

36 Noise

36.1 Purpose

The purpose of this chapter is to manage the effects of noise in the District. Noise is part of the environment. While almost all activities give rise to some degree of noise, noise can cause adverse effects on amenity values and the health and wellbeing of people and communities. Adverse effects may arise where the location, character, frequency, duration, or timing of noise is inconsistent or incompatible with anticipated or reasonable noise levels.

The Resource Management Act 1991 (RMA) requires every occupier of land and every person carrying out an activity to adopt the best practicable option to ensure noise does not exceed a reasonable level. The RMA also defines noise to include vibration. “Reasonable” noise levels are determined by the standard of amenity and ambient noise level of the receiving environment and the Council provides direction on this through the prescription of noise limits for each Zone. Noise is also managed by the Council through the use of relevant New Zealand Standards for noise. Land use and development activities, including activities on the surface of lakes and rivers, should be managed in a manner that avoids, remedies or mitigates the adverse effects of noise to a reasonable level.

In most situations, activities should consider the control of noise at the source and the mitigation of adverse effects of noise on the receiving environment. However, the onus on the reduction of effects of noise should not always fall on the noise generating activity. In some cases it may be appropriate for the noise receiver to avoid or mitigate the effects from an existing noise generating activity, particularly where the noise receiver is a noise sensitive activity.

Overflying aircraft have the potential to adversely affect amenity values. The Council controls noise emissions from airports, including take-offs and landings, via provisions in this District Plan, and Designation conditions. However, this is different from controlling noise from aircraft that are in flight. The RMA which empowers territorial authorities to regulate activities on land and water affecting amenity values, does not enable the authorities to control noise from overflying aircraft. Noise from overflying aircraft is controlled under section 29B of the Civil Aviation Act 1990.

With the exception of ventilation requirements for the Queenstown and Wānaka town centres contained in Rule 36.7, and noise from water and motor-related noise from commercial motorised craft within the Queenstown Town Centre Waterfront Sub-Zone (which is subject to Rule 36.5.13) noise received within town centres is not addressed in this chapter, but rather in the Queenstown, Wānaka and Arrowtown Town Centre Zone chapters. This is due to the town centre-specific complexities of noise in those zones, and its fundamental nature as an issue that inter-relates with all other issues in those zones. Noise generated in the town centres but received outside of the town centres is managed under this chapter, except that noise from music, voice and loudspeakers in the Wānaka and Queenstown Town Centres (excluding the Queenstown Town Centre Transition Sub-Zone), need not meet the noise limits set by this chapter.

36.2 Objectives and Policies

36.2.1 Objective - The adverse effects of noise emissions are controlled to a reasonable level to manage the potential for conflict arising from adverse noise effects between land use activities.

Policies

36.2.1.1 Avoid, remedy or mitigate adverse effects of unreasonable noise from land use and development.

36.2.1.2 Avoid, remedy or mitigate adverse noise reverse sensitivity effects.

36.3 Other Provisions

36.3.1 District Wide

Attention is drawn to the following District Wide Chapters.

1 Introduction	2 Definitions	3 Strategic Direction
4 Urban Development	5 Tangata Whenua	6 Landscapes and Rural Character
25 Earthworks	26 Historic Heritage	27 Subdivision
28 Natural Hazards	29 Transport	30 Energy and Utilities
31 Signs	32 Protected Trees	33 Indigenous Vegetation
34 Wilding Exotic Trees	35 Temporary Activities and Relocated Buildings	37 Designations
District Plan web mapping application		

36.3.2 Interpreting and Applying the Rules

36.3.2.1 Any activity that is not permitted requires resource consent. Any activity that does not specify an activity status for non-compliance but breaches a standard, requires resource consent as a Non-complying activity.

36.3.2.2 Sound levels shall be measured and assessed in accordance with NZS 6801:2008 Acoustics - Measurement of Environmental Sound and NZS 6802:2008 Acoustics - Environmental Noise, except where another Standard has been referenced in these rules, in which case that Standard should apply.

