Air Source Heat Pump Noise Level Calculation Form

Step	Instructions	MCS Contractors Results
1.	From manufacturers data, obtain the A-weighted sound power level of the heat pump. See “Note 1: Sound Power Level” below. The highest sound power level specified should be used (the power in “low noise mode” should not be used).	55
2.	Use “Note 2: Sound Pressure level” and “Note 3: Determination of directivity” below to establish the directivity “Q” of the heat pump noise.	Q4 - "Two Reflective Surfaces"
3.	Measure the distance from the heat pump to the assessment position in metres.	6
4.	Use table in “Note 4: dB distance reduction” below to obtain a dB reduction.	-20
5.	Establish whether there is a solid barrier between the heat pump and the assessment position using “Note 5: Barriers between the heat pump and the assessment position” and note any dB reduction.	Barrier (partial view)
6.	Calculate the sound pressure level (see Note 2: Sound pressure level”) from the heat pump at the assessment position using the following calculation: (STEP 1) + (STEP 4) + (STEP 5)	30
7.	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 “Note 6: MCS Planning Standard for air source heat pumps background noise level”	40

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8.	Determine the difference between STEP 7 background noise level and the heat pump noise level using the following calculation: (STEP 7) – (STEP 6)	10
9.	Using the table in "Note 7: Decibel correction" obtain an adjustment figure and then add this to whichever is higher dB figure from STEP 6 and STEP 7. Round this number up to the nearest whole number.	41
10.	Is the FINAL RESULT in STEP 9 lower than the permitted development noise limit of 42 dB (A)? 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 the MCS 020 standard.) NOTE – other assessment positions may also need to be tested. 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.	YES