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Appendix 11 – Extract from Sections, 8.16 – 8.19 of BS 6891

Relevant extracts from sections, 8.16 – 8.19 of BS 6891 include:

8.16.1.1 Vertical and horizontal ducts containing pipework shall be ventilated to ensure that minor gas leakage does not cause the atmosphere within the duct to become unsafe.

8.16.1.2 Any ventilation opening shall be located such that air movement can occur within the duct.

8.16.1.3 Any ventilation opening shall lead to a safe place, preferably to outside air.

8.16.1.4 Ducts shall be sealed from any cavity, wall or floor void through which they pass.

COMMENTARY ON 8.16.1

The duct can run freely through a number of storeys or take the form of an enclosure at each storey level. Where ducts are continuous, ventilation can normally be achieved by the provision of openings sized in accordance with Table 6

Free area of ventilation opening for dispersal of small leaks	
Cross-sectional area of duct m²	Minimum free area of each opening
Not more than 0.05	Cross-sectional area of duct
More than 0.05 but not more than 7.5	0.05 m ²
More than 7.5	1/150 of Cross-sectional area of duct

Reproduction of Table 1 from BS 8313 and Table 6 of BS 6891

A duct, or an isolated section of duct contained solely within a room or space can be ventilated within that room or space, provided the room or space is ventilated to normal occupational standards.

8.16.2 Fire resistance: The fire resistance of any duct containing pipework shall have a fire rating equal to or greater than any void through which it passes.

8.17 Multi-occupancy buildings: Where pipework passes through an individual dwelling/commercial unit other than the one it supplies, it shall be located in a purpose-provided duct designed and constructed to prevent damage to the pipework.

8.18 Fire stopping: For buildings containing flats and/or maisonettes, pipework shall be fire-stopped as it passes from one floor to another, unless it is installed in its own protected shaft

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that is ventilated top and bottom to outside air. When pipework from a protected shaft enters a flat or maisonette, it shall be fire-stopped at the point of entry.

COMMENTARY ON 8.18

When pipework passes through the protecting structure (i.e. compartment walls or floors) all openings should be kept as small, and as few in number, as practicable, and should be suitably fire-stopped in such a manner as to allow thermal movement of the pipework and ensure the fire resistance is not impaired. To prevent displacement, materials used for fire stopping should be supported by, or reinforced with, materials of limited combustibility. Any proprietary fire stopping should, when tested in accordance with the applicable part of BS 476, achieve the relevant periods of fire resistance for the structure in respect of load bearing capacity, integrity and insulation.

8.19.1 In addition to the requirements for fire resistance (see **8.16.2**) and fire stopping (see **8.18**) any pipework carrying gas installed in, or passing through, a protected area shall be:

- a) steel pipework with screwed joints;
- b) steel pipework with welded joints;
- c) continuous length of copper (no joints); or
- d) continuous length of pliable corrugated (stainless-steel) tubing manufactured to withstand fire test A of BS EN 1775:2007, Annex A.

8.19.2 Other than the exceptions described in **8.19.3** to **8.19.5**, a protected area containing pipework shall be ventilated at high and low levels direct to the outside air. Sizes of ventilation openings shall be in accordance with Table 6. Mechanical ventilation shall not be used to achieve the required ventilation levels.

COMMENTARY ON 8.19.1 AND 8.19.2

Pipework is not considered to be contained within a protected area if the pipework is completely separated from that protected area by fire-resisting duct, which itself is ventilated direct to outside air, e.g. a service shaft.

Ventilation grilles (including intumescent grilles) are not to be provided in fire doors or partitions dividing one protected area from another, such as between a corridor/lobby and stairway, as this could lead to smoke leakage into the escape stairway in the event of a fire.

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8.19.3 Pipework within a protected corridor/lobby, including any suspended ceiling void above the protected area, can be contained within a duct which is vented to outside air either directly or indirectly via another ventilated area. Any ducting shall be of fire-resisting construction to the level of the fire resistance of the protected area it passes through or of an alternative material with fire stopping where the duct passes through the compartment walls/floors.

8.19.4 Pipework that is continuous or welded and meets the requirements of **8.19.1b)**, c) or d) can be installed within a protected corridor/lobby which is not ventilated direct to outside air, provided the protected corridor/lobby is normally occupied. If the pipework is installed above a suspended ceiling, which does not form part of the required fire/acoustic performance of the compartment floor, the ceiling void can be vented into the normally occupied protected corridor/lobby via vents inserted through the ceiling. These vents shall be sized and installed in accordance with **8.16.1** and Table 6. [See Figure 34 above.]

NOTE The term “normally occupied” means an area in which it is reasonably expected that passers-by will be in the vicinity, e.g. regularly used common corridors or common lobbies.

8.19.5 Pipework conforming to **8.19.1a)** installed above a suspended ceiling which does not form part of the required fire/acoustic performance of the compartment floor can be vented into the corridor via vents inserted through the ceiling, provided the corridor is ventilated direct to outside air. These vents shall be sized and installed in accordance with **8.16.1** and Table 6.

8.19.6 If the gas pipework is within a duct and any inspection hatch or door opens from that duct into a protected area, that hatch or door shall be of at least the same fire rating as the protected area in which it is fitted and suitably sealed on all edges to contain any gas escape within the duct.

NOTE The seals to be used should enable the hatch or door to be opened without compromising the integrity of the seal when the hatch or door is closed.