NOISE — Noise

Many activities unavoidably generate some noise. Noise can have adverse effects, particularly on people's health and wellbeing such as sleep disturbance and annoyance. Noise also impacts on amenity values.

However, the negative effects of noise need to be balanced against the need for those activities and considered in the context of existing background noise. The level of acceptability of noise or sensitivity to noise varies between different areas within the city, the characteristics of the noise, and the needs of the activity. The noise rules and standards in this chapter provide the noise limits for each zone and for specific activities.

This chapter also sets out zones and mapped overlays where sound insulation and mechanical ventilation is required for activities sensitive to noise. Rules in some zones also restrict the locations of activities sensitive to noise. In general, noise insulation is expected in High Noise areas (expected to be over 65dB Ldn) and Moderate Noise areas (expected to be over 57dB Ldn).

Except where expressly provided for, noise levels must be measured in accordance with NZS 6801:2008 (Acoustics - Measurement of environmental sound) and assessed in accordance with NZS 6802:2008 (Acoustics - Environmental noise).

Objectives

NOISE-O1	Adverse effects of noise
Adverse effects from noise: 1. Do not compromise people's health, and 2. Are compatible with people’s wellbeing, and the planned purposes, characters, and amenity values of zones and precincts, except: a. To the degree necessary to provide for short-term construction activities or temporary activities, and b. To the degree necessary to provide for an infrequent number of major events in public places in the city where these have traditionally occurred.	

NOISE-O2	Reverse sensitivity
Existing noise generating activities, and future noise generating activities in locations anticipated for such activities, are not unreasonably constrained in their operations by reverse sensitivity from inappropriately located or designed activities sensitive to noise.	

Policies

NOISE-P1	Appropriate noise generating activities
Enable the generation of noise from any activity where that noise: 1. Does not compromise people's health, and 2. Is compatible with people’s wellbeing and the planned purposes, characters, and amenity values of the relevant receiving zones and precincts.	

NOISE-P2	Short-term noise generating activities
Provide for the generation of noise where the noise does not compromise people's health, and: 1. The noise is from a construction activity, or 2. The noise is from a major event or other temporary activity, and is adequately managed using the best practicable option to avoid adverse effects that are unreasonable considering the scale, benefits, operational needs, and functional needs of the activity, and to avoid, remedy or mitigate other adverse effects.	

NOISE-P3	Reverse sensitivity
Require sound insulation where practical for activities sensitive to noise: 1. Near the rail network, 2. Near major highways, including State Highways, and 3. Within zones that anticipate higher levels of noise.	

Rules

Note on application of noise rules

The rules in this chapter do not apply to the following sources of noise:

a. Aircraft being operated above 1,000 feet (305m) above ground over the urban environment or above 500 feet (152m) above ground over the rural environment,
b. Aircraft being used in agricultural aviation activities, while in flight,
c. Aircraft being used in emergencies, or as air ambulances,
d. Vehicles being driven on a road (within the meaning of section 2(1) of the Transport Act 1998), or being driven within a site as part of or compatible with a normal residential activity,
e. Trains or other rail vehicles on railway lines (public or private) and crossing bells within a road, including at railway yards, railway sidings or stations. This exemption does not apply to the testing (when stationary), maintenance, loading or unloading of rail vehicles,
f. Any warning device or siren used by emergency services for civil defence or emergency purposes, and including testing and routine maintenance conducted between 7:00am and 7:00pm,
g. The use of generators and mobile equipment (including vehicles) when used solely for civil defence or emergency purposes, including testing and maintenance not exceeding 48 hours in duration, where they are operated by emergency services or lifeline utilities, or for the continuation of radiocommunication broadcasts,
h. Residential activities in the Residential Zones and Mixed Use Zone, other than vehicles, fixed plant, mobile plant, and construction,
i. Rural activities including, agricultural vehicles, machinery or equipment used on a seasonal or intermittent basis in the Rural Zones, which are a permitted activity in the relevant Rural Zone, other than any fixed plant,
j. Crowd noise from activities in the Open Space and Recreation Zones between 7:00am and 10:00pm,
k. Wind turbines that form part of a community-scale renewable electricity generation or commercial-scale renewable electricity generation activity (for rules on which, see the Renewable Electricity Generation chapter).

Note on requirements of the Building Act

Noise insulation standards in this chapter apply in addition to, and do not affect the requirements of, the Building Act 2004.

Note on application of insulation rules to changes of land use

Noise insulation rules only cover new buildings, additions, and alterations. Changes in land use that do not involve a new building, addition, or alteration, do not need to meet the requirements of these rules.