36.3.2.3 Any activities which are Permitted, Controlled or Restricted Discretionary in any section of the District Plan must comply with the noise standards in Tables 2, 3, 4 and 5 below, where that standard is relevant to that activity. Where the noise is from Plantation Forestry the Resource Management (National Environment Standard for Plantation Forestry) Regulations 2017 shall prevail.

36.3.2.4 In addition to the above, the noise from the activities listed in Table 1 shall be Permitted activities in all zones (unless otherwise stated). For the avoidance of doubt, the activities in Table 1 are exempt from complying with the noise standards set out in Table 2.

36.3.2.5 Notwithstanding compliance with Rules 36.5.13 (Helicopters) and 36.5.14 (Fixed Wing Aircraft) in Table 3, informal airports shall also be subject to the rules in the chapters relating to the zones in which the activity is located.

36.3.2.6 Sound from non-residential activities, visitor accommodation activities and sound from stationary electrical and mechanical equipment must not exceed the noise limits in Table 2 in each of the zones in which sound from an activity is received. The noise limits in Table 2 do not apply to assessment locations within the same site as the activity.

- 36.3.2.7 The noise limits contained in Table 2 do not apply to sound from aircraft operations at Queenstown Airport or Wānaka Airport.
- 36.3.2.8 Noise standards for noise received in the Queenstown, Wānaka and Arrowtown Town Centre, Local Shopping and Business Mixed Use zones are not included in this chapter. Please refer to Chapters 12, 13, 14, 15 and 16. The noise standards in this chapter still apply for noise generated within these zones but received in other zones, except that noise from music, voices, and loud speakers in the Wānaka and Queenstown Town Centres (excluding the Queenstown Town Centre Transition Sub-Zone) need not meet the noise limits set by this chapter.
- 36.3.2.9 The standards in Table 3 are specific to the activities listed in each row and are exempt from complying with the noise standards set out in Table 2.
- 36.3.2.10 The following abbreviations are used in the tables:

P	Permitted	C	Controlled
D	Discretionary	NC	Non-Complying

36.4 Rules - Activities

Table 1 - Permitted Activities

Rule Number	Permitted Activities	Activity Status
36.4.1	Sound from vehicles on public roads or trains on railway lines (including at railway yards, railway sidings or stations).	P
36.4.2	Any warning device that is activated in the event of intrusion, danger, an emergency or for safety purposes, provided that vehicle reversing alarms are a broadband directional type.	P
36.4.3	Sound arising from fire stations (including rural fire stations), fire service appliance sirens and call-out sirens for volunteer brigades.	P
36.4.4	Sound from temporary military training activities.	P
36.4.5	In the Rural Zone and the Gibbston Character Zone and the Gibbston Valley Resort Zone, sound from farming and forestry activities, and bird scaring devices, other than sound from stationary motors and stationary equipment.	P
36.4.6	Sound from telecommunications cabinets in road reserve.	P
36.4.7	Sound from emergency and backup electrical generators: <ol style="list-style-type: none"> a. operating for emergency purposes or; b. operating for testing and maintenance for less than 60 minutes each month during a weekday between 0900 and 1700. 	P

Rule Number	Permitted Activities	Activity Status
	For the purpose of this rule backup generators are generators only used when there are unscheduled outages of the network (other than routine testing or maintenance provided for in (b) above).	

36.5 Rules- Standards

Table 2: General Standards

Rule Number	General Standards				Non-compliance Status
	Zone sound is received in	Assessment location	Time	Noise Limits	
36.5.1	Wakatipu Basin Rural Amenity Zone	Any point within the notional boundary of a residential unit.	0800h to 2000h	50 dB LAeq(15 min)	NC
	Rural Zone (Note: refer 36.5.14 for noise received in the Rural Zone from the Airport Zone - Queenstown). Gibbston Character Zone Airport Zone – Wānaka Gibbston Valley Resort Zone - AA1, AA2, AA4, AA7, PL, LMA and OSR Activity Areas		2000h to 0800h	40 dB LAeq(15 min) 75 dB LAFmax	

