Appendix 31

Commented [1]: By consent order dated 16 December 2024

Requirements for New Noise Sensitive Activities in the State Highway Noise Boundary and Rail Noise Boundary

Schedule 1: Construction Schedule for Indoor Noise Control:

Elements	**Minimum construction schedule for controlling noise within the State Highway Noise Boundary or Rail Noise Boundary in addition to the requirements of the New Zealand Building Code**	
Exterior walls	Wall cavity infill of fibrous insulation, batts or similar (minimum density of 9kg/m^3)	
	Cladding and internal wall lining complying with either Options A, B or C below:	
	Option A – Light cladding: timber weatherboard or sheet materials with surface mass between 8kg/m^2 and 30 kg/ m^2 of wall cladding	Internal lining of minimum 17 kg/ m^2 plasterboard, such as two layers of 10 mm thick high-density plasterboard, on resilient/isolating mountings
	Option B – Medium cladding: surface mass between 30 kg/m2 and 80 kg/ m^2 of wall cladding	Internal lining of minimum 17 kg/ m^2 plasterboard, such as two layers of 10 mm thick high-density plasterboard
	Option C – Heavy cladding: surface mass between 80 kg/ m^2 and 220 kg/ m^{2}of wall cladding	No requirements additional to New Zealand Building Code
Roof/ceiling	Ceiling cavity infill of fibrous insulation, batts or similar (minimum density of 7 kg/m^3)	
	Ceiling penetrations, such as for recessed lighting or ventilation, shall not allow additional noise break-in	
	Roof type and internal ceiling lining complying with either Options A, B or C below:	
	Option A – Skillion roof with light cladding: surface mass up to 20 kg/m^2 of roof cladding	Internal lining of minimum 25 kg/m^2 plasterboard, such as two layers of 13 mm thick high-density plasterboard
	Option B – Pitched roof with light cladding: surface mass up to 20 kg/m^2 of roof cladding.	Internal lining of minimum 17 kg/m^2 plasterboard, such as two layers of 10 mm thick high-density plasterboard
	Option C – Roof with heavy cladding: surface mass between 20 kg/m^2 and 60 kg/m^2 of roof cladding	No requirements additional to New Zealand Building Code
Glazed areas	Aluminium frames with full compression seals on opening panes	

	Glazed areas shall be less than 35% of each room's gross floor area	
	Either: • double-glazing with: - a laminated pane of glass at least 6 mm thick; - a cavity between the two panes of glass at least 12 mm deep; and - a second pane of glass at least 4 mm thick Or • any other glazing with a minimum performance of Rw 33 dB	
Exterior doors	Exterior door: • within the State Highway Noise Boundary or Rail Noise Boundary with a line-of-sight to any part of the state highway road surface; or • within the State Highway Noise Boundary or Rail Noise Boundary with a line-of-sight to any point 3.8m directly above the formed railway track.	Solid core exterior door, minimum surface mass 24 kg/m^2, with edge and threshold compression seals; or other doorset with minimum performance of Rw 30 dB
	Exterior door within the State Highway Noise Boundary or Rail Noise Boundary, or with no line-of-sight to any part of the state highway road surface or to any point 3.8m directly above the formed railway track	Exterior door with edge and threshold compression seals

Schedule 2: Indoor Design Noise Levels

Building type	***Occupancy/activity***	***Maximum road noise level LAeq(24h)***	***Maximum railway noise level LAeq(1h)***
Residential	*Sleeping spaces*	*40 dB*	*35 dB*
	All other habitable spaces	*40 dB*	*40 dB*
Education	*Lecture rooms/theatres, music studios, assembly halls*	*35 dB*	*35 dB*
	Teaching areas, conference rooms, drama studios, sleeping areas	*40 dB*	*40 dB*
	Libraries	*40 dB*	*40 dB*
Health	*Overnight medical care, wards*	*40 dB*	*40 dB*
	Clinics, consulting rooms, theatres, nurses' stations	*40 dB*	*40 dB*
Cultural	*Places of worship, marae*	*35 dB*	*35 dB*

Design level basis:

For State Highways, the design road noise is to be based on measured or predicted external noise levels plus 3 dB.

For rail:

(i) The source level for railway noise is 70 LAeq(1h) at a distance of 12 metres from the nearest track; and

(ii) The attenuation over distance is 3 dB per doubling of distance up to 40 metres and 6 dB per doubling of distance beyond 40 metres, or as modelled by a Suitably Qualified and Experienced Acoustic Consultant using a recognised computer modelling method for freight trains with diesel locomotives, having regard to factors such as barrier attenuation, the location of the dwelling relative to the orientation of the track, topographical features and any intervening structures.