

Table 10.1.: Components of Smoke Control and HVAC Systems

| ITEMS | REQUIREMENTS |
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| 5. AHU ROOMS | <p><u>1. AHU ROOMS AS PLENUM SPACE</u></p> <ul style="list-style-type: none"> i. Air-handling unit rooms, used as plenum space, shall not be used for storage or occupancy other than during equipment servicing. ii. Materials used in the construction of an air-handling unit room plenum shall be noncombustible or shall be limited combustible having a maximum flame spread index of 25 and a maximum smoke developed index of 50 when tested in accordance with ASTM E 84 or UL 723 and shall be suitable for continuous exposure to the temperature and humidity conditions of the environmental air in the plenum. iii. Electrical wires and cables and optical fiber cables shall be listed as having a maximum peak optical density of 0.50 or less, an average optical density of 0.15 or less when tested in accordance with NFPA 262, and a maximum flame spread distance of 1.5 m or less, or shall be installed in metal raceways, metal sheathed cable, or totally enclosed nonventilated bus way, or shall comply with low smoke (LSF) to BS EN 61034-1 and zero halogen (LSOH) to IEC 60754-1 and BS EN 50267. iv. Pneumatic tubing for control systems shall be listed as having a maximum peak optical density of 0.5 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 1.5 or less when tested in accordance with ANSI/UL 1820. v. Signalling, optical fiber, and communications raceways shall be listed as having a maximum peak optical density of 0.50 or less, an average optical density of 0.15 or less, and a maximum flame spread distance of 1.5 m or less when tested in accordance with ANSI/UL 2024. Cables installed within these raceways shall be listed as plenum cable. vi. Loudspeakers, recessed lighting fixtures, and other electrical equipment with combustible enclosures, including their assemblies and accessories, nonmetallic cable ties, wraps, nonmetallic cable supports, and other discrete products, shall be permitted in the ceiling cavity plenum where listed as having a maximum peak optical density of 0.5 or less, an average optical density of 0.15 or less, and a peak heat release rate of 100 kW or less when tested in accordance with ANSI/UL 2043. vii. Plastic piping and tubing used in plumbing systems shall be permitted to be used within a ceiling cavity plenum if it exhibits a flame spread index of 25 or less and a smoke developed index of 50 or less when tested in accordance with ASTM E 84 <p><u>2. AHU ROOMS HAVING DUCTS OPENING DIRECTLY INTO SHAFTS</u></p> <ul style="list-style-type: none"> i. The air-handling Unit rooms, including the protection of openings, shall be separated from shafts by a construction having a fire-resistance rating not less than that required for the shaft. ii. A fire-resistant separation shall not be required for air-handling Unit rooms that are enclosed by a construction having a fire resistance rating not less than that required for the shaft. |