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Rule Number	General Standards				Non-compliance Status
	Zone sound is received in	Assessment location	Time	Noise Limits	
36.5.2	Wakatipu Basin Lifestyle Precinct	Any point within any site.	0800h to 2000h	50 dB LAeq(15 min)	NC
	Hills Resort Zone (Note: for noise received in the Hills Resort Zone, the noise limits specified do not apply to noise from activities within the Hills Resort Zone) Hogans Gully Resort Zone (Note: for noise received in the Hogans Gully Resort Zone, the noise limits specified do not apply to noise from activities within the Hogans Gully Resort Zone) Low, Medium, and High Density and Large Lot Residential Zones (Note: refer 36.5.14 for noise received in the Residential Zones from the Airport Zone - Queenstown). Arrowtown Residential Historic Management Zone Settlement Zone Rural Residential Zone Rural Lifestyle Zone Waterfall Park Zone Millbrook Resort Zone - Residential Activity Areas only		2000h to 0800h	40 dB LAeq(15 min)	NC

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Rule Number	General Standards				Non-compliance Status
	Zone sound is received in	Assessment location	Time	Noise Limits	
	Jacks Point Zone- Residential Activity Areas only Open Space and Recreation Zones, Gibbston Valley Resort Zone – AA3, AA5, AA6 and AA8. Rural Visitor Zone				
36.5.3	Airport Zone - Queenstown	At any point within the zone.	Any time	No limit	P
36.5.4	Jacks Point Zone - Village Activity Area only	Any point within any site.	0800h to 2200h	60 dB L _{Aeq(15 min)}	NC
			2200h to 0800h	50 dB L _{Aeq(15 min)}	NC
36.5.5	Civic Spaces Zone where it adjoins the Queenstown, Wānaka, or Arrowtown Town Centre Zones	Any point within any site.	0800h to 2200h	60 dB L _{Aeq(15 min)}	NC
			2200h to 0800h	50 dB L _{Aeq(15 min)}	
				75 dB LAF _{max}	

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Table 3: Specific Standards

Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
36.5.6	<p>Certain Telecommunications Activities in Road Reserve</p> <p>The Resource Management (National Environmental Standards for Telecommunications Facilities “NESTF”) Regulations 2008 provide for noise from telecommunications equipment cabinets located in the road reserve as a permitted activity, subject to the specified noise limits.</p> <p>The noise from the cabinet must be measured in accordance with NZS 6801: 2008 Acoustics – Measurement of environmental sound, the</p>	<p>36.5.6.1 Where a cabinet located in a road reserve in an area in which allows residential activities, the noise from the cabinet must be measured and assessed at 1 of the following points:</p> <p>a. if the side of a building containing a habitable room is within 4m of the closest</p>	0700h to 2200h	50 dB $L_{Aeq(5\ min)}$	Refer NESTF
			2200h to 0700h	40 dB $L_{Aeq(5\ min)}$	

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Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
	measurement must be adjusted in accordance with NZS 6801: 2008 Acoustics – Measurement of environmental sound to a free field incident sound level, and the adjusted measurement must be assessed in accordance with NZS 6802: 2008 Acoustics – Environmental noise.	boundary of the road reserve, the noise must be measured: <ul style="list-style-type: none"> i. at a point 1m from the side of the building; or ii. at a point in the plane of the side of the building; 	2200h to 0700h	65 dB L _{AFmax}	
		b. in any other case, the noise must be measured at a point that is: <ul style="list-style-type: none"> i. at least 3 m from the cabinet; and ii. within the legal boundary of land next to the part of the road reserve where the cabinet is located. 			
		36.5.6.2 Where a cabinet is located in a road reserve in an area in which does not allow residential activities, the noise from the cabinet must be measured and	Any time	60 dB L _{Aeq(5 min)}	
			2200h to 0700h	65 dB L _{AFmax}	

