1323.0652 SECTION 6.5.2.1, ZONE CONTROLS.

ASHRAE Standard 90.1, Section 6.5.2.1, is amended to read:

6.5.2.1 Zone controls. Zone thermostatic controls shall be capable of operating in sequence the supply of heating and cooling energy to the zone. Such controls shall prevent:

1. reheating;

2. recooling;

3. mixing or simultaneously supplying air that has been previously mechanically heated and air that has been previously cooled, either by mechanical cooling or by economizer systems; and

4. other simultaneous operation of heating and cooling systems to the same zone.

Exceptions:

(a) Zones for which the volume of air that is reheated, recooled, or mixed is no greater than the larger of the following:

1. the volume of outdoor air required to meet the ventilation requirements of Section 6.2 of ASHRAE Standard 62.1-2004 for the zone;

2. 0.4 cfm/ft^2 of the zone conditioned floor area;

3. 30 percent of the zone design peak supply rate;

4. 300 cfm- this exception is for zones whose peak flow rate totals no more than ten percent of the total fan system flow rate; and

5. any higher rate that can be demonstrated, to the satisfaction of the authority having jurisdiction, to reduce overall system annual energy usage by offsetting reheat/recool energy losses through a reduction in outdoor air intake for the system.

(b) Zones where special pressurization relationships, cross-contamination requirements, or code-required minimum circulation rates are such that variable air volume systems are impractical.

(c) Zones where at least 75 percent of the energy for reheating or for providing warm air in mixing systems is provided from a site-recovered, including condenser heat, or site-solar energy source.

(d) Recovered energy in excess of the new energy expended in the recovery process may be used for control of temperature and humidity.

(e) New energy may be used to prevent relative humidity from rising above 60 percent or to prevent condensation on terminal units or outlets, or functioning of special equipment. New energy may be used for temperature control if minimized in accordance with this subitem.

1. Systems employing reheat and serving multiple zones, other than those employing variable air volume for temperature control, must be provided with a control that will automatically reset the system cold-air supply to the highest temperature level that will satisfy the zone requiring the highest cooling load.

2. Single-zone reheat systems must be controlled to sequence reheat and cooling.

3. Dual duct and multizone systems, other than those employing variable air volume for temperature control, must be provided with a control that will automatically reset:

a. the cold-deck air supply to the highest temperature that will satisfy the zone requiring the highest cooling load; and

b. the hot-deck air supply to the lowest temperature that will satisfy the zone requiring the highest heating load.

4. Systems in which heated air is recooled, directly or indirectly, to maintain space temperature must be provided with a control that will automatically reset the temperature to which the supply air is heated to the lowest level that will satisfy the zone requiring the highest heating load.

5. For systems with multiple zones, one or more zones may be chosen to represent a number of zones with similar heating and cooling characteristics. A multiple zone system that employs reheating or recooling for control of not more than 5,000 cfm, or 20 percent of the total supply air of the system, whichever is less, is exempt from the supply air temperature reset requirements in subitems 1 to 4.

6. Concurrent operation of independent heating and cooling systems serving common spaces and requiring the use of new energy for heating or cooling must be minimized by:

a. providing sequential temperature control of both heating and cooling capacity in each zone; or

b. limiting the heat energy input through automatic reset control of the heating medium temperature, or energy input rate, to only that necessary to offset heat loss due to transmission and infiltration and, where applicable, to heat the ventilation air supply to the space.

Statutory Authority: *MS s 326B.02; 326B.101; 326B.106; 326B.13*

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