

## SCHEDULE 1

Regulation 9

### SPECIFICATIONS FOR INSULATION WORK

#### PART I

##### Interpretation

1. In this Schedule—

“qualifying door” means an external door opening directly into an eligible room and which—

- (a) except in relation to insulation work carried out pursuant to Regulation 4(4) or 5, is in that part of a facade in respect of which the relevant noise level satisfies the requirements of Regulation 3(2);
- (b) in relation to work carried out pursuant to Regulation 4(4), is in a position which, in the opinion of the appropriate highway authority, is physically comparable with that of a qualifying door or qualifying window in another eligible building;
- (c) in relation to work carried out pursuant to Regulation 5, is or will be, in the opinion of the appropriate highway authority, subject to noise caused in the manner and at a level described in Regulation 5(1);

“qualifying window” means a window in an eligible room which—

- (a) except in relation to insulation work carried out pursuant to Regulation 4(4) or 5, is in that part of a facade in respect of which the relevant noise level satisfies the requirements of Regulation 3(2);
- (b) in relation to work carried out pursuant to Regulation 4(4), is in a position which, in the opinion of the appropriate highway authority, is physically comparable with that of a qualifying door or qualifying window in another eligible building;
- (c) in relation to insulation work carried out pursuant to Regulation 5, is or will be, in the opinion of the appropriate highway authority, subject to noise caused in the manner and at a level described in Regulation 5(1).

##### Items required to be included in Insulation Work

2. Insulation work shall include the following items—

- (a) the replacement by or conversion to double windows in accordance with the specifications in paragraph 4 of this Schedule of all qualifying windows in each eligible room;
- (b) the provision and installation in each eligible room of a sound attenuating ventilator unit, in accordance with the specifications in paragraph 6 of this Schedule, including connecting the ventilator unit by wiring of not less than 5 amps capacity to the nearest convenient point in the existing electric supply circuit, or to the electric mains switchboard (provided that if the ventilator unit includes an electric heater, the wiring shall be of not less than 10 amps capacity);
- (c) the provision in an external wall of each eligible room of an air supply duct (with external cowl or grille), in accordance with the specification in paragraph 6 of this Schedule, for supplying fresh air to the ventilator unit from outside, and the blocking up of any existing airbrick in an external wall of the room (but flues and direct inlet ducts to combustion appliances shall not be blocked);
- (d) the provision in an external wall of each eligible room—

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- (i) where there is no combustion appliance in the room or where any one of the following combustion appliances and no other combustion appliance is in the room—
  - (A) a flued combustion appliance of total output rating less than 11.8 kw,
  - (B) a room sealed appliance,
  - (C) an open fire which is not capable of being used as a closed stove, or
  - (D) a gas cooker,of a permanent vent type A, conforming to the specifications in paragraph 7(5)(a) of this Schedule, communicating directly with the external air at the highest level which is reasonably practicable;
- (ii) where a flued combustion appliance of output rating of 11.8 kw or more is present in the room, of either—
  - (A) an appropriate number of permanent vents type A, each conforming to the specifications in paragraph 7(5)(a) of this Schedule, communicating directly with the external air and at the highest level which is reasonably practicable, to provide a total effective area which shall not be less than the effective area in square millimetres calculated from  $550H$  minus 3250 (where  $H$  is the total output rating in kilowatts of flued combustion appliances present in the room) provided that—
    - (I) the total effective area provided shall not be less than 3250 square millimetres, and
    - (II) the total effective area provided in square millimetres added to 3250 shall not be less than the cross-sectional area of flue connection in square millimetres; or
  - (B) a permanent vent type B, conforming to the specifications in paragraph 7(5)(b) of this Schedule, communicating directly with the external air at the highest level which is reasonably practicable and of an effective area which meets the requirements for total effective area in paragraph 2(d)(ii) (A) above;
- (iii) where more than one combustion appliance is present in the room, of either—
  - (A) a permanent vent type A or an appropriate number of permanent vents type A conforming to the specifications in paragraph 7(5)(a) of this Schedule, or
  - (B) a permanent vent type B conforming to the specifications in paragraph 7(5) (b) of this Schedule,communicating directly with the external air and at the highest level which is reasonably practicable, so as to introduce combustion air ventilation into the room in sufficient quantity to ensure the safe operation of the combustion appliances, provided that the total effective area provided by the permanent vent or vents shall not be less than 3250 square millimetres;
- (e) the provision where practicable of a second door behind each qualifying door, the shortest distance between the two doors to be not less than 150 millimetres, and at least one of the doors to be weather stripped, and the ceiling and walls between the doors to be lined with sound absorbent material; or, where it is not practicable to provide a second door, either—
  - (i) the provision of a new single door with improved noise insulation properties and, where appropriate, the weather stripping of the new door, or
  - (ii) the fitting of a second panel of glass behind any existing glazed panel in an existing door and the weather stripping of the door;