NOISE-R1	Emission of noise except where otherwise provided for in this chapter
All zones	1. **Activity status:** Permitted Where: a. Compliance is achieved with NOISE-S1: Emission of noise.
All zones	2. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R1.1. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while complying with NOISE-R1.1. 2. Effects of the noise on people's health. 3. Background noise levels and any special character of noise from any existing activities. 4. The nature and character of any changes to the sound received at receiving sites, and the degree to which such sounds are compatible with: a. The surrounding activities, b. Anticipated future activities, and c. Planned purposes, characters, and amenity values of the relevant zones and precincts. 5. Any mitigation of the noise proposed, in accordance with a best practicable option approach, such as through site layout and design, design and location of structures, buildings and equipment and the timing of operations.
NOISE-R2	**Emission of noise from construction activities**
All zones	1. **Activity status:** Permitted Where: 1. Compliance is achieved with NOISE-S2: Emission of noise from construction activities.
All zones	2. **Activity status:** Restricted discretionary Where:

	a. Compliance is not achieved with NOISE-R2.1. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while complying with NOISE-R2.1. 2. Effects of the noise on people's health. 3. Background noise levels and any special character of noise from any existing activities, the nature and character of any changes to the sound received at receiving sites, and the degree to which such sounds are compatible with the surrounding activities, anticipated future activities, and planned purposes, characters, and amenity values of the relevant zones and precincts. 4. Any mitigation of the noise proposed, in accordance with a best practicable option approach, such as through site layout and design, design and location of structures, buildings and equipment and the timing of operations.
NOISE-R3	**Emission of noise from temporary activities, other than Major Events within the Major Events Overlay**
All zones	1. **Activity status:** Permitted Where: a. Compliance is achieved with NOISE-S3: Emission of noise from temporary activities.
All zones	2. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R3.1. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while complying with NOISE-R3.1. 2. Effects of the noise on people's health. 3. Background noise levels and any special character of noise from any existing activities, the nature and character of any changes to the sound received at receiving sites, and the degree to which such sounds are compatible with the surrounding activities, anticipated future activities, and planned purposes, characters, and amenity values of the relevant zones and precincts. 4. Any mitigation of the noise proposed, in accordance with a best practicable option approach, such as through site layout and design, design and location of structures, buildings and equipment and the timing of operations.
NOISE-R4	**Emission of noise from major events within the Major Events Overlay**
Major Events Overlay	1. **Activity status:** Permitted Where: a. Compliance is achieved with NOISE-S3: Emission of noise from temporary activities.
Major Events Overlay	2. **Activity status:** Controlled Where: a. Compliance is not achieved with NOISE-R4.1, but b. Compliance is achieved with NOISE-S4: Emission of noise from major events (controlled activity limits). Matters of control are limited to: 1. The provision of an Operational Noise Management Plan which must include, at minimum: a. Purpose of the plan, b. Map of the site and surrounding area (including noise sensitive receiver sites), c. Overview of the activity (including the nature and scale of the activity, operating hours, duration), d. Site layout map, e. List of sound sources and locations, f. Applicable noise limits for all activities and assessment locations, g. Persons responsible for specific tasks and their contact details, h. Noise control methods (breakdown for set up, take down and operations),

	i. Community liaison (letter drop, signage, ads etc), j. Community notification protocols and procedures, k. Operational noise monitoring (scope, procedure and reporting), l. Noise compliance reporting, m. Complaints procedures and methods, and n. Review procedures, and compliance statement. 2. The management of the event in accordance with that plan
Major Events Overlay	3. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R4.1 or NOISE-R4.2. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while complying with NOISE-R4.1. 2. Effects of the noise on people's health. 3. Background noise levels and any special character of noise from any existing activities, the nature and character of any changes to the sound received at receiving sites, and the degree to which such sounds are compatible with the surrounding activities, anticipated future activities, and planned purposes, characters, and amenity values of the relevant zones and precincts. 4. Any mitigation of the noise proposed, in accordance with a best practicable option approach, such as through site layout and design, design and location of structures, buildings and equipment and the timing of operations.
NOISE-R5	**Activities that result in vibration**
All zones	1. **Activity status:** Permitted Where: a. The activity is managed in such a way that ground vibration effects are contained as far as practical within the boundary of the site and do not compromise public health or safety, or well-being and amenity values within any other site, and b. The activity is managed to avoid damage to buildings, by ensuring vibration levels received at any building except for any building located on the same site do not exceed vibration guideline values set out in Tables 1 and 3 of DIN 4150-3:1999-02 Structural vibration — Part 3: Effects of vibration on structures.
All zones	2. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R5.1. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while meeting NOISE-R5.1. 2. Effects of the vibration on people's health, safety, and wellbeing. 3. The planned purposes, characters, and amenity values of the relevant zones and precincts of the areas that would be subject to ground vibration effects.
NOISE-R6	**New buildings, or alteration and additions to existing buildings, to be used by an activity sensitive to noise within the Highway and Railway Noise Overlay - High**
All zones	1. **Activity status:** Permitted Where: a. Compliance is achieved with NOISE-S5: Acoustic insulation and ventilation for activities sensitive to noise in the Highway and Railway Noise Overlay - High, or b. An existing activity sensitive to noise is replaced with a different activity sensitive to noise with a gross floor area that is no greater.
All zones	2. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R6.1. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while meeting NOISE-R6.1. 2. Alternative means of achieving noise levels and ventilation in habitable spaces that

