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MCS 020 - Manual Sound Calculator

Step	Instructions	MCS contractor 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).** *Example.: Manufacturer's data states the sound power level of the heat pump is 55 dB(A)*	**58**
2	**Use 'Note 2: Sound pressure level' and 'Note 3: Determination of directivity' below to establish the directivity 'Q' of the heat pump noise.** *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*	**Q4**
3	**Measure the distance from the heat pump to the assessment position in metres** *Example. Distance between heat pump and assessment position is 4 metres.*	**4**
4	**Use table in 'Note 4: dB distance reduction' below to obtain a dB reduction** *Example. 4metres@ Q4 = -17 db*	**-16.8**
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.** *Example. There is a brick wall between the heat pumpand the assessment position Moving less than 25cm enables the assessment position to be seen dB reduction = -5 dB*	**0**
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)** *Example (55) + (-17) + (-5)=55 -17- 5 =33 dB(A) Lp*	**41.2**
7	**Background noise level. For the purposes of the MCS Planning Standard for air source heat pumps 40 dB(A) 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'.** *Example. Background noise level is 40 dB(A)*	**37**
8	**Determine the difference between background noise level and the heat pump noise level using the following calculation: (STEP 7) - (STEP 6)** *Example: 40 db(A) (background) - 33 dB(A) (heat pump) = 7dB(A)*	**-4.2**
9	**Using the table in 'Note 7: Decibel correction' obtain an adjustment figure and then add this to whiever is the higher dB figure from STEP 6 and STEP 7. Round to nearest whole number** *Example: Adjustment figure is 0.8 dB and higher figure is 40db(A)* *40 + 0.8 = 40.8 dB(A)* *Rounded up to 41 dB(A)* *Final result at this assessment position is 41db(A)*	**42.60**
10	**Final Result? (Greater or equal to 42 dB(A) is under PD)**	**Fail - Planning**

Distance	4
Barrier	Fully Seen
Heat Pump	Cosy6
Reflecting Surfaces	1
	42.60
	Fail - Planning Required

-	File -> Make a copy -> Rename and select (My Drive)
1	You can now put in the precise distance to the assessment window including decimal places
2	Barriers, Heat Pump and Reflecting surfaces form Kracken Field heat pump and noise assessment tabs
3	Update Client name and address plus any other relevant details
4	Select all cells A3:C17 and File -> Download -> PDF (.pdf)
5	In the export settings choose Secected Cells, A4, Portrait, Fit to Page, Wide margins and deselect Show grid lines
6	Hit export and give it a useful filename!