

MCS NOISE ASSESSMENT FOR PROPOSED AIR SOURCE HEAT PUMPS: 45 HIGH ST, LITTLE WILBRAHAM.

TABLE 2: USE ONE TABLE FOR EACH ASSESSMENT POSITION TESTED

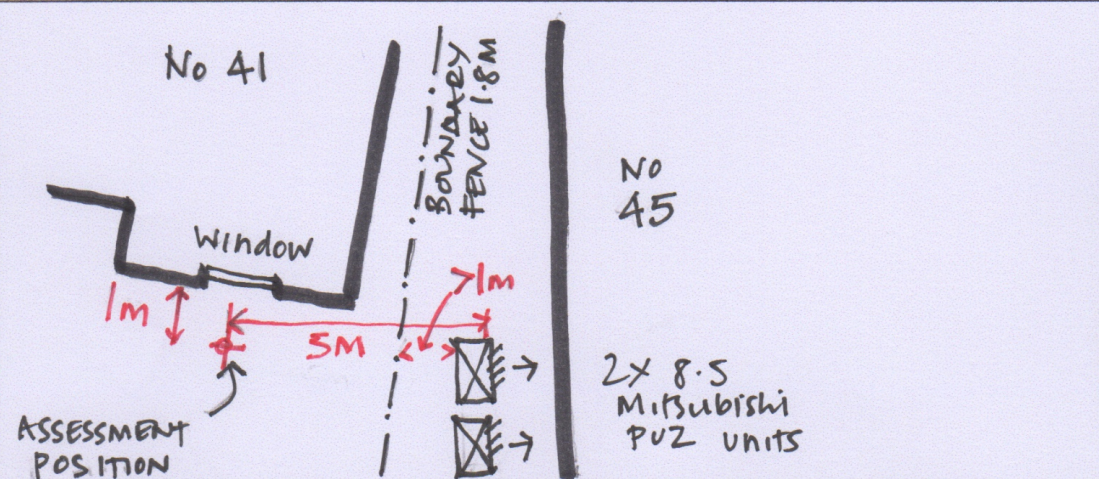
Date calculation undertaken:

Note: for the purposes of this calculation procedure:

- **Assessment position** means a position one metre external to the centre point of any door or window to a habitable room of a neighbouring property as measured perpendicular to the plane of the door or window.
- **Habitable room** means a room other than a bathroom, shower room, water closet or kitchen.
- **Neighbouring property.** Means any building used for any of the purposes of Class C of the Town and Country Planning (Use Classes) Order 1987 (as amended) (includes dwellings, houses, hotels, residential institutions and houses in multiple occupation). In instances where the air source heat pump would be installed on block of flats, neighbouring property includes flats within the same block of flats (excluding the flat of the "owner(s)" of the air source heat pump.

Description of assessment position tested

(This must be detailed enough to allow for identification, including property address and exact location of window / door opening and floor level. It is recommended that a map, sketch, photo or other record be attached to these workings.)



Example: The assessment position is the first floor bedroom window of 1 Oak Street and it is 4 metres away from the location of the proposed air source heat pump.

Step	Instructions	MCS contractor results / notes
1.	<p>From manufacturer's data, obtain the A-weighted sound power level of the heat pump. See 'Note 1: Sound power level'. The highest sound power level specified should be used (the power in "low noise mode" should not be used).</p> <p><i>Example: Manufacturer's data states the sound power level of the heat pump is 55 dB(A).</i></p>	<p>STEP 1 RESULT =</p> <p>48 dB(A)</p> <p>Mitsubishi figure for 2x8.5kW units in cascade arrangement.</p>
2.	<p>Use 'Note 2: Sound pressure level' and 'Note 3: Determination of directivity' below to establish the directivity 'Q' of the heat pump noise.</p> <p><i>Example: The heat pump is to be installed on the ground and against a single wall hence the directivity (Q) of the heat pump noise is Q4.</i></p>	<p>STEP 2 RESULT =</p> <p>Q2</p>
3.	<p>Measure the distance from the heat pump to the assessment position in metres.</p> <p><i>Example: Distance between heat pump and assessment position is 4 metres.</i></p>	<p>STEP 3 RESULT =</p> <p>5m</p>
4.	<p>Use table in 'Note 4: dB distance reduction' below to obtain a dB reduction.</p> <p><i>Example: 4metres @ Q4 = -17 db.</i></p>	<p>STEP 4 RESULT =</p> <p>-21 dB.</p>

