CHAPTER 2 - CONSERVATION AND EFFICIENCY: BUILDING SYSTEMS

502.16 CONTROL OF CHILLED WATER

Golden Sa'fa

INTENT

To provide optimum thermal comfort and energy efficiency by controlling the chilled water flow in air conditioning units.

REQUIREMENT

For Golden and Platinum Sa'fa and for all new buildings, the HVAC equipment and chilled water control shall be equipped with the hydronic balancing valves including pressure independent control valves for optimum energy usage and occupant comfort. The chilled water control shall be achieved with appropriate use of temperature, humidity and pressure monitoring devices as part of a central building management system.

SIGNIFICANCE

Widely used conventional chilled water control valves are balanced manually at full flow position. It may create unequal distribution of flow if any valve position in the system is changed. This results a change in pressure and causes the system to be unbalanced. This reduces the efficiency and creates discomfort for building occupants.

Automatic balance valves (PIBCV) regulate and maintain a constant flow to the coil even as water pressure in the system varies with the changing load. It delivers better comfort in all condition and allows the system to operate efficiently. Additionally, PIBCV makes installation and commissioning simpler, thereby eliminating the necessity of balancing and rebalancing during commissioning. This saves installation costs for clients.

APPLICABILITY

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

IMPLEMENTATION

The key intent of this regulation is to enhance energy efficiency and maintain thermal comfort by utilising pressure independent balancing and control valve (PIBCV), as shown in fig. 502.16(1), in the chilled water network.

The regulation is applicable for the projects which are designed to utilise chilled water system (including chilled water supplied from district cooling plant) for air conditioning and ventilation.