

CHAPTER 2 - CONSERVATION AND EFFICIENCY: BUILDING SYSTEMS

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502.19 AIR CONDITIONING OF PARKING AREAS



INTENT

To provide thermally comfortable environment to pedestrians and users in parking areas.

REQUIREMENT

For Golden and Platinum Sa'fa and for all new buildings other than villas, if air conditioning system is installed for cooling of parking area and in case of shortage in condensation water collected for such purpose, an indirect evaporative cooling system must be used, provided that the design comfort temperature is no less than 28 °C.

SIGNIFICANCE

Due to hot climatic conditions and heat dissipation from vehicles, enclosed parking areas become uncomfortable for users. To avoid this, thermally comfortable walking lanes and spaces in parking areas are required. Normally, for parking spaces it is not necessary to maintain the same temperature as that of a typical air conditioned space and hence these spaces should be maintained at 28°C or more to avoid energy wastage.

In hot and humid climate, large portion of energy is consumed in HVAC system for cooling, filtering and dehumidifying the air. This generates condensate water, which is typically drained off. Re-using condensate water to cool parking areas reduces the ambient temperature and also condensate water is not wasted. Alternative option to cool parking areas and other public areas is to use conventional vapor compression refrigeration-based AC systems or evaporative cooling system. Since conventional systems use more energy, evaporative cooling systems are preferred. Also, indirect evaporative cooling system is environment friendly, as it is a refrigerant-free system. This system also requires less installation costs and maintains good air quality.

APPLICABILITY

This regulation is applicable to all building types, except villas. Refer to Table 101.07(2) in Section One - Administration for detailed applicability levels.

IMPLEMENTATION

Project team can consider utilising condensate water and/or evaporative cooling to cool the walking lanes and other public spaces in the parking areas. When condensate water is not adequate, indirect evaporative cooling system must be utilised in ensuring the comfort temperature is maintained not less than 28 °C.