



BCA 5 STAR ENERGY EFFICIENCY CONFORMANCE CHECK SHEET

DTS SOLUTIONS FOR HOUSES AND ATTACHED GARAGES IN CLIMATE ZONE 5

Note: See HIA Information Sheet 'Guide to BCA 5 Star Energy Efficiency Check Sheets' for guidance on how to complete this Check Sheet.

BUILDING DETAILS

Updated May 2007

Lot number		House number	
Street name		Suburb	

CONFORMANCE DETAILS

Part 3.12.1.1 INSULATION	✓	Supporting information
Insulation to comply with AS/NZS 4859.1 and be installed so that it abuts or overlaps adjoining insulation, forms a continuous barrier with ceilings, walls, bulkheads, floors or the like and does not affect the safe or effective operation of domestic services or fittings.		
Reflective insulation to be installed with the necessary airspace to achieve the required R value between its reflective side and the building lining or cladding and to be closely fitted against any penetration, door or window opening and be adequately supported by framing members. Sheets to be overlapped by not less than 50 mm or taped together.		
Bulk insulation to be installed so that it maintains its position and thickness other than where it crosses roof battens, water pipes, electrical cabling or the like and in ceilings, where there is no insulation in the walls beneath, overlaps the external walls by not less than 50 mm.		

Part 3.12.1.5 FLOORS without heating systems	✓	Supporting information
No added insulation.		

Notes:

1. These provisions do not apply to intermediate floors in multi-storey houses.
2. Suspended floors with in-slab heating must have R1.0 perimeter and under-floor insulation.
3. A concrete slab-on-ground floor with a heating or cooling system must have R1.0 perimeter insulation to a depth of 300 mm or for the full depth of the vertical edge of the concrete slab-on-ground.
4. An under-tile or in-screed heating system in a bathroom, amenity area or the like is not considered to be an in-slab heating system.

Part 3.12.1.6 ATTACHED GARAGES AND STOREROOMS	✓	Supporting information
Roof, external walls and floor. Same R-values as required for the house.		
Separated from the house by a wall that has the same R-value as the external walls of the house.		

Part 3.12.2 EXTERNAL GLAZING	✓	Supporting information
Solar Heat Gain and Thermal Conductance to BCA requirements.		

Notes:

1. A spreadsheet calculator is available for downloading at www.abcb.gov.au (Australian Building Codes Board). The calculator may be used to verify that the windows in a building will comply with Building Code requirements for Solar Heat Gain and Thermal Conductance, taking into account the size, type, orientation and shading of the windows and window frames.
2. The ABCB Glazing Calculator will produce a print-out that can be attached to this Check-Sheet to demonstrate to the permit issuing authority that the windows will comply with the BCA Energy Efficiency Requirements.



BCA 5 STAR ENERGY EFFICIENCY CONFORMANCE CHECK SHEET

DTS SOLUTIONS FOR HOUSES AND ATTACHED GARAGES IN CLIMATE ZONE 5

Part 3.12.1.4 EXTERNAL WALLS	✓	Supporting information
220kg/m ² masonry. Suspended floor. Minimum R0.5 added insulation.	<input type="checkbox"/>	
220kg/m ² masonry. Floor in ground contact or masonry internal walls. No added insulation.	<input type="checkbox"/>	
Brick veneer (110 mm bricks). Minimum R1.35 added insulation.	<input type="checkbox"/>	
Timber stud. Weatherboard cladding. Minimum R1.43 added insulation.	<input type="checkbox"/>	
Timber stud. Cement or metal sheet cladding. Minimum R1.49 added insulation.	<input type="checkbox"/>	
Steel stud. Weatherboard cladding. Minimum R1.43 added insulation + R0.2 thermal break.	<input type="checkbox"/>	
Steel stud. Cement or metal sheet cladding. Minimum R1.49 added insulation + R0.2 thermal break.	<input type="checkbox"/>	

Notes:

1. These provisions do not apply to doors, vents, penetrations, glazing, shutters and the like.
2. Two leaves of 90 millimetre or wider clay or concrete masonry are deemed to achieve a surface density of 220 kilogram/square metre.
3. See BCA for information on the surface density of concrete wall panels, concrete or clay blocks and earth wall construction.
4. A thermal break may be provided by 20 millimetre timber battens or 12 millimetre expanded polystyrene strips fitted between the cladding and the frame.

