

HGY/2022/2117
3 Warham Road
Tom Fotheringham
06/04/2023

Information submitted in relation to the discharge of the planning condition identified below

HGY/2023/0191 - Non-material amendment to planning permission HGY/2022/2117
Condition 4:

"Prior to its installation details of the air source heat pump shall be submitted to and approved in writing by the Local Planning Authority. Details shall include a noise assessment report, including acoustic data to demonstrate that the noise level from the operation of the air source heat pump hereby approved must not exceed 42dB LAeq (5 min) at 1 metre from the window of a habitable room on the façade of any neighbouring residential property. If, in the opinion of the Local Planning Authority the proposed air source heat pump will result in any noise nuisance to the occupant of any neighbouring dwelling the Applicant shall install noise mitigation measures in agreement with the Planning Authority. The development shall thereafter be carried out in accordance with such details as may be approved or any other approved details as submitted to the Local Planning Authority if an alternative to the chosen renewable energy is to be installed."

Statement on the discharge of this condition:

The condition requires that the **sound pressure level (LAeq)** of the heat pump must not exceed 42dB at a distance of 1 metre from the window of a habitable room on the façade of any residential neighbouring property.

The model of heat pump chosen for the project has been specifically selected because it is a Quiet Mark certified product*, and one of the quietest heat pumps available on the market. The proposed heat pump has a measured sound pressure level LAeq of 42 dB, measured at a distance of 1 metre from the heat pump.

To comply with the requirements of the condition, the heat pump would therefore need to be a minimum of 2 metres from the nearest neighbouring window. The heat pump will be more than 2m from all site boundaries. Please refer to drawing WAR_PL_005 (submitted separately) for the proposed location of the heat pump. This also identifies the nearest neighbouring window with line of sight to the heat pump (and therefore the window most likely to be affected by the heat pump), which is 4.8 metres away. At 1m from this window (3.8m distance), the sound pressure level of the heat pump is calculated 36 dB.

To prevent any structural-borne vibrations, the heat pump will be mounted on anti-vibration feet, on concrete slabs, on an anti-vibration rubber mat, which sits on top of the roof. This is in compliance with the manufacturer's recommended installation for the heat pump.

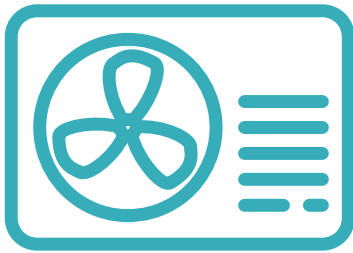
The following pages contain a noise assessment prepared by the MCS certified installer for the heat pump, and pages from the data book for the heat pump from the manufacturer with the acoustic data included. The noise assessment report demonstrates that the noise level of the heat pump would be compliant with the standards required for permitted development.

*Acoustic product data is compared like for like in each category triangulating the core performance data of the product with its acoustic performance. From a comprehensive data set of a selection of current comparable market samples for each category, between 10% to 20% of the quietest best performing products are awarded Quiet Mark certification. Each product category is re-evaluated annually to reflect new models coming on to the market. For more information, refer to: <https://www.quietmark.com/products/awarded-products/centralheating/heatpumps/samsung-ehs-mono-ht-heat-pump>

**Sound level check by proposed installer
(Meco Homes)**

Meco Homes are MCS accredited installers, certified for the installation of Air Source Heat Pumps

Certification Number: NIC-600220



Heat pump

Samsung HT Quiet 8kW

Model: AE080BXYDEG/EU

Specifications

ENA registration number	HP_0919
Proposed flow temperature	44 °C
Nominal output	8.00 kW
Actual output at 44 °C	7.97 kW
Heating SCOP at 44 °C	3.9
Sound power level	56.0 dB



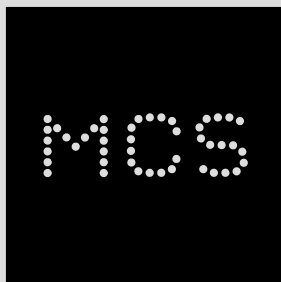
Heat pump sizing

The heat pump is sufficiently large to meet the maximum anticipated space heating demand.