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Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
		<p>assessed at 1 of the following points:</p> <ul style="list-style-type: none"> a. if the side of a building containing a habitable room is within 4 m of the closest boundary of the road reserve, the noise must be measured: <ul style="list-style-type: none"> i. at a point 1 m from the side of the building; or ii. at a point in the plane of the side of the building; b. in any other case, the noise must be measured at a point that is: <ul style="list-style-type: none"> i. at least 3 m from the cabinet; and ii. within the legal boundary of land next to the part of the road reserve where the cabinet is located. 			
36.5.7	Wind Turbines	At any point within the notional boundary of any residential unit.	Any time	40 dB LA90(10 min) or the	NC

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Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
	Wind farm sound must be measured and assessed in accordance with NZS 6808:2010 Acoustics - Wind Farm Noise			background sound level L _{A90(10 min)} plus 5 dB, whichever is higher	
36.5.8	<p>Audible Bird Scaring Devices</p> <p>The operation of audible devices (including gas guns, audible avian distress alarms and firearms for the purpose of bird scaring, and excluding noise arising from fire stations).</p> <p>In relation to gas guns, audible avian distress alarms and firearms no more than 15 audible events shall occur per device in any 60 minute period.</p> <p>Each audible event shall not exceed three sound emissions from any single device within a 1 minute period and no such events are permitted during the period between sunset and sunrise the following day.</p> <p>The number of devices shall not exceed one device per 4 hectares of land in any single land holding, except that in the case of a single land holding less than 4 hectares in area, one device shall be permitted.</p>	36.5.8.1	At any point within a Residential Zone or the notional boundary of any residential unit, other than on the property in which the device is located, or any residential unit or visitor accommodation activity within the Gibbston Valley Resort Zone.	Hours of daylight but not earlier than 0600h	65 dB L _{AE} shall apply to any one event
		36.5.8.2	In any public place.	At any time	90 dB L _{AE} is received from any one noise event

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Rule Number	Specific Standards				Non-compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
36.5.9	Frost fans Sound from frost fans.	At any point within the notional boundary of any residential unit, other than residential units on the same site as the activity, or any residential unit or visitor accommodation activity within the Gibbston Valley Resort Zone.	At any time	55 dB L _{Aeq} (15 min)	NC
36.5.10	Vibration Vibration from any activity shall not exceed the guideline values given in DIN 4150-3:1999 Effects of vibration on structures at any buildings on any other site.	On any structures or buildings on any other site.	Refer to relevant standard	Refer to relevant standard	NC
36.5.11	Helicopters Sound from any helicopter landing area must be measured and assessed in accordance with NZ 6807:1994 Noise Management and Land Use Planning for Helicopter Landing Areas. In assessing noise from helicopters using NZS 6807: 1994 any individual helicopter flight movement, including continuous idling occurring between an arrival and departure, shall be measured and assessed so that the sound energy that is actually received from that movement is conveyed in the Sound Exposure Level (SEL) for the movement when calculated in accordance with NZS 6801: 2008.	At any point within the notional boundary of any residential unit, other than residential units on the same site as the activity. For any landing area in the Hills Resort Zone, the assessment location is any point within the notional boundary of a residential unit outside the Hills Resort Zone. For any landing area in the Hogans Gully Resort Zone, the assessment location is any point within the notional boundary			

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Rule Number	Specific Standards				Non-compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
	For the avoidance of doubt this rule does not apply to Queenstown Airport and Wānaka Airport. Advice Note: See additional rules in Rural Zone Chapter at 21.10.1, 21.10.2 and 21.10.3.	of a residential unit outside the Hogans Gully Resort Zone. *Note: The applicable noise limit in this rule and in rule 36.5.12 below for informal airports/landing strips used by a combination of both fixed wing and helicopters shall be determined by an appropriately qualified acoustic engineer on the basis of the dominant aircraft type to be used.			
	36.5.11.1 All locations except identified in 36.5.11.2		At all times	50 dB L _{dn}	NC
	36.5.11.2 Lower Density Suburban Residential Zone, Medium Density Residential Zone, High Density Residential Zone, Arrowtown Residential Historic Management Zone, Large Lot Residential Zone, Rural Zone, Rural Residential Zone and Rural Lifestyle Zone. Advice Note: Rule 36.5.11.2 shall not apply to helicopter noise associated with use of an informal airport permitted under Rules 21.10.2 and 21.10.3.		At all times	40 dB L _{dn}	NC
36.5.12	Fixed Wing Aircraft Sound from airports/landing strips for fixed wing aircraft must be measured and assessed in accordance with NZS 6805:1992 Airport Noise Management and Land Use Planning.	At any point within the notional boundary of any residential unit and at any point within a residential site other than residential units on the same site as the activity.	At all times	55 dB L _{dn}	NC

