

# TECHNICAL GUIDANCE

## VENTILATORS IN COMPARTMENT WALLS BENEATH SUSPENDED GROUND FLOORS

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### QUESTION

Is it permissible to incorporate ventilators/ducts in compartment walls located beneath suspended ground floors?

### CONSIDERATIONS

Building Regulations and NHBC Standards require sub floor voids to be ventilated with ventilation openings being provided in the external walls on at least two opposite sides. Where this is not possible, effective cross ventilation from opposites sides should be provided by a combination of openings and air ducts. In order to achieve effective cross ventilation, ventilators/ducts may need to be incorporated into compartment walls.

Compartment walls should maintain a minimum period of fire resistance between separate compartments.

It is considered that the risk of fire occurring below a suspended ground floor is negligible.

A suspended floor comprising beam and concrete block or beam and expanded polystyrene block (EPS) with a screed covering is considered to be robust in terms of the risk of downward fire penetration resulting from a compartment fire.

Acoustic properties of compartment walls should not be impaired. Appendix A1 of Part E Robust Details permits ducts through a compartment wall provided:

- the top of the duct is at least 300mm below the finished floor surface of the ground floor structure, and
- the number of ducts passing through the compartment wall is kept to the minimum necessary.

### ANSWER

Ventilation openings formed in compartment walls located beneath suspended ground floors should be avoided where possible.

Where this is unavoidable, in order to resist fire penetration, this practice would be acceptable if the suspended ground floor construction is of beam and concrete block or beam and EPS block with a covering of screed. For timber ground floors, where the location of ventilation openings in compartment walls is unavoidable, this practice may be accepted if suitable intumescent ventilators are used.

In order to satisfy Robust Details for Part E, for all floor constructions:

- the top of any duct should be at least 300mm below the finished floor surface of the ground floor structure, and
- the number of ducts passing through the compartment wall should be kept to the minimum necessary.

For compartment walls that are subject to pre-completion sound testing, the advice of an acoustic consultant should be obtained where ducts are proposed to be formed in the sub floor void.