	are adequate to provide for people's health and wellbeing, given existing and anticipated future activities in the relevant highway or railway corridor. 3. Ambient noise levels and any special character of noise from any existing activities in the relevant highway or railway corridor, and the likely noise levels and special character of noise from likely future activities in the relevant highway or railway corridor. 4. Whether any special nature of the activity means that protection from noise from the relevant highway or railway corridor is of lesser importance than it would be in general. 5. Special constraints on achieving NOISE-R6.1, such as being a heritage item. Public notification is precluded for any application required under this rule, and limited notification is precluded except to the operators of the relevant highway or railway. The normal test of the RMA applies to these parties.
NOISE-R7	**New buildings, or alterations and additions to existing buildings, to be used by an activity sensitive to noise, within the Highway and Railway Noise Overlay - Moderate**
All zones	1. **Activity status:** Permitted Where: a. Compliance is achieved with NOISE-S6: Acoustic insulation and ventilation for activities sensitive to noise in the Highway and Railway Noise Overlay - Moderate, or b. An existing activity sensitive to noise is replaced with a different activity sensitive to noise with a gross floor area that is no greater.
All zones	2. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R7.1. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while meeting NOISE-R7.1. 2. Alternative means of achieving noise levels and ventilation in habitable spaces that are adequate to provide for people's health and wellbeing, given existing and anticipated future activities in the relevant highway or railway corridor. 3. Ambient noise levels and any special character of noise from any existing activities in the relevant highway or railway corridor, and the likely noise levels and special character of noise from likely future activities in the relevant highway or railway corridor. 4. Whether any special nature of the activity means that protection from noise from the relevant highway or railway corridor is of lesser importance than it would be in general. 5. Special constraints on achieving NOISE-R7.1, such as being a heritage item. Public notification is precluded for any application required under this rule, and limited notification is precluded except to the operators of the relevant highway or railway. The normal test of the RMA applies to these parties.
NOISE-R8	**New buildings, or alterations and additions to existing buildings, to be used by an activity sensitive to noise**
City Centre Zone **Metropolitan Centre Zone** **Industrial Zones** **Quarry Zone** **Seaview Marina Zone**	1. **Activity status:** Permitted Where: a. Compliance is achieved with NOISE-S7: Acoustic insulation and ventilation for activities sensitive to noise in certain high noise zones, or b. An existing activity sensitive to noise is replaced with a different activity sensitive to noise with a gross floor area that is no greater.
Neighbourhood Centre Zone	2. **Activity status:** Permitted Where:

Local Centre Zone **Mixed Use Zone** **Sport and Active Recreation Zone** **Hospital Zone** **Tertiary Education Zone**	a. Compliance is achieved with NOISE-S8: Acoustic insulation and ventilation for activities sensitive to noise in certain moderate noise zones, or b. An existing activity sensitive to noise is replaced with a different activity sensitive to noise with a gross floor area that is no greater.
City Centre Zone **Metropolitan Centre Zone** **Neighbourhood Centre Zone** **Local Centre Zone** **Mixed Use Zone** **Industrial Zones** **Sport and Active Recreation Zone** **Hospital Zone** **Tertiary Education Zone** **Quarry Zone**	1. **Activity status:** Restricted discretionary Where: a. Compliance is not achieved with NOISE-R8.1 or NOISE-R8.2. **Matters of discretion are restricted to:** 1. Any positive effects of the activity that cannot be achieved while meeting the standard. 2. Alternative means of achieving noise levels and ventilation in habitable spaces that are adequate to provide for people's health and wellbeing. 3. Ambient noise levels and any special character of noise from any existing activities, and the likely noise levels and special character of noise from likely future activities in the area. 4. Whether any special nature of the activity means that protection from noise is of lesser importance than it would be in general. 5. Special constraints on achieving NOISE-R8.1 or NOISE-R8.2, such as being a heritage item. Public notification is precluded for any application under this rule.
NOISE-R9	**Noise from aircraft at helicopter landing areas**
General Rural Zone **Natural Open Space Zone**	1. **Activity status:** Permitted Where: 1. The helicopter landing area is used solely: a. For agricultural aviation activities between dawn and dusk, on no more than 30 days in any calendar year, or b. In unforeseen emergencies, and 2. The helicopter landing area is managed to comply with the recommended noise limits and noise management provisions set out in NZS6807:1994 Noise Management and Land Use Planning for Helicopter Landing Areas (excluding clause 4.3 Averaging).
General Rural Zone **Heavy Industrial Zone** **Hospital Zone** **Natural Open Space Zone**	2. **Activity status:** Restricted discretionary Where: 1. NOISE-R9.1 is not met. **Matters of discretion are restricted to:** 1. Positive effects of the use of helicopters, to the degree that those effects cannot be achieved by other means 2. People's health and wellbeing 3. The amenity of the surrounding area 4. The degree to which the activity is managed in accordance with NZS6807:1994 Noise Management and Land Use Planning for Helicopter Landing Areas (excluding clause 4.3 Averaging).
Residential Zones **Rural Lifestyle**	3. **Activity status:** Non-complying Public notification is required for any application under this rule.