- (f) the provision of a venetian blind conforming to the specifications in paragraph 5 of this Schedule for each qualifying window which faces a direction within the 270° are between north-east and north-west;
- (g) where an eligible room contains a gas cooker and all the windows in that room are double windows, the provision of a fan failure valve for the gas cooker, which valve shall be so connected to the ventilator unit that the gas supply to the cooker will be cut off if the fan is not providing an adequate output for the room concerned, and so constructed that the re-starting of the fan after such failure cannot, of itself, re-start the flow of gas;

Provided that—

- (a) where a room to be insulated under these Regulations contains no combustion appliance or only a room sealed appliance the airpath through the ventilator system and vent type A may be made capable of being easily closed by a suitable means readily accessible within the room if in all other respects, including standard of construction and installation, the ventilator system and vent type A when opened to the maximum extent conform to the standards of ventilation and acoustic performance specified in paragraphs 6 and 7 of this Schedule, and, whether the airpath is opened or closed, meet the requirements for electrical and fire safety referred to therein;
- (b) where, in the opinion of the appropriate highway authority, it is not reasonable to require provision of any of the items specified in paragraph 2(b), (c) or (d) above the ventilation works may consist of the most practicable alternative works, so long as adequate provision is made for ventilation and for sufficient combustion air for the safe operation of any combustion appliances in the room; and
- (c) a claimant for insulation work who, having reasonable alternative means of solar control, desires to refuse an offer of venetian blinds, may do so without prejudicing his right to insulation work or a grant.

## PART II

### Items which may be included in Insulation Work

3. Insulation work may include the following items—
- (a) the provision of the items specified in paragraph 2(a), (e) and (f) of this Schedule for windows and doors, not being qualifying windows and doors, in an eligible room;
  - (b) making good the existing fabric and decorations (not including curtains) affected by the carrying out of insulation work under these Regulations, including the adaptation of any existing pelmet and curtain track.

## PART III

### Specification for Windows

4.—(1) The existing window shall either be retained and converted to a double window by the installation of a new inner window, or replaced by a new double window if this is essential, and the following conditions shall be complied with—

- (a) subject to the requirements of sub-paragraph (c) below, any gaps in the outer window shall be effectively sealed if this is possible by compressible resilient strip or other means;

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- (b) the inner window may be framed in wood, metal or plastic, shall be well fitted into the existing window reveal or planted on the wall face round the reveal, with the junction between wall and window frame fully sealed by means of mastic packing, cover strips or other equally effective means, and shall be glazed with glass having a thickness of not less than 3 millimetres;
- (c) both the outer and inner windows shall be adequately openable for direct ventilation when required, and the inner window shall be adequately openable for cleaning purposes, but the opening lights of the inner window shall be well sealed round their edges either by compressible resilient strip or other equally effective means;
- (d) if the window is a bay window or bow window the inner window shall either follow the shape of the outer window, or shall be taken straight across the bay or bow, and any projecting surround or window board required to close off the window cavity shall have a weight of not less than 10 kilogrammes per square metre;
- (e) at least two reveals of the window opening between the outer and inner window shall be lined with sound absorbent material;
- (f) the shortest distance, or, in the case of a bay window or bow window where the inner window is taken straight across the bay or bow, the mean horizontal distance, between the glass of the outer window and the glass of the inner window shall not be less than the distance specified in the second column of Table 1 below in relation to the thickness of glass of the inner window specified in the first column of that Table:

**TABLE 1**

Less than 4 mm and not less than 3 mm thick	200 mm
Less than 6 mm and not less than 4 mm thick	150 mm
6 mm thick or more	100 mm

(2) Where it is not practicable to comply with any of the specifications in this paragraph the most practicable alternative specification may be used, provided that in every case the windows shall be adequately openable for direct ventilation.