Part 3.12.1.2 ROOFS	✓	Supporting information
Timber/steel frame. Tiled. Ceiling fixed to rafters. Minimum R2.83 added insulation.	<input type="checkbox"/>	
Timber frame. Metal clad. Ceiling fixed to rafters. Minimum R2.85 added insulation.	<input type="checkbox"/>	
Steel frame. Metal clad. No ceiling or ceiling fixed to rafters. Minimum R2.85 added insulation + R0.2 thermal break.	<input type="checkbox"/>	
Timber/steel frame. Tiled. Suspended ceiling. Ventilated. Minimum R2.98 added insulation.	<input type="checkbox"/>	
Timber/steel frame. Metal clad. Suspended ceiling. Ventilated. Minimum R3.0 added insulation.	<input type="checkbox"/>	
Timber/steel frame. Tiled. Suspended ceiling. Unventilated. Minimum R2.80 added insulation.	<input type="checkbox"/>	
Timber/steel frame. Metal clad. Suspended ceiling. Unventilated. Minimum R2.82 added insulation.	<input type="checkbox"/>	

Notes:

1. Insulation R values are required for the upward direction of heat flow.
2. The total R value of roof insulation can include both bulk and sheet insulation.
3. See note 4 above.
4. Gaps in tiled and sarked or metal sheet roofing are not acceptable methods of providing roof ventilation.

3.12.5.2 CENTRAL HEATING WATER PIPING	✓	Supporting information
Internal flow and return piping in an unventilated wall space, internal floor between storeys or between ceiling insulation and a ceiling. Hot water piping encased in a concrete floor slab which is not part of a floor heating system. Minimum R0.2 insulation.	<input type="checkbox"/>	
Flow and return piping and cold water supply and relief valve piping within 500 mm of the connection to the central water heating system. In a ventilated wall space or an enclosed sub-floor or a roof space minimum R0.3 insulation. Outside the building or in an unenclosed sub-floor or roof space minimum R0.3 insulation.	<input type="checkbox"/>	



BCA 5 STAR ENERGY EFFICIENCY CONFORMANCE CHECK SHEET

DTS SOLUTIONS FOR HOUSES AND ATTACHED GARAGES IN CLIMATE ZONE 5

Part 3.12.1.3 ROOF LIGHTS							/	Supporting information	
Aggregate area of roof lights \leq 3% of the floor area of the storeys being served.									
Individual roof lights to comply with the following table:									
Roof Light Shaft Index <small>(see note 2)</small>	Area of roof light \div floor area of the room it serves \times 100%								
	$\geq 1.5\% \leq 3\%$		$\geq 3\% \leq 5\%$		$\geq 1.5\% \leq 5\%$		$> 10\%$ (see note 7)		
	SHGC	U	SHGC	U	SHGC	U	SHGC	U	
2.5 +	NA	≤ 5.0	NA	≤ 5.0	NA	≤ 2.5	≤ 0.25	≤ 1.3	
$1.0 \leq 2.5$	NA	≤ 5.0	NA	≤ 5.0	≤ 0.45	≤ 2.5	≤ 0.25	≤ 1.3	
$0.5 \leq 1.0$	NA	≤ 5.0	≤ 0.7	≤ 5.0	≤ 0.35	≤ 2.5	≤ 0.25	≤ 1.3	
< 0.5	≤ 0.75	≤ 5.0	≤ 0.5	≤ 5.0	≤ 0.25	≤ 2.5	≤ 0.25	≤ 1.3	

Notes:

1. \geq means greater than or equal to (not less than) and \leq means less than or equal to (not more than).
2. This Part applies only to roof lights ≥ 1.5 per cent of the floor area of the habitable room or interconnecting space they serve, including a corridor, hallway, stairway or like.
3. The Roof Light Shaft Index is determined by measuring the distance from the centre of the light shaft at the roof to the centre of the shaft at the ceiling level and dividing it by the average internal dimension (or diameter) of the shaft opening at the ceiling level.
4. Solar Heat Gain Coefficient (SHGC) and Thermal Conductance (U) values may be available from manufacturers - see www.wers.net.
5. The area of roof lights is the combined area of all roof lights serving the room or interconnecting spaces.
6. The area of the roof light is the area of the roof opening that allows light to enter the building.
7. The thermal performance of an imperforate ceiling diffuser may be included in the U_T value of the roof light.
8. The area of the roof light can exceed 10 per cent of the floor area of the room it serves when the natural lighting required by Part 3.8.4.2 of the BCA can not be achieved by other means.

Part 3.12.4 AIR MOVEMENT		/	Supporting information	
Total ventilation opening area.	Without a ceiling fan or evaporative cooler. Minimum 7.5% of floor area.			
	With a ceiling fan. Minimum 5% of floor			
	With an evaporative cooler. Minimum 7.5% of floor area.			
Breeze path to another ventilation opening.	Passes through not more than two 1.5m ² openings in internal walls and travels not more than 20m between openings.			
	Two openings each not less than 25% of the required opening area for the room.			

