LAB FUME HOOD DUCT MANIFOLDING REQUIREMENTS

IR M-1

References:

California Code of Regulations (CCR) Title 24, Part 4: California Mechanical Code (CMC) 2007 and 2010 CMC, Chapter 5, Sections 505.1, 505.1.2, and 506.1

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Discipline: Fire and Life Safety

This Interpretation of Regulations (IR) is intended for use by the Division of the State Architect (DSA) staff, and as a resource for design professionals, to promote more uniform statewide criteria for plan review and construction inspection of projects within the jurisdiction of DSA which includes State of California public elementary and secondary schools (grades K-12), community colleges, and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

This IR is reviewed on a regular basis and is subject to revision at any time. Please check the DSA web site for currently effective IRs. Only IRs listed in the document at http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx at the time of plan submittal to DSA are considered applicable.

Purpose: This Interpretation of Regulations (IR) describes the options acceptable to Division of the State Architect (DSA) for lab fume hood duct manifolding.

Background: Some school science buildings are designed with multiple areas each containing multiple fume hoods. The issue of manifolding (combining exhaust streams into fewer ducts) fume hood units can be further compounded when there are multiple elevations or stories, and/or hazardous materials involved.

1. BASIC DESIGN REQUIREMENTS:

1.1 DSA will accept submittals that conform to the requirements of Title 24, Part4: California Mechanical Code, Sections 505 though 506.

1.1.1 Ducts conveying flammable vapors, fumes, or dust out of the building: Code language requires that the ducts go directly to the exterior without passing through any other space, unless the use of a rated shaft, continuous to the exterior, is provided.

1.1.2 Separate and distinct systems: Fume hood ducts may not be manifolded together, unless they are within the same space, and compatible by-products are being used in all of the ducts in question. See Section 2 of this IR for an exception to this requirement regarding incompatible materials.

1.1.3 Recirculation not permitted: Fume hood exhausts combined with general exhaust provides the potential for direct communication of by-products from the fume hoods which can then be circulated throughout the building. Therefore, environmental (general) exhaust air must not be connected by any manifold to any fume hood exhaust system, nor be allowed the potential to recirculate fume hood exhausts into occupied spaces.

2. Option

2.1 DSA will also accept, as an option to meeting the requirements of Sections 1.1.1 and/or 1.1.2 above, submittals conforming to the option described below. Conformance with code requirements described in Section 1.1.3 above is still mandatory.

2.2 Manifolding of Fume Hood exhausts shall be allowed when a written report prepared by either an Industrial Hygienist or Chemical Engineer verifies that the hazardous materials are compatible and the exhaust concentration from both room and fume hood shall not exceed 25% of the LFL per CMC 505.

2.3 A copy of the Hazardous Materials Inventory shall be given to the local fire authority.