310_675-5-20 Mechanical requirements

(a)

Steam and hot water systems. (1) Boilers shall have the capacity, based upon the net ratings published by Hydronics Institute, to supply the normal requirements of all systems and equipment. The number and arrangement of boilers shall be such that when one boiler breaks down or routine maintenance requires that one boiler be temporarily taken out of service, the capacity of the remaining boiler(s) shall be at least 70% of the total required capacity, except that in areas with a design temperature of 20oF. (-7oC.) or more, based on the Median of Extremes in the ASHRAI Handbook of Fundamentals, the remaining boiler(s) do not have to include boiler capacity for space heaters. (2) Boiler feed pumps, heating circulating pumps, condensate return pumps, and fuel oil pumps shall be connected and installed to provide normal and standby service. (3) Supply and return mains and risers of cooling, heating and process systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends, except that vacuum condensate return need not be valved at each piece of equipment.

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(b)

Heating and ventilating systems. (1) Temperatures. For all areas occupied by residents, the indoor winter design temperature shall be 75oF. (24oC.). For all other occupied areas, the indoor winter design temperature shall be 72oF. (22oC.). (NOTE: This does not preclude operation at lower temperatures where appropriate and resident safety is not affected. This requirement is for "capacity".) The indoor summer design temperature shall be 80oF. (27oC.) for all areas occupied by residents. (2) Ventilation system details. All air-supply and air-exhaust systems shall be mechanically operated. All fans serving exhaust systems shall be located at the discharge end of the system. (A) Outdoor air intakes shall be located as far as practical but not less than 25' 0' (7.62 m.) from exhaust outlets or ventilating systems, combustion equipment stacks, medical vacuum systems, plumbing vent stacks, or from areas which may collect vehicular exhaust and other noxious fumes

(plumbing and vacuum vents that terminate above the level of the top of the air intakes may be located as close as 10'0' (3.05 m.)). The bottom of outdoor air intakes serving central systems shall be located as high as practical but not less than 6'0' (1.83 m.) above ground level, or if installed above the roof, 3'0' (91 cm.) above roof level. (B) The bottoms of ventilation openings shall not be less than 3" (7.6 cm.) above the floor of any room. (C) All central ventilation or air conditioning systems shall be equipped with filters. the filter bed shall be located upstream of the air conditioning equipment, unless a prefilter is employed. In this case, the prefilter shall be upstream of the equipment and the main filter bed may be located further downstream. (D) Filter frames shall be durable and carefully dimensioned and shall provide an airtight fit with the enclosing ductwork. All joints between filter segments and the enclosing ductwork shall be gasketed or sealed to provide a positive seal against air leakage.

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(c)

Plumbing and other piping systems. These systems shall be designed and installed in accordance with the requirements of PHCC National Standard Plumbing Code, Chapter 14, "Medical Care Facility Plumbing Equipment."

(d)

Plumbing fixtures. The material used for plumbing fixtures shall be of non-absorptive acid resistant material. (1) The water supply spout for lavatories and sinks required in resident care areas of skilled nursing facilities only shall be mounted so that its discharge point is a minimum distance of 5" (12.7 cm.) above the rim of the fixture. In all facilities all fixtures used by medical and nursing staff, and all lavatories used by residents and food handlers shall be trimmed with valves which can be operated without the use of hands (single lever devices may be used subject to the above). Where blade handles are used for this purpose, they shall not exceed 41/2' (11.4 cm.) in length, except that handles on clinical sinks shall be not less than 6" (15.2 cm.) long. (2) Clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface. (3) Shower bases and tubs shall provide non-slip surfaces for standing residents.

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(e)

Water supply systems. (1) Systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand periods. (2) Each water service main, branch main, riser, and branch to a group of fixtures shall be valved. Stop valves shall be provided at each fixture. (3) Backflow preventers (vacuum breakers) shall be installed on hose bibbs, janitors' sinks, bedpan flushing attachments, and on all other fixtures to which hoses or tubing can be attached. (4) Flush valves installed on plumbing fixtures shall be of a quiet operating type, equipped with silencers.

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(f)

Hot water heaters and tanks. (1) The hot water heating equipment shall have sufficient capacity to supply water at the temperature and amounts indicated. (See Appendix A). Water temperatures to be taken at hot water points of use or inlet to processing equipment. (2) Storage tank(s) shall be fabricated of corrosionresistant metal lined with non-corrosive material.

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(g)

Drainage systems. (1) Insofar as possible, drainage piping shall not be installed within the ceiling nor installed in an exposed location in food preparation centers, food serving facilities, food storage areas, and other critical areas. Special precautions shall be taken to protect these areas from possible leakage or

condensation from necessary overhead piping systems. (2) Building sewers shall discharge into a community sewerage system. Where such a system is not available, a facility providing sewage treatment must conform to applicable local and State regulations.

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(h)

Identification. All piping in the HVAC service water systems shall be color coded or otherwise marked for easy identification.