Zone **General Industrial Zone** **Light Industrial Zone** **Commercial and Mixed Use Zones** **Tertiary Education Zone** **Seaview Marina Zone** **Marae Zone** **Quarry Zone** **Open Space Zone** **Sport and Active Recreation Zone**	

Standards

NOISE-S1	Emission of noise
All Zones	1. Emissions of noise must meet the limits in NOISE-APP1: Noise limits by emitting and receiving zone. 2. The noise shall be: a. Measured in accordance with NZS 6801:2008 (Acoustics - Measurement of Environmental Sound), and b. Assessed in accordance with NZS 6802:2008 (Acoustics - Environmental Noise), including consideration of special audible characteristics, except where the type of noise being assessed does not fall within the scope of that standard.
NOISE-S2	**Emission of noise from construction activities**
All Zones	1. Emissions of noise must meet the limits in appendix NOISE-APP2: Noise limits for construction activities. 2. The noise shall be measured, assessed, and managed in accordance with NZS 6803:1999 (Acoustics - Construction Noise).
NOISE-S3	**Emission of noise from temporary activities**
All Zones	1. Emissions of noise must meet the limits in appendix NOISE-APP3: Noise limits for temporary activities. 2. The noise shall be: a. Measured in accordance with NZS 6801:2008 (Acoustics - Measurement of Environmental Sound), and b. Assessed in accordance with NZS 6802:2008 (Acoustics - Environmental Noise), including consideration of special audible characteristics, except where the type of noise being assessed does not fall within the scope of that standard.
NOISE-S4	**Emission of noise from major events (controlled activity limits)**
All Zones	1. Emissions of noise must meet the limits in appendix NOISE-APP4: Noise limits for major events. 2. The noise shall be: a. Measured in accordance with NZS 6801:2008 (Acoustics - Measurement of Environmental Sound), and b. Assessed in accordance with NZS 6802:2008 (Acoustics - Environmental Noise), except: i. That no duration adjustment or correction for special audible characteristics provided for in sections 6.3 and 6.4 of the standard shall be applied, and

	ii. The standard shall not be applied where the type of noise being assessed does not fall within the scope of that standard. 3. Noise from sound testing must only occur between the hours of 7:00am and 5.00pm on weekdays, and 10:00am and 5:00pm on Saturday, Sunday, or public holidays. 4. Helicopters must not be used (except for emergency purposes). 5. Drones must not be used outside the Major Events Overlay. 6. For concert events, the event organiser shall ensure a letter drop is undertaken informing local residents of the time and duration of the concert and any sound checks. Letters shall be delivered to all properties within 200m of the venue as well as any additional properties which may be subject to noise levels above the permitted noise limits in NOISE-APP1: Noise limits by emitting and receiving zone. Letters must arrive at least one week prior to an event taking place.
NOISE-S5	**Acoustic insulation and ventilation for activities sensitive to noise in the Highway and Railway Noise Overlay - High**
Highway and Railway Noise Overlay - High	1. Any building in which an activity sensitive to noise occurs must either: a. Be designed, constructed, and maintained in accordance with the minimum construction schedule in appendix NOISE-APP5: Minimum construction schedule for noise insulation (to achieve $D_{tr,2m,nTw}$ > 35dB), or b. Be designed, constructed, and maintained in accordance with a design that is certified by a qualified acoustic expert as meeting an acoustic performance of $D_{tr,2m,nTw}$ > 35dB assessed in accordance with ISO 717-1:2020 Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation, and this certification is provided in writing to the Council before the activity commences, or c. Be located where an acoustic screen (such as a solid noise barrier fence, terrain, or a building) is present on the same site, and which is certified in writing by a qualified acoustic expert or environmental noise officer before commencement of the activity, that: i. The level of noise incident on the most exposed part of the building in which an activity sensitive to noise occurs will, under a reasonable maximum use scenario, not exceed 55 dB $L_{Aeq\ (24h)}$ at all points 1.5m above ground level, or ii. The level of noise incident on the most exposed part of the building in which an activity sensitive to noise occurs, where that building complies with NOISE-S6.1.a or NOISE-S6.1.b will, under a reasonable maximum use scenario, not exceed 60 dB $L_{Aeq\ (24h)}$ at all points 1.5m above ground level. 2. Where compliance with this standard is met through NOISE-S5.1.a, or where the acoustic performance of NOISE-S5.1.b can only be met with the windows closed, ventilation, heating, and cooling must be provided in accordance with appendix NOISE-APP7: Ventilation.
NOISE-S6	**Acoustic insulation and ventilation for activities sensitive to noise in the Highway and Railway Noise Overlay - Moderate**
Highway and Railway Noise Overlay - Moderate	1. Any building in which an activity sensitive to noise occurs must either: a. Be designed, constructed, and maintained in accordance with the minimum construction schedule in appendix NOISE-APP6: Minimum construction schedule for noise insulation (to achieve $D_{tr,2m,nTw}$ > 30dB), or b. Be designed, constructed, and maintained in accordance with a design that is certified by a qualified acoustic expert as meeting an acoustic performance of $D_{tr,2m,nTw}$ > 30dB assessed in accordance with ISO 717-1:2020 Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation, and this certification is provided in writing to the Council before the activity commences, or c. Be located where an acoustic screen (such as a solid noise barrier fence, terrain, or a building) is present on the same site, and which is certified in writing by a qualified acoustic expert or environmental noise officer before commencement of the activity, that the level of noise incident on the most exposed part of the building in which an activity sensitive to noise occurs will, under a reasonable maximum use scenario, not exceed 55 dB $L_{Aeq\ (24h)}$ at all points 1.5m above ground level. 2. Where compliance with this standard is met through NOISE-S6.1a, or where the acoustic performance of NOISE-S6.1b can only be met with the windows closed, ventilation, heating, and cooling must be provided in accordance with appendix NOISE-APP7: Ventilation.