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Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
	<p>For the avoidance of doubt this rule does not apply to Queenstown and Wānaka Airports.</p> <p>Advice Note: See additional rules in Rural Zone Chapter at 21.10.1, 21.10.2 and 21.10.3.</p>	<p>*Note: The applicable noise limit in this rule and in rule 36.5.11 above for informal airports/landing strips used by a combination of both fixed wing and helicopters shall be determined by an appropriately qualified acoustic engineer on the basis of the dominant aircraft type to be used.</p>			
36.5.13	<p>Construction Noise</p> <p>Construction sound must be measured and assessed in accordance with NZS 6803:1999 Acoustics - Construction Noise. Construction sound must comply with the recommended upper limits in Tables 2 and 3 of NZS 6803. Construction sound must be managed in accordance with NZS 6803.</p>	At any point within any other site.	Refer to relevant standard	Refer to relevant standard	D
36.5.14	<p>Commercial Motorised Craft (excluding public water ferry services and the TSS Earnslaw)</p> <p>Sound from motorised craft must be measured and assessed in accordance with ISO 2922:2000 and ISO 14509-1:2008.</p>	25 metres from the craft.	<p>0800 to 2000h</p> <p>2000h to 0800h</p>	<p>77 dB L_{ASmax}</p> <p>67 dB L_{ASmax}</p>	NC
36.5.15	<p>Public water ferry services</p> <p>Sound from motorised craft must be measured and assessed in accordance with ISO 2922:2000</p>	25 metres from the craft	<p>0700 to 2200h</p> <p>2200h to 0700h</p>	<p>77 dB_{ASmax}</p> <p>67 dB L_{ASmax}</p>	<p>RD</p> <p>Discretion is restricted to the following matters:</p>

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Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
					<ul style="list-style-type: none"> a. The degree to which the activity supports an efficient and convenient passenger transport service. b. As relevant to noise effects: <ul style="list-style-type: none"> i. The degree to which the noise limited is exceeded; ii. The frequency and timing of craft movements, in particular between 2200 and 0700 hours; iii. The proximity of the craft route to sensitive receivers; iv. The nature of the ambient noise environment; v. The degree to which noise effects can practicably be avoided, remedied or mitigated, including by noise

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Rule Number	Specific Standards				Non-compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
					<p>attenuation of the craft; and</p> <p>vi. Cumulative effects in conjunction with other surface water-based activities.</p> <p>c. Location monitoring mechanisms of the craft and availability of records for Council inspection.</p>
36.5.16	Sound from the Airport Zone - Queenstown received in the Residential Zones, and the Rural Zone, excluding sound from aircraft operations that are subject to the Queenstown Airport Designation No.2.	At any point within the Residential Zone and at any point within the notional boundary in the Rural Zone.	0700h to 2200h 2200h to 0700h	55 dB _{Aeq(15 min)} 45 dB _{Aeq(15 min)} 70 dB _{AFmax}	<p>RD</p> <p>Discretion is restricted to the extent of effects of noise generated on adjoining zones.</p>
36.5.17	Sound from activities in the General Industrial and Service Zone. Note: For the purpose of this rule, a road that is located outside this zone is not deemed to be a "site outside this zone" and, as such, the noise levels specified in a above may be exceeded on road reserves adjacent to this zone.	At any point within any site located in any other zone.	Refer to standard relevant to the zone in which noise is received.	Refer to standard relevant to the zone in which noise is received.	NC