**Specification for Venetian Blinds**

5.—(1) A venetian blind, where fitted, shall be placed between the panes of double windows, and the following conditions shall be complied with—

- (a) the slat surface shall be white or near white;
- (b) the ratio of width to spacing of slats shall be between 1.15:1 and 1.25:1;
- (c) the blind shall have horizontal slats capable of being raised or lowered, and the angle of tilt of the slats shall be adjustable, the control being either—
  - (i) by a single continuous cord operating both the raising and lowering and tilting mechanisms from one end of the blind box, or
  - (ii) by controls for the raising and lowering and tilting mechanisms at either end of the blind box;
- (d) the controls specified in sub-paragraph (c) above shall, where practicable, be readily accessible within the room with the windows fully closed;
- (e) the opening for control cords shall be sealed or kept to the minimum necessary for smooth operation;

- (f) the blind box shall be fitted to the top window reveal or framehead between the panes of the double windows; and
- (g) the length of the slats shall be between 10 millimetres and 30 millimetres less than the width of the recess at its narrowest point, and the blind shall be capable of extending to the lowest level of the glazing of the outer window.

(2) Where it is not practicable to comply with any of the specifications in this paragraph the most practicable alternative specification may be used.

### **Specification for Ventilator System**

6. The ventilator system shall consist of a sound attenuating ventilator unit and an air supply duct protected by a cowl (or grille). The air supply duct and cowl (or grille) may be of separate construction from the ventilator unit or integral with it, but the following conditions shall be complied with—

- (a) the air supply duct and cowl (or grille) shall be designed to allow the passage of air between the ventilator unit and the external air at all times and shall be so constructed that when installed in a cavity wall exposed to the weather—
  - (i) the weather resistance of the cavity is retained, and
  - (ii) the external cowl (or grille) provides protection against the passage of snow, rain and vermin;
- (b) the ventilator unit shall consist of a controlled variable-speed inlet fan with sound attenuating duct and cover, shall be fitted with an easily removable and washable air filter on the inlet side of the sound attenuating duct to afford adequate protection for the acoustic lining, and shall be capable of supplying fresh air to the room directly from outside by means of the supply duct and cowl (or grille);
- (c) the ventilator unit shall be securely fixed to the wall in such a position that the air filter can be easily removed and the junction between the ventilator unit and the face of the wall shall be fully sealed by means of compressible strip or other equally effective means;
- (d) the air supply duct and cowl (or grille) shall be securely fixed to the wall and the junction between the air supply duct and the internal leaf shall be fully sealed by suitable means;
- (e) the ventilator unit shall be electrically safe in operation and maintenance and shall not present a fire hazard;
- (f) the ventilator unit (with air filter in position), by itself or with an integral air supply duct and cowl (or grille), shall be capable of giving variable ventilation rates ranging from—
  - (i) an upper rate of not less than 37 litres per second against a back pressure of 10 newtons per square metre and not less than 31 litres per second against a back pressure of 30 newtons per square metre, to
  - (ii) a lower rate of between 10 and 17 litres per second against zero back pressure;and if there is no continuous control of the ventilation rate, the following intermediate settings shall be provided—
  - (i) a ventilation rate of more than 31 and less than 33 litres per second against a back pressure of 10 newtons per square metre; and
  - (ii) a ventilation rate of more than 21 and less than 26 litres per second against a back pressure of 10 newtons per square metre;
- (g) the effective area of the air path through the ventilator system, with the fan switched off and the air filter in position, shall be not less than 3,250 square millimetres and shall be ascertained by measuring the static pressure difference across the ventilator system for

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various air flow rates through the ventilator system and calculating the effective area from 1270

$$Q \propto \sqrt{\delta p}$$

(where Q is the measured air flow rate through the ventilator system in litres per second and  $\delta p$  the measured static pressure difference across the ventilator system in newtons per square metre): effective areas shall be calculated for air flow through the ventilator system in both directions and the lower calculated value shall be taken for the effective area;