NOISE-S7	Acoustic insulation and ventilation for activities sensitive to noise in certain high noise zones
City Centre Zone **Metropolitan Centre Zone** **Industrial Zones** **Quarry Zone** **Seaview Marina Zone**	1. Any building in which an activity sensitive to noise occurs must either: a. Be designed, constructed, and maintained in accordance with the minimum construction schedule in appendix NOISE-APP5: Minimum construction schedule for noise insulation (to achieve $D_{tr,2m,nTw}$ > 35dB), or b. Be designed, constructed, and maintained in accordance with a design that is certified by a qualified acoustic expert as meeting an acoustic performance of $D_{tr,2m,nTw}$ > 35dB assessed in accordance with ISO 717-1:2020 *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation*, and this certification is provided in writing to the Council before the activity commences. 2. Where compliance with this standard is met through NOISE-S7.1.a, or where the acoustic performance of NOISE-S7.1.b can only be met with the windows closed, ventilation, heating, and cooling must be provided in accordance with appendix NOISE-APP7: Ventilation.
NOISE-S8	**Acoustic insulation and ventilation for activities sensitive to noise in certain moderate noise zones**
Neighbourhood Centre Zone **Local Centre Zone** **Mixed Use Zone** **Sport and Active Recreation Zone** **Hospital Zone** **Tertiary Education Zone**	1. Any building in which an activity sensitive to noise occurs must either: a. Be designed, constructed, and maintained in accordance with the minimum construction schedule in appendix NOISE-APP6: Minimum construction schedule for noise insulation (to achieve $D_{tr,2m,nTw}$ > 30dB), or b. Be designed, constructed, and maintained in accordance with a design that is certified by a qualified acoustic expert as meeting an acoustic performance of $D_{tr,2m,nTw}$ > 30dB assessed in accordance with ISO 717-1:2020 *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation*, and this certification is provided in writing to the Council before the activity commences. 2. Where compliance with this standard is met through NOISE-S8.1.a, or where the acoustic performance of NOISE-S8.1.b can only be met with the windows closed, ventilation, heating, and cooling must be provided in accordance with appendix NOISE-APP7: Ventilation.

NOISE-APP1	Noise limits by emitting and receiving zone			
Zone where noise emitted	**Zone of receiving site**	Daytime Limit (7:00am - 7:00pm)	Evening Limit (7:00pm - 10:00pm)	Night Limit (10:00pm - 7:00am)
Residential Zones **Rural Zones** **Local Centre Zone** **Neighbourhood Centre Zone** **Mixed Use Zone** **Open Space Zone** **Natural Open Space Zone** **Hospital Zone** **Tertiary Education Zone** **Marae Zone**	**Residential Zones** **Marae Zone** (at any point in site)	55 dB $L_{Aeq\ (15min)}$	50 dB $L_{Aeq\ (15min)}$	40 dB $L_{Aeq\ (15min)}$ 70 dB L_{AFmax}
	Rural Zones (within the notional boundary of an activity sensitive to noise)	55 dB $L_{Aeq\ (15min)}$	50 dB $L_{Aeq\ (15min)}$	45 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}
	City Centre Zone **Metropolitan Centre Zone** **Industrial Zones** **Seaview Marina Zone** (at any point in site)	65 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$ 85 dB L_{AFmax}
	Local Centre Zone **Neighbourhood**	65 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}

