

ENERGY EFFICIENCY MEASURES

Energy Efficiency Provisions For Houses BCA Part 3.12 [Climate Zone 6 Only]

Energy Efficiency Provisions for Class 1 (**houses**) & Class 10a (**attached garages**) buildings.
 Including **additions and alterations** to Class 1 (**houses**).

Roof Insulation: BCA 3.12.1.2

Roof Construction

Flat Ceiling with pitched roofs	RBM + R2.5 or add total of R3.0
Flat, skillion, cathedral roofs	RBM + R2.0 or add total of R3.0

Wall Insulation: BCA 3.12.1.4

Wall construction (external)

Double brick >220kg/m ²	On slab - nil, otherwise add R1.0
Brick veneer	RBM + R1.0 or add total of R1.5
All other walls	RBM + R1.0 or add total of R1.5

Floor Insulation: BCA 3.12.1.6

Suspended timber and concrete	add R1.0
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Air movement requirements to habitable rooms – BCA 3.12.4

Ceiling Fan	Not required
Min total ventilation opening area	Existing health & amenity of 5%: BCA Part 3.8

Effective Glazing Area: BCA 3.12.2 [% total glazing area to floor area of the storey (excluding roof lights)]

		Shading (eaves or overhang)				
		No Shading	300mm	450mm	600mm	900mm
Single Clear Glass - Aluminium Std Frame	- Aluminium Std Frame	28%				
	- Timber or UPVC	33%	34%			
3/12/3 clear IG with air fill.	- Aluminium Std Frame	33%	40%	43%		
	- Alum thermally improved	38%	46%	50%	55%	56%
	- Timber or UPVC	37%	45%	49%	53%	60%
Single solar Control, pyrolytic Low-e	- Aluminium Std Frame	38%				
	- Alum thermally improved	47%				
	- Timber or UPVC	49%				

NOTE! Only **50%** of north glazing needs to be used in effective glazing calculations.

Roof Lights: BCA 3.12.1.3

Shaft length

Total area of roof light as a % of room area

Less than 1.5%

1.5% to 3%

>3% to 5%

Less than 0.6m

No requirement. Controlled glazing to roof light

0.6m to < 1.5m

No requirement. Controlled glazing to roof light

NOTE! Aggregate area of roof lights for a building **must not exceed 3% of the total floor area.****Building Sealing: BCA 3.12.3** (draught exclusion)

1. Seal chimneys and flues with damper or flaps.
2. Seal external doors & windows.
3. Seal roof lights.
4. Seal exhaust fans with self-sealing device.
5. Internal lining systems to be sealed to minimise air leakages.

Class 10 Attachments: [garages etc] BCA 3.12.1.6

An attached Class 10a must not compromise the thermal performance of the Class 1 building.

Services: BCA 3.12.5**Hot water system-** to be designed and installed in accordance with Acceptable Construction Manuals and **Section 6A of AS/NZS 3500.4.2** or clause **3.38 of AS/NZS 3500.5.****Central Heating Water Piping- Piping to be insulated:** **Minimum Total R-Value**

Internal Piping

0.20Piping located within a ventilated wall space,
an enclosed building sub-floor or a roof space**0.45**Piping located outside the building or in a
enclosed building sub-floor or roof space**0.60****Heating and Cooling Ductwork- BCA 3.12.5.3**

Ductwork not in a conditioned space is to be insulated, sealed and waterproofed if exposed.

Abbreviations:**BCA** – Building Code of Australia**RBM** – Reflective Building Membrane**AS/NZS** – Aust Standards/New Zealand Standards**Definitions:****Conditioned Space** – A space within a building that is heated or cooled by the building's domestic services. (room heater and/or air conditioner)**R-Value** – The thermal resistance (m².K/W) of a component calculated by dividing its thickness by its thermal conductivity.**Total R-Value** – The sum of the R-Values of the individual component layers in a composite element including the air space and associated surface resistances.**Total U-Value** – The thermal resistance (W/m².K) of the composite element including air space and associated surface transmittance.**3/12/3** – means double glass with 12 mm min gap between 3 mm min thickness

More Information

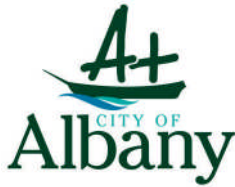
Attached for your information, please find BCA Energy Efficiency Check Sheet Part 3.12. Residential (Class1) and attached Class 10A (garages) in **Climate Zone 6**.

Should you have any questions or require any further information, please contact a member of the Development Services Team by either phoning on 9841 9383, by email planning@albany.wa.gov.au or in person at the City Offices.

**** DISCLAIMER ****

This information sheet is a guide only. Verification with original Local Laws, Acts, Planning Schemes, and other relevant documents is recommended for detailed references. The City of Albany accepts no responsibility for errors or omissions.