5.	<p>Establish whether there is a solid barrier between the heat pump and the assessment position using '<u>Note 5: Barriers between the heat pump and the assessment position</u>' and note any dB reduction.</p> <p><i>Example: There is a brick wall between the heat pump and the assessment position. Moving less than 25cm enables the assessment position to be seen. dB reduction = -5 dB.</i></p>	<p>STEP 5 RESULT =</p> <p>1.8 m fence</p> <p>-10 dB</p>
6.	<p>Calculate the sound pressure level (see '<u>Note 2: Sound pressure level</u>') from the heat pump at the assessment position using the following calculation:</p> <p>(STEP 1) + (STEP 4) + (STEP 5)</p> <p><i>Example (55) + (-17) + (-5) = 55 - 17 - 5 = 33 dB(A) Lp</i></p>	<p>STEP 6 RESULT =</p> <p>(48) + (-21) + (-10)</p> <p>= 17 dB (A) Lp</p>
7.	<p>Background noise level. For the purposes of the MCS Planning Standard for air source heat pumps the background noise level is assumed to be 40 dB(A) Lp. For information see '<u>Note 6: MCS Planning Standard for air source heat pumps background noise level</u>'.</p> <p><i>Example: Background noise level is 40 dB(A).</i></p>	<p>STEP 7 RESULT =</p> <p>40 dB(A)</p>
8.	<p>Determine the difference between STEP 7 background noise level and the heat pump noise level using the following calculation:</p> <p>(STEP 7) - (STEP 6)</p>	<p>STEP 8 RESULT =</p> <p>40 - 17</p> <p>= 23 dB (A)</p>

	<p>Example: 40 dB(A) (background) - 33 dB(A) (heat pump) = 7dB(A).</p>	
9.	<p>Using the table in 'Note 7: Decibel correction' obtain an adjustment figure and then add this to whichever is the higher dB figure from STEP 6 and STEP 7. Round this number up to the nearest whole number.</p> <p>Example: Adjustment figure is 0.8 dB and the higher figure is 40 dB(A).</p> <p>$40 + 0.8 = 40.8 \text{ dB(A)}$</p> <p>Rounded up to 41 dB(A)</p> <p>Final result at this assessment position is 41 dB(A).</p>	<p>FINAL RESULT=</p> <p>Adjustment figure = 0.1</p> <p>Higher figure = 40 dB(A)</p> <p>$40 + 0.1 = 40.1 \text{ dB(A)}$</p> <p>round up to <u>41 dB(A)</u></p>
10.	<p>Is the FINAL RESULT in STEP 9 equal to or lower than the permitted development noise limit of 42.0 dB(A)?</p> <p>If YES - the air source heat pump will comply with the permitted development noise limit for this assessment position and may be permitted development (subject to compliance with other permitted development limitations/conditions and parts of this standard). NOTE - <u>Other assessment positions may also need to be tested.</u></p> <p>If NO - the air source heat pump will not be permitted development. This installation may still go ahead if planning permission is granted by the local planning authority.</p> <p>Example: 41 dB(A) is equal to or lower than 42.0 dB(A).</p>	<p>Final result is equal to or lower than 42.0 dB(A)</p> <p><input checked="" type="checkbox"/> YES NO (delete as appropriate)</p> <p>(PASSES)</p>