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25% perform poorly due to design issues. Either hood design issues (10%) or lab design issues (15%).



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25% perform poorly because of user work practices. We have to consider the user part of the laboratory ventilation system.

Unless we address hood performance in a holistic way and address all three of the above factors, we will not optimize fume hood performance and if hoods are not performing safely, not only are wasting money, but you increasing liability

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placement of supply air, etc













Question: • Does your client have a plan for retesting hoods periodically or after system changes? • If not, your design might be setting up future risks without you realizing it.





















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Let's be clear:

•If you specify the wrong type of fume hood for the application

•If your layout contributes to airflow disruptions

·If your documents don't clearly define testing, commissioning, or revalidation requirements

•Or if performance expectations aren't documented properly

You can be named in lawsuits if there is a lab accident involving exposure, injury, fire, or death.

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You don't have to be *solely* responsible to be *held liable*. Joint and several liability applies — meaning you can be pulled into major legal settlements even if others (engineers, contractors, owner) also share blame.

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Earlier we discussed that installed equipment doesn't automatically guarantee safety. Now we shift to **how performance is validated** — how you can know if a fume hood is truly containing hazards in the real world, not just on paper. We'll look at standard industry testing methods, show you some real-world containment behavior, and engage you in making some judgment calls yourself.

ASHRAE 110 is *very useful* — but it's **a controlled test under ideal conditions**. It is a static snapshoot under prescribed conditions.

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In the real world, room disturbances, poor maintenance, or bad user practices can cause even a well-tested hood to fail.

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 Introduction: Why Validate?

 • Installed ≠ Safe

 • Real-world conditions and behavior matters more than design specs.

Key Point ASHRAE 110 is essential, but not enough to guarantee real-world containment. And to be useful it has to be properly specified

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Handout Details • 10 Questions Every Architect Should Ask About Fume Hood Safety Image: Comparison of the provide the provi







