materials, controlling adhesives, ventilating after installation, and embedding material selection into IAQ management planning, designers and school administrators can create safer, healthier, and more sustainable learning environments.

At Altro, we help turn these best practices into reality. From installation through long-term use, our low VOC, high-performance flooring solutions are engineered to support safe, sustainable, and inspiring school spaces.