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BCA ENERGY EFFICIENCY CHECK SHEET PART 3.12

Residential (Class1) and attached Class 10A (garages) in **Climate Zone 6**

PROPERTY THIS APPLICATION RELATES TO			
Lot No.	House No.	Street Name	Suburb

		Application	Details of Compliance	
ROOF INSULATION (total required = R2.7)				
Flat ceilings with pitched roofs	RBM + R2.5 or add Total of R3.0	<input type="checkbox"/>		
Flat, skillion, cathedral roofs	RBM + R2.0 or add Total of R3.0	<input type="checkbox"/>		
WALL INSULATION (total required = R1.4)				
Double Brick > 220kg/m ² on slab	Nil requirements	<input type="checkbox"/>		
Brick Veneer	RBM + R1 or add Total of R1.5	<input type="checkbox"/>		
All other walls (specified in BCA Figure 3.12.1.5)	RBM + R1 or add Total of R1.5	<input type="checkbox"/>		
FLOOR INSULATION				
Unenclosed suspended timber or Concrete	R1.0	<input type="checkbox"/>		
AIR MOVEMENT REQUIREMENTS TO HABITABLE ROOMS				
Minimum total Ventilation opening Area (% of room area)	5% as per Part 3.8 of the BCA Health and Amenity	<input type="checkbox"/>	<input type="checkbox"/>	
EFFECTIVE GLAZING AREA (% of total glazing area to total floor area of the storey)				
Glazing type	Shade	Max %	Actual	
Single clear glass Aluminium Standard frame	No shade	28		<input type="checkbox"/>
	300mm	28		
	450-900mm	28		
3/12/3 clear IG for aluminium standard frame	No shade	33		<input type="checkbox"/>
	300mm	40		
	450-900mm	43		
Single solare control, Pyrolytic low e glass Aluminium Standard frame	No shade	38		<input type="checkbox"/>
	300mm	38		
	450-900mm	38		
ROOF LIGHTS (Less than 5% of the floor area of room)				
Shaft length			<input type="checkbox"/>	
Over 1.5m	Nil requirement			
0.6m to 1.5m	Controlled glazing to roof light if total area of roof light is 3% to 5% of the room area		<input type="checkbox"/>	

Less than 0.6m	Controlled glazing to roof light if total area of roof light is 1.5% to 3% of the room area.	<input type="checkbox"/>
<ul style="list-style-type: none"> Aggregate area of roof lights for a building must not exceed 3% of the total floor area of the house. Roof lights exceeding 5% of the floor area of a room may only be used if other openings are not available to provide adequate light (refer BCA Clause 3.12.1.3 for further detail) Roof lights under main roof – not alfresco area. 		
BUILDING SEALING		
Conditioned Space & Habitable Rooms	Seal chimneys and flues of solid fuel burning device with damper or flaps.	<input type="checkbox"/>
	Roof lights	<input type="checkbox"/>
	External doors and windows	<input type="checkbox"/>
	Exhaust fans	<input type="checkbox"/>
	Construction of roof walls & floors	<input type="checkbox"/>
CLASS 10A ATTACHMENTS		
The attached Class 10a must achieve the required R-Value Of the Class 1 building		<input type="checkbox"/>
SERVICES		
Evaporative Cooling Ductwork	Located externally or in roof Space – min R0.6	<input type="checkbox"/>
Refrigerated cooling or Heating ductwork	External to the building– min R1.5 Roof spaces – min R1.0	<input type="checkbox"/>
Hot water supply System	To be designed and installed in accordance with Section 6A of AS/NZS 3500.4.2 or clause 3.38 of AS/NZS 3500.5	<input type="checkbox"/>
INTERPRETATION		
RBM	Means a reflective building membrane with a reflective surface such as reflective foil laminate or foil batt capable of reducing radiant heat flow (a) with a reflectance of at least 0.95 and; (b) with an emittance of not more than 0.05.	
Solid Fuel Burning Device	Is a heater that burns material such as timber coal and the like – it does not refer to gas or liquid fuel burning devices	
Conditioned Space	Means a space within a building that is heated or cooled by a domestic services which includes, gas heating & air conditioning (refer BCA for further details).	
Controlled Glazing	Glazing to a roof light that achieves a Solar Heat Gain co-efficient of not more than 0.75 and a Total U-Value of not more than 5.0.	
Ventilation Opening	Means an opening in an external wall, floor or roof of a building designed to allow air movement into or out of a building by natural means, including a permanent opening, an openable part of a window, or door or other device which can be held open.	

The details provided on this Conformance Sheet are true and correctly reflect the plans and specifications submitted for a building licence:

Signature

Builder or representative

Contact

Date

Position

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