Notes:

1. These provisions apply to all habitable rooms individually.
2. A ventilation opening is 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 and includes a permanent opening, part of a window that can be opened, or door or other device that can be held open.
3. Air movement can be provided from an adjoining room or rooms including an enclosed verandah but not a sanitary compartment. The opening or openings between the rooms must comply as if they were ventilation openings. Under this circumstance the total ventilation opening area must be calculated pro-rata using the combined floor area of all rooms being serviced.
4. Ceiling fans and evaporative coolers must be permanently fitted, have speed controllers and ceiling fans must have a blade diameter of not less than 0.9 metres.
5. A ventilation opening may serve more than one breeze path.



BCA 5 STAR ENERGY EFFICIENCY CONFORMANCE CHECK SHEET

DTS SOLUTIONS FOR HOUSES AND ATTACHED GARAGES IN CLIMATE ZONE 5

Part 3.12.3 BUILDING SEALING	✓	Supporting information
Dampers or flaps required for open solid fuel burning devices.	<input type="checkbox"/>	
Self-sealing dampers required for exhaust fans serving conditioned spaces.	<input type="checkbox"/>	
Self-sealing dampers fitted to evaporative coolers serving heated rooms.	<input type="checkbox"/>	
Roof lights serving conditioned spaces required to be fitted with weather seals, shutters or ceiling diffusers.	<input type="checkbox"/>	
Weather seals required to be fitted to or incorporated in external doors and windows serving conditioned spaces.	<input type="checkbox"/>	
Close fitting or sealed internal linings required in conditioned spaces.	<input type="checkbox"/>	

Notes:

1. These provisions do not apply to garages, gas vents and where evaporative cooling is the only means of air-conditioning.
2. Liquid and gas burning devices do not require dampers or flaps.
3. Air-conditioned or gas heated rooms are termed 'conditioned spaces'.
4. Weather seals are not required to external louvres.
5. Weather seals can be foam or rubber compressible strips, fibrous seals or the like.
6. A range-hood is considered to be sealed if it is fitted with a filter.

3.12.5.0 HOT WATER SYSTEM	✓	Supporting information
Hot water supply system to be designed and installed in accordance with Section 8 of AS/NZS 3500.4 or clause 3.38 of AS/NZS 3500.5.	<input type="checkbox"/>	

3.12.5.1 INSULATION OF SERVICES	✓	Supporting information
Thermal insulation for central heating water piping and heating and cooling ductwork to be protected against the effects of weather and sunlight and able	<input type="checkbox"/>	

3.12.5.3 HEATING AND COOLING DUCTWORK	✓	Supporting information
Thermal insulation material to be in accordance with AS/NZS 4859.1	<input type="checkbox"/>	
Ductwork external to the building - sealed against air loss by closing all openings in the surface, joints and seams with adhesives, mastics, sealants or gaskets in accordance with AS 4254 for a Class C seal; and for flexible ductwork, sealed with a sealant and draw band encased with flexible tape.	<input type="checkbox"/>	
Duct insulation located under a suspended floor, in an attached garage and in a roof space to be protected by an outer sleeve of protective sheeting to prevent the insulation becoming damp and sealed with adhesive tape not less than 48 mm wide and creating an airtight and waterproof seal.	<input type="checkbox"/>	
Evaporative cooling system. Min. R0.6 duct insulation.	<input type="checkbox"/>	
Heating-only system or refrigerated cooling-only system. Min. R1.0 duct insulation.	<input type="checkbox"/>	
Combined heating/refrigerated cooling system. Min R1.0 duct insulation.	<input type="checkbox"/>	
All fittings. Min. R0.4	<input type="checkbox"/>	

Notes:

1. These provisions do not apply to piping and ducting in air-conditioned or gas heated rooms i.e. 'conditioned spaces'.
2. Piping within or passing through a timber member is deemed to have adequate insulation.



BCA 5 STAR ENERGY EFFICIENCY CONFORMANCE CHECK SHEET

DTS SOLUTIONS FOR HOUSES AND ATTACHED GARAGES IN CLIMATE ZONE 5

DISCLAIMER

The Housing Industry Association Ltd does not warrant the accuracy of the information contained in this Check Sheet and will not be liable for any reliance on it. The Check Sheet is a simplified summary of the Building Code of Australia energy efficiency provisions. It is not intended as a substitute and should be used along with the BCA. Building license applicants should make inquiries and investigations or seek expert advice before making any decision, or engaging in any activity, that is the subject of, or is related to, or arising from, the subject matter of the information contained in this document. For clarification or additional information, please contact HIA on (08) 9492 9200.

DECLARATION

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

Name of applicant or representative:					
Company name:					
Address:					
Phone/s:		Fax:		Email:	
Signature:				Date:	