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Rule Number	Specific Standards				Non- compliance Status
	Activity or sound source	Assessment location	Time	Noise Limits	
36.5.18	<p>Sound from activities in the Coneburn Industrial Zone.</p> <p>Note: for the purpose of this rule, a road that is located outside this zone is not deemed to be a “site outside this zone” and, as such, the noise levels specified may be exceeded on road reserves adjacent to this zone.</p>	At any point within any site located in any other zone.	Refer to standard relevant to the zone in which noise is received.	Refer to standard relevant to the zone in which noise is received.	NC

36.6 Airport Noise

36.6.1 Sound Insulation Requirements for the Queenstown and Wānaka Airport - Acceptable Construction Materials (Table 4).

The following table sets out the construction materials required to achieve appropriate sound insulation within the airport Air Noise Boundary (ANB) as shown on the District Plan web mapping application.

Building Element	Minimum Construction	
External Walls	Exterior Lining	Brick or concrete block or concrete, or 20mm timber or 6mm fibre cement
	Insulation	Not required for acoustical purposes
	Frame	One layer of 9mm gypsum or plasterboard (or an equivalent combination of exterior and interior wall mass)
Windows/Glazed Doors	Double-glazing with 4 mm thick panes separated by a cavity at least 12 mm wide	
Pitched Roof	Cladding	0.5mm profiled steel or masonry tiles or 6mm corrugated fibre cement
	Insulation	100mm thermal insulation blanket/batts
	Ceiling	1 layer 9mm gypsum or plaster board
Skillion Roof	Cladding	0.5mm profiled steel or 6mm fibre cement
	Sarking	None Required
	Insulation	100mm thermal insulation blanket/batts
	Ceiling	1 layer 9mm gypsum or plasterboard
External Door	Solid core door (min 24kg/m ²) with weather seals	

Note: The specified construction materials in this table are the minimum required to meet the Indoor Design Sound Level. Alternatives with greater mass or larger thicknesses of insulation will be acceptable. Any additional construction requirements to meet other applicable standards not covered by this rule (e.g. fire, Building Code etc.) would also need to be implemented.

36.6.2 Ventilation Requirements for the Queenstown and Wānaka Airport

The following applies to the ventilation requirements within the airport Outer Control Boundary (OCB) and Air Noise Boundary (ANB).

Critical Listening Environments must have a ventilation and cooling system(s) designed, constructed and maintained to achieve the following:

- a. an outdoor air ventilation system. The ventilation rate must be able to be controlled by the occupant in increments as follows:

- i. a low air flow setting that provides air at a rate of between 0.35 and 0.5 air changes per hour. The sound of the system on this setting must not exceed 30dB $L_{Aeq(30s)}$ when measured 2m away from any grille or diffuser;
- ii. a high air flow setting that provides at least 5 air changes per hour. The sound of the system on this setting must not exceed 35 dB $L_{Aeq(30s)}$ when measured 2m away from any grille or diffuser.
- b. the system must provide, either by outdoor air alone, combined outdoor air and heating/cooling system or by direct room heating / cooling:
 - i. cooling that is controllable by the occupant and can maintain the temperature within the Critical Listening Environment at no greater than 25°C; and
 - ii. heating that is controllable by the occupant and can maintain the temperature within the Critical Listening Environment at no less than 18°C ;and
 - iii. the sound of the system when in heating or cooling mode must not exceed 35 dB $L_{Aeq(30s)}$ when measured 2m away from any grille or diffuser.
- c. a relief air path must be provided to ensure the pressure difference between the Critical Listening Environments and outside is never greater than 30Pa;
- d. if cooling is provided by a heat pump then the requirements of (a)(ii) and (c) do not apply.

Note: Where there is an existing ventilation, heating and/or cooling system, and/or relief air path within a Critical Listening Environment that meets the criteria stated in the rule, the existing system may be utilised to demonstrate compliance with the rule.

