

Basic Primer for Suspended Ductwork

Probably the two biggest immediate concerns with failed ductwork following earthquakes has to do with the maintenance of adequate smoke ventilation capability and personal injury for those that might be in the area when a duct fails. These are applicable to virtually all types of structures. For hospitals and other emergency response facilities, the loss of heating or air-conditioning can effectively shutdown the facility. The shutdown can occur not only because of thermal issues, but also because the flow of air in a hospital is controlled to minimize the spread of infection.

Frequently the costs and damage to relationships between building owners and tenants incurred as a result of the inability to occupy a structure can be considerably more than the costs of damage to the building structure itself.

Because of the impact that failures in air distribution systems have had in the past, design requirements for these kinds of systems have become much more stringent.

Within a building structure there can be several different kinds of air distribution and venting systems, each with its own function and requirements. These include fire smoke control ventilation, laboratory ventilation, medical filtration and isolation systems, and kitchen or bathroom vents. Requirements for the systems vary based on the criticality or hazardous nature of what is being transported. Code-mandated requirements for the restraint of ductwork is addressed in Section D2 of this manual (Seismic Building Code Review).

Prior to applying this section of the manual, it is assumed that the reader has reviewed Chapter D2 and has determined that there is indeed a requirement for restraint. This chapter of the manual is a "how to" guide and will deal only with the proper installation and orientation of restraints and not whether or not the restraints are required by code or by specification.

This chapter also does not address the sizing of restraint hardware. Chapter D4 includes sections on sizing componentry based on the design seismic force and the weight of the system being restrained.

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