CHAPTER 2 - THERMAL COMFORT

400

402.01 THERMAL COMFORT

Silver Sa'fa

INTENT

To maintain comfortable healthy internal environment for occupants.

REQUIREMENT

For all new and existing buildings, the heating, ventilation and air conditioning (HVAC) system must be capable of providing the following range of conditions for 95% of the year:

Table 402.01(1): Thermal Comfort Requirements

	Lower Limit	Upper Limit
Dry Bulb Temperature	DB: 22.5 °C	DB: 25.5 °C
Relative Humidity	RH: 30% (min)	RH: 60% (max)

For occupant comfort, normal occupied spaces should have an average air velocity between 0.2 m/s and 0.3 m/s.

SIGNIFICANCE

"Thermal comfort is that condition of mind which expresses satisfaction with the thermal environment" (ASHRAE Standard 55).

The primary use of air conditioning is to provide a thermally comfortable space for the building occupants. There are six factors affecting thermal comfort in a building. These factors are independent of each other, but together contribute to thermal comfort.

- Ambient temperature (air temperature)
- Radiant temperature (the temperature of the surfaces around us)
- Relative humidity (measurement of the water vapour in an air - water mixture)
- Air motion (the rate at which air moves around and touches skin)
- Metabolic rate (amount of energy expended)
- Clothing insulation (materials used to retain or remove body heat)