36.7 Ventilation Requirements for other Zones (Table 5)

The following table (Table 5) sets out the ventilation requirements in the Wānaka and Queenstown Town Centre Zones, the Local Shopping Centre Zone, General Industrial and Service Zone, Coneburn Industrial Zone and the Business Mixed Use Zone.

Table 5

Room Type	Outdoor Air Ventilation Rate (Air Changes Room Type per Hour, ac/hr)	
	Low Setting	High Setting
Bedrooms	1-2 ac/hr	Min. 5 ac/hr
Other Critical Listening Environments	1-2 ac/hr	Min. 15 ac/hr
Noise from ventilation systems shall not exceed 35 dB $L_{Aeq(1 min)}$, on High Setting and 30 dB $L_{Aeq(1 min)}$, on Low Setting. Noise levels shall be measured at a distance of to 2 m from any diffuser.		
Each system must be able to be individually switched on and off and when on, be controlled across the range of ventilation rates by the occupant with a minimum of 3 stages.		
Each system providing the low setting flow rates is to be provided with a heating system which, at any time required by the occupant, is able to provide the incoming air with an 18 °C heat rise when the airflow is set to the low setting. Each heating system is to have a minimum of 3 equal heating stages.		
If air conditioning is provided to any space then the high setting ventilation requirement for that space is not required.		

36.8 Riverbank Road Structure Plan Area

36.8.1 Sound Insulation Requirements for compliance with Rule 7.5.23 - Acceptable Construction Materials (Table 1).

The following table sets out the construction materials required to achieve appropriate sound insulation in accordance with Rule 7.5.23.

Table 1: Example bedroom constructions

<i>Building element</i>	<i>Minimum bedroom construction requirement</i>
30dB $L_{Aeq(15)}$ reduction	
<i>External walls</i>	
<i>Cladding</i>	<i>Minimum 70mm thick brick (or equivalent mass)</i>
<i>Insulation</i>	<i>Minimum 75mm thick fibrous insulation</i>
<i>Internal lining</i>	<i>Single layer of minimum 10mm thick plasterboard</i>
<i>Windows/glazed doors</i>	<i>Double glazed aluminium joinery consisting of one minimum 6mm thick glass pane and one minimum 6.38mm thick laminated glass pane separated by a 12mm air gap, e.g. 6/12/6.38L. No more than 40% of external wall area</i>
<i>Roof/ceiling</i>	

Cladding	Minimum 0.55mm thick profiled steel
Insulation	Minimum 75mm thick fibrous insulation
Ceiling	Two layers of minimum 13mm thick high-density plasterboard ($\geq 12 \text{ kg/m}^2$) linings (e.g. 2x13mm GIB Noiseline)
External doors	Solid core door (minimum 24 kg/m^2) with full perimeter seals

35dB $L_{Aeq(15)}$ reduction

External walls	
Cladding	Minimum 70mm thick brick (or equivalent mass)
Insulation	Minimum 75mm thick fibrous insulation
Internal lining	Single layer of minimum 10mm thick plasterboard
Windows	Double glazed aluminium joinery consisting of one minimum 6mm thick glass pane and one minimum 10.76mm thick laminated glass pane separated by a 12mm air gap, e.g. 6/12/10.76L. No more than 20% of external wall area. No doors permitted
Roof/ceiling	
Cladding	Minimum 0.55mm thick profiled steel
Sarking	Minimum 9mm thick fibre cement board sarking ($\geq 12 \text{ kg/m}^2$) to entire dwelling roof, e.g. 9mm RAB board sarking
Insulation	Minimum 75mm thick fibrous insulation
Ceiling	Two layers of minimum 13mm thick high-density plasterboard ($\geq 12 \text{ kg/m}^2$) linings (e.g. 2x13mm GIB Noiseline)
External doors	Not permitted

Note: For the avoidance of doubt, where the windows need to be closed to achieve the internal design level it is not necessary to provide alternate ventilation.