

- B. Air quality testing must be carried out by specialised companies or laboratories.
- C. Air quality testing equipment must have initial and periodical calibration certificate. Calibration certification frequency shall either be annual or as per manufacturer specification and shall be from an external calibration facility, accredited by DM. The initial and periodical calibration certificates must be saved in a special register. The calibration certificate would be checked by DM to validate the accuracy of the readings. This also is a requirement for renewing the indoor air quality certificate of the building.

## SIGNIFICANCE

Exposure to air pollutants through inhalation of indoor air could lead to Sick Building Syndrome (SBS). Various indoor air quality factors like volatile organic compounds (VOC) and formaldehyde in chemical contaminant sources, mold and bacteria in biological contaminant sources, asbestos and silicas in particulate contaminant sources and human activities like smoking, body odour, housekeeping activities, inadequate ventilation can cause SBS. It is important to maintain acceptable level of IAQ in the buildings to overcome SBS.

Al Sa'fat *Regulation 401.06* ensures prior to occupancy the indoor air quality levels are within the prescribed limits. However, during building operation various activities by the occupants like introduction of high emitting materials and improper maintenance of ventilation equipment may result in poor air quality. Prolonged exposure of these poor indoor air quality could also lead SBS. This affects the building occupant's health and may cause headache, itchy eyes, throat irritation, fatigue, nausea etc.

Regular testing of indoor air quality (IAQ) levels ensures that buildings provide a healthy environment for its occupants. Testing results also guide the project team to identify potential contaminant threat levels, so that corrective actions can be taken to reduce the pollutant levels. Good indoor air quality has a positive effect on the building occupant's comfort, health and productivity.

## APPLICABILITY

This regulation is applicable to hotels, shopping malls, educational facilities, government buildings, healthcare facilities, mosques and worship buildings, theaters, cinemas. Refer to Table 101.07(1) in Section One - Administration for detailed applicability levels.

## IMPLEMENTATION

This regulation requires that existing buildings must undertake IAQ testing within 5 years of last compliant test. The minimum IAQ requirements that need to be maintained are presented in Table 401.07 (1).

The schedule, duration of sampling and maximum limit for contaminants as stated in Table 401.07 (1) should be included as part of the project specifications and building operation manual. It should also include testing methods / standards, sampling point details and testing agency requirements.

Some of the important factors to be considered for IAQ testing:

- IAQ test must be carried out by specialised companies or laboratories.
- An IAQ testing plan specifying the procedures, testing standards, equipment to be used and sampling methods that will be employed, shall be developed.
- IAQ testing shall be carried out following the completion of all interior finishes, not limited to doors, paints, carpet, tiles and furniture, prior to occupancy.