

QUIET HOUSE DESIGN DEEMED-TO-SATISFY CONSTRUCTIONS FOR PACKAGE A

Area	Orientation to road corridor	Package A
Bedrooms	Facing	<ul style="list-style-type: none"> • Walls to R_w+C_{tr} 45dB • Windows and external door systems: Minimum R_w+C_{tr} 28dB (Table 6.4), total glazing area up to 40% of room floor area. [if R_w+C_{tr} 31dB: 60%] [if R_w+C_{tr} 34dB: 80%] • Roof and ceiling to R_w+C_{tr} 35dB (1 layer 10mm plasterboard)
	Side-on	•As above, except glazing R_w+C_{tr} values for each package may be 3dB less, or max % area increased by 20%
	Opposite	• No requirements
Indoor living and work Areas	Facing	<ul style="list-style-type: none"> • Walls to R_w+C_{tr} 45dB • Windows and external door systems: Minimum R_w+C_{tr} 25dB (Table 6.4), total glazing area limited to 40% of room floor area. [if R_w+C_{tr} 28dB: 60%] [if R_w+C_{tr} 31dB: 80%] • External doors other than glass doors to R_w+C_{tr} 26dB (Table 6.4)
	Side-on	• As above, except the glazing R_w+C_{tr} values for each package may be 3dB less, or max % area increased by 20%
	Opposite	• No requirements
Other indoor areas	Any	• No requirements

Note : Alternative constructions are acceptable, provided they are supported by a report prepared by a suitably qualified Acoustical Consultant.

MINIMUM ACOUSTIC RATING OF SELECTED EXTERNAL BUILDING EXTERIOR WALLS

Building Element	Type	$R_w + C_{tr}, dB$	Example Constructions
External wall	Steel framed	45	One row of 92mm studs at 600mm centres with – <ul style="list-style-type: none"> • resilient steel channels fixed to the outside of the studs; and • 9.5mm hardboard or 9mm fibre cement sheeting or 11mm fibre cement weatherboards fixed to the outside of the channels; and • 75mm thick glass or mineral wool insulation with a density of 11kg/m³ or • 75mm thick polyester insulation with a density of 14kg/m³, positioned between the studs; and • two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs.
		45	One row of 92mm studs at 600mm centres with – <ul style="list-style-type: none"> • resilient steel channels fixed to the outside of the studs; and • one layer of 19mm board cladding fixed to the outside of the channels; and • 6mm fibre cement sheets fixed to the inside of the channels; and • 75mm thick glass or mineral wool insulation with a density of 11 kg/m³ or • 75mm thick polyester insulation with a density of 14 kg/m³, positioned between the studs; and • two layers of 16mm fire-protective grade plasterboard fixed to the inside face of the studs.
	Single leaf masonry, brick veneer	45	<ul style="list-style-type: none"> • Single leaf of 150mm brick masonry with 13mm cement render on each face.
		50	Single leaf of 90mm clay brick masonry with – <ul style="list-style-type: none"> • a row of 70mm x 35mm timber studs or 64mm steel studs at 600mm centres; and • a cavity of 25mm between leaves; and • 75mm thick glass or mineral wool insulation with a density of 11kg/m³ or 75mm thick polyester insulation with a density of 14kg/m³ positioned between studs; and • one layer of 10mm plasterboard fixed to the inside face.
			Single leaf of 220mm brick masonry with 13mm cement render on each face.
			150mm thick unlined concrete panel. 200mm thick concrete panel with one layer of 13mm plasterboard or 13mm cement render on each face.
	Double brick	45	Two leaves of 90mm clay brick masonry with a 20mm cavity between leaves.
		50	Two leaves of 90mm clay brick masonry with – <ul style="list-style-type: none"> • a 50mm cavity between leaves; and • 50mm thick glass wool insulation with a density of 11kg/m³ or 50mm thick polyester insulation with a density of 14 kg/m³ in the cavity; and • Where wall ties are required to connect leaves, the ties are of the resilient type.
	Two leaves of 110mm clay brick masonry with – <ul style="list-style-type: none"> • a 50mm cavity between leaves; and • 50mm thick glass wool insulation with a density of 11kg/m³ or 50mm thick polyester insulation with a density of 14 kg/m³ in the cavity. 		

MINIMUM ACOUSTIC RATING OF GLAZED ELEMENTS

Building Element	Type	Airborne weighted sound reduction rating with traffic correction R_w+C_{tr}, dB	Building element Type Airborne weighted sound
Window, uPVC, aluminium or timber frame	Sliding or double hung opening	23	<ul style="list-style-type: none"> • 4mm monolithic glass
		26	<ul style="list-style-type: none"> • Single pane glazing to R_w 33dB • 6mm monolithic or laminated glass • 6mm toughened safety glass • '6-12-6' double insulated glass unit (IGU)
		29	<ul style="list-style-type: none"> • Single pane glazing to R_w 36dB • 10mm monolithic (aka float) glass • 10mm laminated or toughened safety glass • 6mm-12mm-10mm double insulating
	Fixed sash, awning or casement type opening	26	<ul style="list-style-type: none"> • 4mm monolithic glass
		31	<ul style="list-style-type: none"> • Single pane glazing to R_w 33dB • 6mm monolithic or laminated glass • 6mm toughened safety glass • '6-12-6' double insulated glass unit (IGU)
		34	<ul style="list-style-type: none"> • Single pane glazing to R_w 36dB • 10mm monolithic (a.k.a. float) glass • 10mm laminated or toughened safety glass • 6mm-12mm-10mm double insulated glass unit (IGU)
Single external door, aluminium uPVC or timber frame	Fully glazed sliding door	24	<ul style="list-style-type: none"> • 6mm monolithic or laminated • 5 or 6mm toughened safety glass
		27	<ul style="list-style-type: none"> • 10mm monolithic or laminated • 10mm toughened safety glass
	Fully glazed hinged door	28	<ul style="list-style-type: none"> • Certified R_w 31dB acoustically rated door and frame including seals • 6mm monolithic or laminated • 5 or 6mm toughened safety glass
		31	<ul style="list-style-type: none"> • Certified R_w 34dB acoustically rated door and frame including seals • 10mm monolithic or laminated • 10mm toughened safety glass
	Solid core timber frame, side hinged	26	<ul style="list-style-type: none"> • Certified R_w 28dB acoustically rated door and frame system including seals • 35mm solid core timber
		30	<ul style="list-style-type: none"> • Certified R_w 32dB acoustically rated door and frame system including seals • 40mm solid core timber without glass insert • 40mm solid core timber with not less than 6mm