	Centre Zone **Mixed Use Zone** **Open Space and Recreation Zones** **Tertiary Education Zone** **Hospital Zone** (at any point in site)			
City Centre Zone **Metropolitan Centre Zone** **Industrial Zones** **Sport and Active Recreation Zone** **Seaview Marina Zone**	**Residential Zones** **Marae Zone** (at any point in site)	55 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$	45 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}
	Rural Zones (within the notional boundary of an activity sensitive to noise)	55 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$	45 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}
	City Centre Zone **Metropolitan Centre Zone** **Industrial Zones** **Seaview Marina Zone** (at any point in site)	65 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$ 85 dB L_{AFmax}
	Local Centre Zone **Neighbourhood Centre Zone** **Mixed Use Zone** **Open Space and Recreation Zones** **Tertiary Education Zone** **Hospital Zone** (at any point in site)	65 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}
Quarry Zone	**All zones other than the Quarry Zone** (at the boundary of, or outside, the Quarry Zone)	67 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$	45 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}

Where it is impractical to measure outside the building on any site within a Commercial and Mixed Use Zone, measurements may be made indoors within habitable receiver rooms, with windows closed.

Where indoor measurements are undertaken, compliance with the above noise limits shall be determined by adopting the above limits reduced by 18dB. Where habitable rooms have been noise insulated to protect activities sensitive to

noise (including residential activities), then compliance determined indoors shall not allow activities to increase noise emission levels above those that would apply if the noise insulation had not been undertaken.

NOISE-APP2	**Noise limits for construction activities**							
These limits are measured and assessed in accordance with NZS 6803:1999 (Acoustics - Construction Noise).								
Zone of receiving site (measured 1 metre from any building in which an activity sensitive to noise occurs)	**Time period**		Short term work (14 days or less)		Typical work (more than 14 days but not more than 20 weeks)		Long term work (more than 20 weeks)	
			dBA L_{eq}	dBA L_{max}	dBA L_{eq}	dBA L_{max}	dBA L_{eq}	dBA L_{max}
Rural Zones **Residential Zones** **Mixed Use Zone** **Marae Zone**	**Weekdays**	6.30am-7.30am	65	75	60	75	55	75
		7.30am-6.00pm	80	95	75	90	70	85
		6.00pm-8.00pm	75	90	70	85	65	80
		8.00pm-6.30am (next day)	45	75	45	75	45	75
	Saturday	6.30am-7.30am	45	75	45	75	45	75
		7.30am-6.00pm	80	95	75	90	70	85
		6.00pm-8.00pm	45	75	45	75	45	75
		8.00pm-6.30am (next day)	45	75	45	75	45	75
	Sunday and Public Holidays	6.30am-7.30am	45	75	45	75	45	75
		7.30am-6.00pm	55	85	55	85	55	85
		6.00pm-8.00pm	45	75	45	75	45	75
		8.00pm-6.30am (next day)	45	75	45	75	45	75
City Centre Zone **Metropolitan Centre Zone** **Local Centre Zone** **Neighbourhood Centre Zone** **Hospital Zone** **Tertiary Education Zone** **Light Industrial Zone**	**Any day**	6.30am-7.30am	65	85	65	85	65	85
		7.30am-6.00pm	80	95	75	90	70	85
		6.00pm-8.00pm	75	90	70	85	70	85
		8.00pm-6.30am (next day)	65	85	65	85	65	85
Heavy Industrial	**Any day**	7.30am-	80	-	75	-	70	-

Zone		8.00pm						
General Industrial Zone **Open Space and Recreation Zones** **Quarry Zone**		8.00pm-7.30am (next day)	85	-	80	-	75	-

Note:
Red shaded rows have noise limits that are likely to mean that no construction work would comply with the limits.

NOISE-APP3	**Noise limits for temporary activities**			
Area where noise emitted	**Zone of receiving site**	Daytime Limit (7:00am - 7:00pm)	Evening Limit (7:00pm - 10:00pm)	Night Limit (10:00pm - 7:00am)
General Rural Zone **Commercial and Mixed Use Zones** **Industrial Zones** **Open Space and Recreation Zones** **Hospital Zone** **Tertiary Education Zone** **Marae Zone**	**Residential Zones** **Marae Zone** (at any point in site)	67 dB $L_{Aeq\ (15min)}$	67 dB $L_{Aeq\ (15min)}$	40 dB $L_{Aeq\ (15min)}$ 70 dB L_{AFmax}
	Rural Zones (within the notional boundary of an activity sensitive to noise)	67 dB $L_{Aeq\ (15min)}$	67 dB $L_{Aeq\ (15min)}$	45 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}
	City Centre Zone **Metropolitan Centre Zone** **Industrial Zones** (at any point in site)	67 dB $L_{Aeq\ (15min)}$	67 dB $L_{Aeq\ (15min)}$	65 dB $L_{Aeq\ (15min)}$ 85 dB L_{AFmax}
	Other Zones (at any point in site)	67dB $L_{Aeq\ (15min)}$	67 dB $L_{Aeq\ (15min)}$	55 dB $L_{Aeq\ (15min)}$ 75 dB L_{AFmax}
Other Zones	The limits in NOISE-APP1: Noise limits by emitting and receiving zone apply.			