Sound level check



The sound check assesses how much sound from the heat pump will be transmitted to neighbouring properties. If the likely sound level is less than 42dB then the installation can usually proceed without a planning application under the 'permitted development' rules.

Full details on the method used can be found in the MCS020 document on the MCS website.

MCS020 sound level calculation

1. Sound power level (dB)	56.0
2. Sound pressure level (dB)	Q2 (one reflective surface)
3. Distance from heat pump to assessment position (meters)	3.8
4. dB Distance Reduction	-20
5. Barriers Between heat pump and assessment position	Visible
6. Sound pressure level @ assessment position (dB)	36
7. Background noise level (dB)	40
8. Differential between 6. & 7.	4
9. Decibel Correction (dB)	1.5
10. Final Result (dB)	42



Sound check

The max sound pressure at the assessment position is expected to be within the permitted development threshold of 42dB. A planning application is not required.



**Excerpts from Technical Data Book for the proposed
Samsung Air Source Heat Pump**

Note: this data book covers all models within the Samsung range. The model proposed is the smallest (and quietest) available. For clarity and ease of use in this document, the proposed model has been highlighted in red.

2. Outdoor Units

2-1. Specifications

Model Name		Indoor Unit		AE200RNWMEG/EU	AE200RNWMEG/EU	AE200RNWMEG/EU
		Outdoor Unit		AE080BXYDEG/EU	AE120BXYDEG/EU	AE140BXYDEG/EU
Outdoor Unit	Heat exchanger	Length		mm	1,224/1,195	1,216/1,187/1,159
		Rows	Quantity	EA	2	3
		Fin pitch		mm	1.5	1.5
		Passes	Quantity	EA	8	11
		Face area		m ²	1.15	1.15
		Stages	Quantity	EA	46	46
		Empty tubeplate hole	Quantity	EA	-	-
		Tube type		Φ	7	7
		Fin	Type	-	Corrugate	Corrugate
			Treatment	-	Anti Salt	Anti Salt
	Fan	Type		-	Propeller Fan	Propeller Fan
		Discharge direction		-	Horizontal	Horizontal
		Air Flow Rate	Heating	m ³ /min	92	95
			Cooling	m ³ /min	85	90
		Quantity		EA	1	1
	Fan motor	Quantity		EA	1	1
		Model		-	SIC-88FWJ-F1122-1	SIC-88FWJ-F1122-1
		Output		W	122	122
		Drive		-	Direct drive	Direct drive
		Speed	Steps	-	-	-
			Heating	rpm	550	590
	Sound	Sound Pressure	Heating	dB(A)	42	46
			Cooling	dB(A)	42	46
			Night Mode(3m)	dB(A)	35	35
		Sound Power	Heating	dB(A)	56	59
			Cooling	dB(A)	56	59
	Connections	Water pipe	inlet	Φ, inch	BSPP male 1	BSPP male 1
			outlet	Φ, inch	BSPP male 1	BSPP male 1
	Casing	Color		-	Shadow Gray	Shadow Gray
		Material		-	GI-SGCC	GI-SGCC
	Packing	Material		-	EPS/BOX	EPS/BOX
		Weight		kg	20.0	20.0
	External Dimension	Net Weight		kg	126.0	137.0
		Shipping Weight		kg	146.0	157.0
		Net Dimensions(WxHxD)		mm	1,270 x 1,018 x 530	1,270 x 1,018 x 530
		Shipping Dimensions(WxHxD)		mm	1,330 x 1,226 x 630	1,330 x 1,226 x 630
	Operating Temp. Range	Heating		°C	-30 ~ 43	-30 ~ 43
		Cooling		°C	10 ~ 46	10 ~ 46
		D.Hot Water		°C	-30 ~43	-30 ~43

