This building newsletter outlines the minimum construction requirements for plenums used as return air ducts for forced air units (FAUs). These requirements apply only to air duct penetrations of the one-hour occupancy separation between a Group R, Division 3 and a Group U, Division 1 Occupancy, provided such ducts within the U-1 Occupancy are constructed of No. 26 gauge galvanized steel minimum with no openings into that occupancy. See Uniform Building Code Section 302.4, Exception 3.

I. Penetration of Enclosed Spaces Under Stairways

Penetration of the occupancy separation may occur in enclosed spaces under stairways where no access is provided and where such spaces are used as return air ducts for FAUs. The plenum space under the stairs is not considered to be usable space and need not comply with the requirements of CBC Section 1003.3.3.9. See Figure 1.

II. Penetration in Other Locations

Penetration of the occupancy separation may occur wherever construction is as shown in Figure 2 and the return air grille opens directly into the return air duct under a forced air unit located in the garage.

III. Protection of Plumbing and Electrical Wiring

If any adjacent wall spaces contain plumbing or electrical wiring, however, they must be separated from the plenum by 5/8-inch Type X gypsum wallboard or equivalent one-hour fire-resistive construction on the enclosed side. Electrical wiring will not be permitted in the plenum space in either case.
Figure 2

Continuous blocking required to seal off return air space on all sides of plenum from walls, joist spaces or other similar spaces.

Galvanized steel over 1/2-inch exterior grade plywood (if FAU is located in garage)

5/8-inch Type X gypsum wallboard

No. 26 gauge galvanized steel plenum through wall

Return air grille

Occupancy separation wall

Garage

Residence