NOISE-APP4	**Noise limits for major events**

The limits in this table apply only to activities of the major event occurring within the relevant Major Event Overlay, during the hours specified. At other times or locations, the standards in NOISE-S3/NOISE-APP3 apply.

The noise limits apply at:
1. Any point within the notional boundary of an activity sensitive to noise in a Rural Zone, and
2. Any point within another site in a zone other than the Rural Zone or the Open Space and Recreation Zones.

Major Event Overlay	**Hours during which major event noise limits apply**	**Noise limits**
Hutt Recreation Ground **McEwan Park**	10:00am to 11:00pm (Friday and Saturday) 10:00am to 10:00pm (other days)	75 dB $L_{Aeq\ (15min)}$ 95 dB $L_{zeq\ (15min)}$ at 63 Hz 90 dB $L_{zeq\ (15min)}$ at 125 Hz 85 dB L_{AFmax}
Williams Park	10:00am to 9:00pm	75 dB $L_{Aeq\ (15min)}$ 95 dB $L_{zeq\ (15min)}$ at 63 Hz 90 dB $L_{zeq\ (15min)}$ at 125 Hz 85 dB L_{AFmax}

NOISE-APP5	**Minimum construction schedule for noise insulation (to achieve $D_{tr,2m,nTw}$ > 35dB)**

Building Element	Minimum Construction Requirement	
	Note: This schedule assumes and requires construction that complies with the Building Code. These requirements are in addition to the requirements of that Code. Where compliance with this schedule is not met, or for other building or construction materials not included in this schedule, compliance with NOISE-S5 or NOISE-S7 must be demonstrated by a suitably qualified specialist. The table refers to common specifications for timber size. Nominal specifications may in some cases be slightly less than the common specifications stated in the schedule for timber size. In determining the insulating performance of roof/ceiling arrangements, roof spaces are assumed to have no more than the casual ventilation typical of the jointing capping and guttering detail used in normal construction.	
External walls of habitable rooms	Option A	**Light cladding on timber or steel framed stud walls** Timber weatherboard or sheet materials with surface mass between 16kg/m² and 30kg/m² of wall cladding, and Internal lining of minimum 17kg/m² plasterboard, such as two layers of 10mm thick high-density plasterboard, on resilient/isolating mountings.
	Option B	**Medium cladding on timber or steel framed stud walls** Surface mass between 30kg/m² and 65kg/m², and Internal lining of minimum 17kg/m² plasterboard, such as two layers of 10mm thick high-density plasterboard.
	Option C	**Heavy cladding on timber or steel framed stud walls** Surface mass over 65kg/m², and Internal lining of minimum 6kg/m² plasterboard, such as one layer of 10mm thick plasterboard.
	Option D	**Mass wall: concrete block** Minimum concrete block thickness of 190mm, strapped, and internal lining of minimum 6kg/m² plasterboard, such as one layer of 10mm thick plasterboard.
	Option E	**Mass wall: solid concrete** Minimum concrete wall thickness of 150mm.
External wall cavities of habitable rooms	Wall cavity infill of fibrous insulation, batts or similar, with a minimum density of 9kg/m³.	
Glazed areas of habitable rooms (including glazed exterior doors)	Option A	Double-glazing with: a. At least one laminated pane of glass of at least 6mm thick, b. A cavity between the two panes of glass at least 12mm deep, and c. At least one more pane of glass at least 6mm thick.
	Option B	Any other glazing with minimum performance $R_w + C_{tr}$ 34dB.
	Required for both options	Aluminium, timber, or vinyl frame, Fixed panes and/or compression seals on opening panes (other than sliding doors and windows), and Glazed areas must be no more than 35% of room floor area.
Exterior doors of habitable rooms (excluding where glazed)	Option A	Solid core exterior door, minimum surface mass 20kg/m² with compression seals.
	Option B	Other door set with minimum performance R_w 30dB.
	Option C	Door has edge and threshold compression seals and is shielded by the building so that there is no line of sight to the highway road surface or any point 3.8m directly above railway tracks. (This option is only available where compliance is required with NOISE-S5, due to being within the Highway and Railway High Noise Overlay, but compliance is not required with NOISE-S7).
Roof	Option A	**Skillion roof with light cladding** Surface mass up to 13kg/m² of roof cladding, and Internal lining of minimum 17kg/m² plasterboard, such as two layers of 10mm thick high-density plasterboard.
	Option B	**Pitched roof with light cladding** Surface mass up to 20kg/m² of roof cladding, and