NOTE

- Specifications may be subject to change without prior notice.
- 1) A2W Condition #1 : (Heating) Water In/Out 30°C/35°C, Outdoor Air 7°C[DB]/6°C[WB];
(Cooling) Water In/Out 23°C/18°C, Outdoor Air 35°C[DB].
- 2) A2W Condition #2 : (Heating) Water In/Out 40°C/45°C, Outdoor Air 7°C[DB]/6°C[WB];
(Cooling) Water In/Out 12°C/7°C, Outdoor Air 35°C[DB].
- 3) A2W Condition #3 : (Heating) Water In/Out 47°C/55°C, Outdoor Air 7°C[DB]/6°C[WB].
- 4) A2W Condition : (A2W35) Water In/Out -/35°C, Outdoor Air 2°C[DB]/1°C[WB];
(A-7/W35) Water In/Out -/35°C, Outdoor Air -7°C[DB]/-(* Peak Capacity)
- 5) Select wire size based on the value of MCA
- 6) Soundpressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20uPa
- 7) Sound power level is an absolute value that a sound source generates.
 - dBA = A-weighted Sound power level
 - Reference power : 1pW
 - Measured according to ISO 3741
- 8) These products contain R32 (GWP=675) which is fluorinated greenhouse gas.
- 9) The system is operated in (-25°C ≤ Outdoor temp. < -20°C) condition, but no guarantee of capacity.
- 10) The system is operated by only Booster Heater in special condition (35 °C < Outdoor temp. ≤ 43°C).

2. Outdoor Units

2-6. Sound data

Summary

Capacity (kW)	Model	Sound Pressure dB(A)		Sound Power dB(A)
		Cooling	Heating	Heating
8.0	AE080BXYDEG/EU	42	42	56
12.0	AE120BXYDEG/EU	46	46	59
14.0	AE140BXYDEG/EU	47	47	60
8.0	AE080BXYDGG/EU	42	42	56
12.0	AE120BXYDGG/EU	46	46	59
14.0	AE140BXYDGG/EU	47	47	60

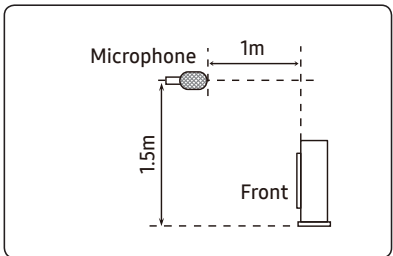
NOTE

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2. Outdoor Units

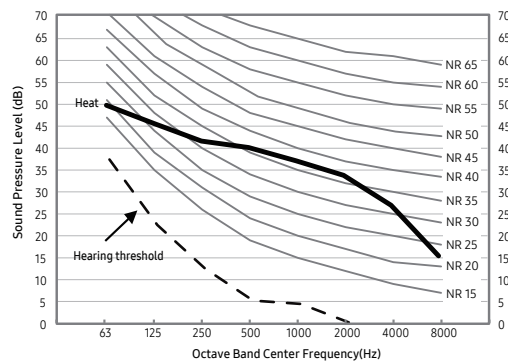
2-6. Sound data

Sound Pressure level

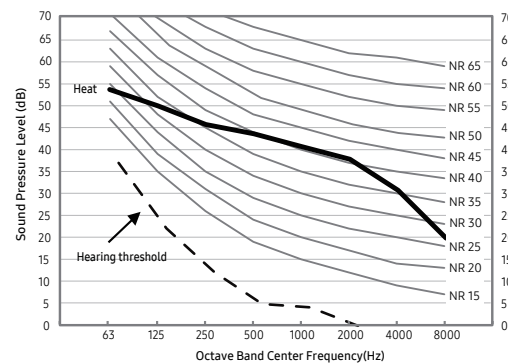


- NR Curve

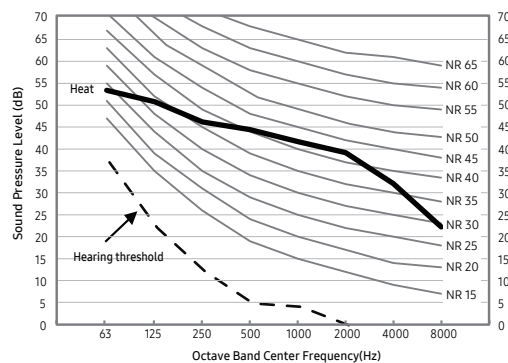
1) AE080BXYDEG/EU



2) AE120BXYDEG/EU



3) AE140BXYDEG/EU



Unit: dB(A)

Model	Cooling	Heating
AE080BXYDEG/EU	42	42
AE120BXYDEG/EU	46	46
AE140BXYDEG/EU	47	47