(h) the ventilator unit, by itself or integral with the air supply duct and cowl (or grille), shall be so constructed that—

(i) when it is in operation in any room the sound level in the room due to the operation of the unit at a ventilation rate of 31 litres per second against a back pressure of 10 newtons per square metre, measured at any point not nearer than 1 metre to the unit or to any of the room surfaces and normalised by the subtraction of

$$10 \log_{10} (10A)$$

(where A is the measured sound absorption in the room in square metre units at each  $\frac{1}{3}$  octave frequency interval from 100 to 3150 Hz), does not exceed 35 decibels on the A scale, and at the maximum ventilation rate of the unit against a back pressure of 30 newtons per square metre does not exceed 40 decibels on the A scale; and

(ii) the sound pressure level difference measured in accordance with British Standard specification for the measurement of sound transmission in buildings published on 31st May 1956 under the number BS2750: 1956 between two rooms separated by a solid wall (of area of not less than 10 square metres and of average mass, calculated over any portion of the wall measuring 1 square metre, of not less than 415 kilogrammes per square metre) incorporating the ventilator unit, normalised by the addition of

$$10 \log_{10} (10A)$$

(where A is the measured sound absorption in the receiving room in square metre units at each  $\frac{1}{3}$  octave frequency), is not less than the figure shown in Table 2 below except for total adverse deviations (at all  $\frac{1}{3}$  octave frequencies) not exceeding 32 decibels and an adverse deviation at any one  $\frac{1}{3}$  octave frequency not exceeding 8 decibels.

**TABLE 2**

<i><math>\frac{1}{3}</math> octave frequency band centre (Hertz)</i>	<i>normalised sound pressure level difference (Decibels)</i>
100	30
125	33
160	36
200	39
250	42
315	45
400	48
500	49

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<i>1/3 octave frequency band centre (Hertz)</i>	<i>normalised sound pressure level difference (Decibels)</i>
630	50
800	51
1000	52
1250	53
1600	53
2000	53
2500	53
3150	53

### Specifications for Permanent Vents

7.—(1) Every permanent vent shall consist of a sound attenuating purpose-made opening or duct which is designed to allow the passage of air between the room and the external air at all times, and shall have an external cowl (or grille) for protection against the passage of snow, rain and vermin. It shall be so constructed that when installed in a cavity wall exposed to the weather, the weather resistance of the cavity is retained and the acoustic performance of the vent is not impaired.

(2) The effective area of the air path through the permanent vent shall be ascertained by the method described in paragraph 6(g) above, save that for the words “ventilator system” in that paragraph there shall be substituted “permanent vent”.

(3) When installed the permanent vent shall be securely fixed to the wall and the junction between the vent and the face of the wall shall be fully sealed by means of compressible strip, mastic packing, cover strips or other equally effective means and where the vent has an air supply duct traversing a cavity wall the junction between the supply duct and the internal leaf shall be fully sealed by suitable means to prevent the passage of air to or from the cavity.

(4) Permanent vents shall be so constructed and installed as not to present a fire hazard.

(5) Every permanent vent shall either

(a) Vent type A

- (i) have an effective area, ascertained in accordance with sub-paragraph (2) above, of not less than 3250 square millimetres and not more than 6500 square millimetres; and
- (ii) be so constructed that the sound pressure level difference, ascertained by the method described in paragraph 6(h)(ii) above, complies with the requirements of that paragraph, save that for the words “ventilator unit” in that paragraph there shall be substituted “permanent vent”; or

(b) Vent type B

- (i) have an effective area, ascertained in accordance with sub-paragraph (2) above, of not less than 3250 square millimetres; and
- (ii) be so constructed that the sound pressure level difference, ascertained by the method described in paragraph 6(h)(ii) above, complies with the requirements of that paragraph, save that for the words “ventilator unit” in that paragraph there shall be substituted “permanent vent” and after the words “(where A is the measured sound absorption in the receiving room in square metre units at each 1/3 octave frequency)” there shall be added “and the addition of

$$10\# \log_{10} (S3250)$$

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(where S is the measured effective area of the permanent vent type B in square millimetres)”.

**Alternative specifications**

**8.** Where alternative methods are specified in this Schedule the most practicable method in the circumstances of the case shall be adopted.