		Internal lining of minimum 17kg/m² plasterboard, such as two layers of 10mm thick high-density plasterboard.
	Option C	**Any roof with heavy cladding** Surface mass over 20kg/m² of roof cladding, and Internal lining of minimum 6kg/m² plasterboard, such as one layer of 10mm thick plasterboard.
	Ceiling penetrations, such as for recessed lighting or ventilation, shall not allow additional noise break-in.	
Ceiling cavity	Ceiling cavity infill of fibrous insulation, batts or similar, with a minimum density of 7kg/m².	
NOISE-APP6	**Minimum construction schedule for noise insulation (to achieve $D_{tr,2m,nTw}$ > 30dB)**	
Building Element	**Minimum Construction Requirement** Note: This schedule assumes and requires construction that complies with the Building Code. These requirements are in addition to the requirements of that code. Where compliance with this schedule is not met, or for other building or construction materials not included in this schedule, compliance with NOISE-S6 or NOISE-S8 must be demonstrated by a suitably qualified specialist. The table refers to common specifications for timber size. Nominal specifications may in some cases be slightly less than the common specifications stated in the schedule for timber size. In determining the insulating performance of roof/ceiling arrangements, roof spaces are assumed to have no more than the casual ventilation typical of the jointing capping and guttering detail used in normal construction. For each building element in this table, compliance may alternatively be achieved with the relevant requirement in NOISE-APP5 instead.	
External walls of habitable rooms	Option A	**Light cladding on timber or steel framed stud walls** Timber weatherboard or sheet materials with surface mass between 8kg/m² and 25kg/m² of wall cladding, and Internal lining of minimum 17kg/m² plasterboard, such as two layers of 10mm thick high-density plasterboard, on resilient/isolating mountings, and Combined superficial density of at least 25kg/m², being the combined mass of external and internal linings excluding structural elements (e.g. window frames or wall studs) with no less than 10kg/m² on each side of structural elements.
	Option B	**Medium or heavy cladding on timber or steel framed stud walls** Surface mass over 25kg/m² of wall cladding, and Internal lining of minimum 6kg/m² plasterboard, such as one layer of 10mm thick plasterboard, and Combined superficial density of at least 25kg/m², being the combined mass of external and internal linings excluding structural elements (e.g. window frames or wall studs) with no less than 10kg/m² on each side of structural elements.
	Option C	**Mass wall: concrete block** Minimum concrete block thickness of 190mm, strapped, and internal lining of minimum 6kg/m² plasterboard, such as one layer of 10mm thick plasterboard.
	Option D	**Mass wall: solid concrete** Minimum concrete wall thickness of 150mm.
External wall cavities of habitable rooms	Wall cavity infill of fibrous insulation, batts or similar, with a minimum density of 9kg/m³.	
Glazed areas of habitable rooms (including glazed exterior doors)	Option A	At least one pane at least 6mm thick, with glazed area no more than 10% of floor area.
	Option B	At least one laminated pane at least 6mm thick, with glazed area no more than 35% of floor area.
	Option C	Any other glazing with minimum performance Rw 33dB, with glazed area no more than 35% of floor area.
	Required for all	Aluminium, timber, or vinyl frame, and Fixed panes and/or compression seals on opening panes (other than sliding doors

	options	and windows).
Exterior doors of habitable rooms (excluding where glazed)	Option A	Solid core exterior door, minimum surface mass 24kg/m² with edge and threshold compression seals.
	Option B	Other door set with minimum performance Rw 30dB.
	Option C	Door has edge and threshold compression seals and is shielded by the building so that there is no line of sight to the highway road surface or any point 3.8m directly above railway tracks. (This option is only available where compliance is required with NOISE-S6, due to being within the Highway and Railway Moderate Noise Overlay, but compliance is not required with NOISE-S8).
Roof	Option A	**Skillion roof with light cladding** Surface mass up to 20kg/m² of roof cladding, and Internal lining of minimum 25kg/m² plasterboard, such as two layers of 13mm thick high-density plasterboard
	Option B	**Pitched roof with light cladding** Surface mass up to 20kg/m² of roof cladding, and Internal lining of minimum 17kg/m² plasterboard, such as two layers of 10mm thick high-density plasterboard.
	Option C	**Any roof with heavy cladding** Surface mass over 20kg/m² of roof cladding. No other requirements over Building Code.
	Ceiling penetrations, such as for recessed lighting or ventilation, shall not allow additional noise break-in.	
Ceiling cavity	Ceiling cavity infill of fibrous insulation, batts or similar, with a minimum density of 7kg/m².	
NOISE-APP7	**Ventilation**	

Minimum Ventilation Requirement

Note: This schedule assumes and requires construction that complies with the Building Code. These requirements are in addition to the requirements of that code.

A positive supplementary source of fresh air ducted from outside must be provided which complies with the following:

1. Each habitable room is to be provided with a mechanical ventilation system with air flow rates adjustable by the occupant in increments up to a high air flow setting of at least three air changes per hour,
2. Each habitable room is provided with cooling and heating that is controllable by the occupant and can maintain the inside temperature between 18°C and 25°C,
3. Noise from the operation of the ventilation system must not exceed 30 dB $L_{Aeq(30s)}$ when measured 1m away from any internal grille or diffuser.