

Package A: Noise levels within the *margin*

The following noise insulation package is designed to meet the indoor noise standards for residential developments in areas where noise levels exceed the noise *target* but are within the *limit*.

Area type	Orientation	Package A measures
Indoors		
Bedrooms	Facing road/rail corridor	<ul style="list-style-type: none"> 6mm (minimum) laminated glazing Fixed, casement or awning windows with seals No external doors Closed eaves No vents to outside walls/eaves Mechanical ventilation/airconditioning²
	Side-on to corridor	<ul style="list-style-type: none"> 6mm (minimum) laminated glazing Closed eaves Mechanical ventilation/airconditioning
	Away from corridor	No requirements
Living and work areas ³	Facing corridor	<ul style="list-style-type: none"> 6mm (minimum) laminated glazing Fixed, casement or awning windows with seals 35mm (minimum) solid core external doors with acoustic seals⁴ Sliding doors must be fitted with acoustic seals Closed eaves No vents to outside walls/eaves Mechanical ventilation/airconditioning
	Side-on to corridor	<ul style="list-style-type: none"> 6mm (minimum) laminated glazing Closed eaves Mechanical ventilation/airconditioning
	Away from corridor	No requirements
Other indoor areas	Any	No requirements
Outdoors		
Outdoor living area ⁵	Facing corridor	<ul style="list-style-type: none"> Minimum 2.0m high solid fence (e.g. Hardifence, pinelap, or Colorbond) Picket fences are not acceptable
	Side-on to corridor	
	Away from corridor	No requirements

² See section on Mechanical ventilation/airconditioning for further details and requirements.

³ These deemed-to-comply guidelines adopt the definitions of indoor spaces used in AS 2107-2000. A comparable description for bedrooms, living and work areas is that defined by the Building Code of Australia as a "habitable room". The Building Code of Australia may be referenced if greater clarity is needed. A living or work area can be taken to mean any "habitable room" other than a bedroom. Note that there are no noise insulation requirements for utility areas such as bathrooms. The Building Code of Australia describes these utility spaces as "non-habitable rooms".

⁴ Glazing panels are acceptable in external doors facing the transport corridor. However these must meet the minimum glazing requirements.

⁵ The Policy requires that at least one outdoor living area be reasonably protected from transport noise. The protected area should meet the minimum space requirements for outdoor living areas, as defined in the Residential Design Codes of Western Australia.

Package B: Noise within 3 dB above the *limit*

The following noise insulation package is designed to meet the indoor noise standards for residential developments in areas where transport noise levels exceed the noise *limit* but by no more than 3 dB (See Table 1 in the Policy).

Area type	Orientation	Package B measures
Indoors		
Bedrooms	Facing road/rail corridor	<ul style="list-style-type: none"> • 10mm (minimum) laminated glazing • Fixed, casement or awning windows with seals • No external doors • Closed eaves • No vents to outside walls/eaves • Mechanical ventilation/airconditioning⁶
	Side-on to corridor	<ul style="list-style-type: none"> • 10mm (minimum) laminated glazing • Closed eaves • Mechanical ventilation/airconditioning
	Away from corridor	No requirements
Living and work areas ⁷	Facing corridor	<ul style="list-style-type: none"> • 10mm (minimum) laminated glazing • Fixed, casement or awning windows with seals • 40mm (minimum) solid core external doors with acoustic seals⁸ • Sliding doors must be fitted with acoustic seals • Closed eaves • No vents to outside walls/eaves • Mechanical ventilation/airconditioning
	Side-on to corridor	<ul style="list-style-type: none"> • 6mm (minimum) laminated glazing • Closed eaves • Mechanical ventilation/airconditioning
	Away from corridor	No requirements
Other indoor areas	Any	No requirements
Outdoors		
Outdoor living area ⁹	Facing corridor	<ul style="list-style-type: none"> • Minimum 2.4m solid fence (e.g. brick, limestone or Hardifence)
	Side-on to corridor	<ul style="list-style-type: none"> • Colorbond and picket fences are not acceptable
	Away from corridor	No requirements

⁶ See section on Mechanical ventilation/airconditioning for further details and requirements.

⁷ These deemed-to-comply guidelines adopt the definitions of indoor spaces used in AS 2107-2000. A comparable description for bedrooms, living and work areas is that defined by the Building Code of Australia as a "habitable room". The Building Code of Australia may be referenced if greater clarity is needed. A living or work area can be taken to mean any "habitable room" other than a bedroom. Note that there are no noise insulation requirements for utility areas such as bathrooms. The Building Code of Australia describes these utility spaces as "non-habitable rooms".

⁸ Glazing panels are acceptable in external doors facing the transport corridor. However these must meet the minimum glazing requirements.

⁹ The Policy requires that at least one outdoor living area be reasonably protected from transport noise. The protected area should meet the minimum space requirements for outdoor living areas, as defined in the Residential Design Codes of Western Australia.

Mechanical ventilation/airconditioning

Where outdoor noise levels are above the "target", both Packages A and B require mechanical ventilation or airconditioning to ensure that windows can remain closed in order to achieve the indoor noise standards.

In implementing Packages A and B, the following need to be observed:

- evaporative airconditioning systems will not meet the requirements for Packages A and B because windows need to remain open;
- refrigerative airconditioning systems need to be designed to achieve fresh air ventilation requirements;
- air inlets need to be positioned facing away from the transport corridor where practicable;
- ductwork needs to be provided with adequate silencing to prevent noise intrusion.

Notification

Notifications on certificates of title and/or advice to prospective purchasers advising of the potential for noise impacts from road and rail corridors can be effective in warning people of the potential impacts of transport noise. Such advice can also bring to the attention of prospective developers the need and opportunities to reduce the impact of noise through sensitive design and construction of buildings and the location and/or screening of outdoor living areas.

Notification should be provided to prospective purchasers, and required as a condition of subdivision (including strata subdivision) for the purposes of noise-sensitive development or planning approval involving noise-sensitive development, where external noise levels are forecast or estimated to exceed the "target" criteria as defined by the Policy. In the case of subdivision and development, conditions of approval should include a requirement for registration of a notice on title, which is provided for under section 12A of the Town Planning and Development Act and section 70A of the Transfer of Land Act. An example of a suitable notice is given below.

Notice: This property is situated in the vicinity of a transport corridor, and is currently affected, or may in the future be affected, by transport noise. Further information about transport noise, including development restrictions and noise insulation requirements for noise-affected property, are available on request from the relevant local government offices.