

STEP	INSTRUCTIONS	INSTALLER RESULTS / NOTES
1.	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). <i>Example: Manufacturer's data states the sound power level of the heat pump is 55 dB(A).</i>	STEP 1 RESULT = 63 dBA Main unit + 3 dBA 2nd plant + 3 dBA 3rd plant = 69 dBA
2.	Use 'Note 2: Sound pressure level' and 'Note 3: Determination of directivity' below to establish the directivity 'Q' of the heat pump noise. <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>	STEP 2 RESULT = Q 8
3.	Measure the distance from the heat pump to the assessment position in metres. <i>Example: Distance between heat pump and assessment position is 4 metres.</i>	STEP 3 RESULT = 15 m
4.	Use table in 'Note 4: dB distance reduction' below to obtain a dB reduction. <i>Example: 4metres @ Q4 = -17 dB.</i>	STEP 4 RESULT = -25
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. <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>	STEP 5 RESULT = POSITION NOT VISABLE -10
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) <i>Example (55) + (-17) + (-5) = 55 - 17 - 5 = 33 dB(A) Lp</i>	STEP 6 RESULT = 69 - 25 - 10 = 34

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 '<u>Note 6: MCS Planning Standard for air source heat pumps background noise level</u>'. <i>Example: Background noise level is 40 dB(A).</i>	STEP 7 RESULT = 40 dB(A)
8.	Determine the difference between STEP 7 background noise level and the heat pump noise level using the following calculation: (STEP 7) – (STEP 6) <i>Example: 40 dB(A) (background) – 33 dB(A) (heat pump) = 7dB(A).</i>	STEP 8 RESULT = $40 - 34 = 6$
9.	Using the table in '<u>Note 7: Decibel correction</u>' 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. <i>Example: Adjustment figure is 0.8 dB and the higher figure is 40 dB(A).</i> $40 + 0.8 = 40.8 \text{ dB(A)}$ Rounded up to 41 dB(A) Final result at this assessment position is 41 dB(A).	FINAL RESULT= $40 + 1 = 41 \text{ dB(A)}$
10.	Is the FINAL RESULT in STEP 9 lower than the permitted development noise limit of 42 dB(A)? If <u>YES</u> - 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). <u>NOTE - Other assessment positions may also need to be tested.</u> If <u>NO</u> – 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. <i>Example: 41 dB(A) is lower than 42 dB(A).</i>	Final result is lower than 42 dB(A) YES / ~~NO~~ (delete as appropriate)

TEST 2 (SEA NOISE)

STEP	INSTRUCTIONS	INSTALLER RESULTS / NOTES
1.	From manufacturer's data, obtain the A-weighted sound power level of the heat pump. See '<u>Note 1: Sound power level</u>'. The highest sound power level specified should be used (the power in "low noise mode" should not be used). <i>Example: Manufacturer's data states the sound power level of the heat pump is 55 dB(A).</i>	STEP 1 RESULT = 63 dBA MAIN PLANT + 3 dBA 2nd PLANT + 3 dBA 3rd PLANT = 69 dBA
2.	Use '<u>Note 2: Sound pressure level</u>' and '<u>Note 3: Determination of directivity</u>' below to establish the directivity 'Q' of the heat pump noise. <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>	STEP 2 RESULT = Q 8
3.	Measure the distance from the heat pump to the assessment position in metres. <i>Example: Distance between heat pump and assessment position is 4 metres.</i>	STEP 3 RESULT = 12 m
4.	Use table in '<u>Note 4: dB distance reduction</u>' below to obtain a dB reduction. <i>Example: 4metres @ Q4 = -17 dB.</i>	STEP 4 RESULT = - 23
5.	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. <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>	STEP 5 RESULT = POSITION NOT VISABLE -10
6.	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: (STEP 1) + (STEP 4) + (STEP 5) <i>Example (55) + (-17) + (-5) = 55 - 17 - 5 = 33 dB(A) Lp</i>	STEP 6 RESULT = 69 - 23 - 10 = 36

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 '<u>Note 6: MCS Planning Standard for air source heat pumps background noise level</u>'. <i>Example: Background noise level is 40 dB(A).</i>	STEP 7 RESULT = 40 dB(A)
8.	Determine the difference between STEP 7 background noise level and the heat pump noise level using the following calculation: (STEP 7) – (STEP 6) <i>Example: 40 dB(A) (background) – 33 dB(A) (heat pump) = 7dB(A).</i>	STEP 8 RESULT = 40 - 36 = 4
9.	Using the table in '<u>Note 7: Decibel correction</u>' 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. <i>Example: Adjustment figure is 0.8 dB and the higher figure is 40 dB(A).</i> <i>40 + 0.8 = 40.8 dB(A).</i> <i>Rounded up to 41 dB(A)</i> <i>Final result at this assessment position is 41 dB(A).</i>	FINAL RESULT= 40 + 1.5 = 41.5 dBA
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 this standard). <u>NOTE - Other assessment positions may also need to be tested.</u> 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. <i>Example: 41 dB(A) is lower than 42 dB(A).</i>	Final result is lower than 42 dB(A) YES / ~~NO~~ (delete as appropriate)