5.14.1 Building Envelope. The building envelope, including roofs, walls, fenestration systems, and foundations, shall comply with the following:

a. A weather barrier or other means shall be provided to prevent liquid-water penetration into the envelope.
   Exception to 5.14.1(a): When the envelope is engineered to allow incidental water penetration to occur without resulting in damage to the envelope construction.
b. An appropriately placed vapor retarder or other means shall be provided to limit water vapor diffusion to prevent condensation on cold surfaces within the envelope.
   Exception to 5.14.1(b): When the envelope is engineered to manage incidental condensation without resulting in damage to the envelope construction.
c. Exterior joints, seams, or penetrations in the building envelope that are pathways for air leakage shall be caulked, gasketed, weather-stripped, provided with a continuous air barrier, or otherwise sealed to limit infiltration through the envelope to reduce uncontrolled entry of outdoor air moisture and pollutants.

Informative Note: In localities where soils contain high concentrations of radon or other soil gas contaminants, the authority having jurisdiction might impose additional measures, such as subslab depressurization.

5.14.2 Condensation on Interior Surfaces. Pipes, ducts, and other surfaces within the building whose surface temperatures are expected to fall below the surrounding dew-point temperature shall be insulated. The insulation system thermal resistance and material characteristics shall prevent condensate from forming on the exposed surface and within the insulating material.

Exceptions:

1. Where condensate will wet only surfaces that will be managed to prevent or control mold growth.
2. Where local practice has demonstrated that condensation does not result in mold growth.

5.15 Buildings with Attached Parking Garages. In order to limit the entry of vehicular exhaust into occupiable spaces, buildings with attached parking garages shall be designed to

a. maintain the garage pressure at or below the pressure of the adjacent occupiable spaces,
b. use a vestibule to provide an airlock between the garage and the adjacent occupiable spaces, or
c. otherwise limit migration of air from the attached parking garage into the adjacent occupiable spaces of the building in a manner acceptable to the authority having jurisdiction.

5.16 Air Classification and Recirculation. Air shall be classified, and its recirculation shall be limited in accordance with the following subsections.

5.16.1 Classification. Air (return, transfer, or exhaust air) leaving each space or location shall be designated at an expected air-quality classification not less than that shown in Tables 5.16.1, 6.2.2.1, or 6.5, or as approved by the authority having jurisdiction. Air leaving spaces or locations that are not listed in Table 5.16.1, 6.2.2.1, or 6.5 shall be designated with the same classification as air from the most similar space or location listed in terms of occupant activities and building construction.

TABLE 5.16.1 Airstreams or Sources

Description	Air Class
Diazo printing equipment discharge	4
Commercial kitchen grease hoods	4
Commercial kitchen hoods other than grease	3
Laboratory hoods	4 [a]
Residential kitchen hoods	3
Hydraulic elevator machine room	2

a. Air Class 4 unless determined otherwise by the Environmental Health and Safety professional responsible to the owner or to the owner's designee

Exception: Air from spaces where ETS is present. (Classification of air from spaces where ETS is present is not addressed. Spaces that are expected to include ETS do not have a classification listed in Table 6.2.2.1.)

Informative Note: Classifications in Tables 5.16.1, 6.2.2.1, and 6.5 are based on relative contaminant concentration using the following subjective criteria:

- Class 1: Air with low contaminant concentration, low sensory-irritation intensity, and inoffensive odor
- Class 2: Air with moderate contaminant concentration, mild sensory-irritation intensity, or mildly offensive odors (Class 2 air also includes air that is not necessarily harmful or objectionable but that is inappropriate for transfer or recirculation to spaces used for different purposes.)
- Class 3: Air with significant contaminant concentration, significant sensory-irritation intensity, or offensive odor
- Class 4: Air with highly objectionable fumes or gases or with potentially dangerous particles, bioaerosols, or gases, at concentrations high enough to be considered as harmful

5.16.2 Redesignation

5.16.2.1 Air Cleaning. If air leaving a space or location passes through an air-cleaning system, redesignation of the cleaned air to a cleaner classification shall be permitted where based on the subjective criteria in the informative note for Section 5.16.1 and where approved by the authority having jurisdiction.

5.16.2.2 Transfer. A mixture of air that has been transferred through or returned from spaces or locations with different air classes shall be redesignated with the highest classification among the air classes mixed.

Informative Note: For example, mixed return air to a common system serving both a Class 1 space and a Class 2 space is designated as Class 2 air.

5.16.2.3 Ancillary Spaces. Redesignation of Class 1 air to Class 2 air shall be permitted for Class 1 spaces that are ancillary to Class 2 spaces.