

ARCHITECT AND BUILDING DESIGNER

Lightweight Cladding Checklist

Considerations by ABCB climate zone, with common issues across all zones where NCC 2025 Vol 2 provisions apply

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How to use

The following checklist provides a list of considerations that an architect and building designer need to take into consideration when designing and specifying lightweight cladding on residential buildings in Australia. Some considerations relate to 'best practice' and are in excess of the requirements of the NCC.
A separate checklist is available for Estimating/ Purchasing as well as Builder and Trade Contractor information.

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DESIGN CONSIDERATIONS

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Determine ABCB Climate Zone location of the building		The climate zone location will help determine the 'risk' of condensation and mould withing the building. Refer to Your Home publication and website for the further information and Pro-Clima "Australia Study 2023" for further information on the risks and locations.	

Climate Zone 1 – Hot and humid

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer/wet season: high risk, if air conditioned Winter/dry season: minimal risk		
☐	Select pliable building membrane selection – the 'wall wrap'. Check membrane manufacturer's requirements for use and installation in high wind areas.	Class 1 – reflective foil vapour barrier	NCC 2025 requires minimum cavity width of 12mm however reflective foil will require minimum 20mm cavity width for thermal qualities	
☐		Class 2 – reflective foil – slightly higher vapour permeability	NCC 2025 allows for direct fix with Class 2. If reflective foil thermal qualities are claimed, a 20mm min cavity width is required	
☐		Class 3 – vapour permeable membrane	NCC 2025 allows for direct fix with Class 3. If reflective foil thermal qualities are claimed, a 20mm min cavity width is required	
☐		Class 4 - vapour permeable membrane	Not allowed under NCC 2025 in CZ 1	
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and thermal control layers (Class 1 and 2 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	
☐		Water and vapour control layers (Class 3 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	

Climate Zone 1 – Hot and humid (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Is the building going to be air conditioned?		If the building is to be air conditioned, refer to the 'Condensation Risk' heading above for an indication of the risk of condensation likely to form in the building structure. In Climate Zone 1, air conditioned buildings are prone to condensation and mould on the internal surfaces and linings and architects and building designers should take the necessary precautions in the construction detailing to help eliminate the risk for condensation and mould. Vapour is mainly driven inwards in this climate zone, so a vapour barrier is best which also has reflective thermal qualities. This brings the need for a cavity to not only utilise the thermal qualities of the membrane but also creates a cavity to help disperse the water vapour driven inwards. A drained and ventilated cavity assists with managing the water vapour.	

Climate Zone 2 – Warm Humid

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer/wet season: high risk, if air conditioned Winter/dry season: minimal risk except for areas around Ipswich and beyond.		
☐	Select pliable building membrane selection – the 'wall wrap'. Check membrane manufacturer's requirements for use and installation in high wind areas. Check cladding manufacturer's recommendations for building membrane behind cladding.	All classes of building membrane	NCC 2025 provides no provisions for Climate Zone 2 so architects and building designers must make the selection. Previous editions of the NCC have provided no guidance or provisions for CZ 2.	
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and thermal control layers (Class 1 and 2 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	
☐		Water and vapour control layers (Class 3 and 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	

Climate Zone 2 – Warm Humid (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Is the building going to be air conditioned?		If the building is to be air conditioned, refer to the 'Condensation Risk' heading above for an indication of the risk of condensation likely to form in the building structure. In Climate Zone 2, air conditioned buildings are prone to condensation and mould on the internal surfaces and linings and architects and building designers should take the necessary precautions in the construction detailing to help eliminate the risk for condensation and mould. This climate zone is the hardest to design for since it has hot humid summers but areas around Ipswich can have cold winters. Vapour is mainly driven inwards in this climate zone in summer closest to the coastal areas but in winter in the western areas, warm water vapour is driven outwards. Selecting the appropriate building membrane will depend on the location and how the building/homes will be operated by the occupants with air conditioning and heating or passive cooling/heating. A drained and ventilated cavity assists best with managing the water vapour. Cladding manufacturers will recommend the use of a Class 4 building membrane so the use in conjunction with masonry veneer will present the most challenges. The membrane will be best determined by the behaviour of the occupants.	

Climate Zone 3 – Hot Dry / Warm Temperate

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer /Wet season: Minimal Winter /Dry season :Some risk		
☐	Select pliable building membrane selection – the 'wall wrap'. Check membrane manufacturer's requirements for use and cladding manufacturer's recommendations for the building membrane	Class 1 – reflective foil vapour barrier	Not allowed under NCC 2025	
☐		Class 2 – reflective foil – slightly higher vapour permeability	NCC 2025 allowable with a minimum cavity width of 12mm. If reflective foil thermal qualities are claimed, a 20mm min cavity width is required	
☐		Class 3 – vapour permeable membrane	NCC 2025 allowable with no minimum cavity	
☐		Class 4 - vapour permeable membrane	NCC 2025 allowable with no minimum cavity, however if a membrane has reflective qualities and the thermal benefits are being claimed, a min 20mm air space will be required	

Climate Zone 3 – Hot Dry / Warm Temperate (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and thermal control layers (Class 2 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	
☐		Water and vapour control layers (Class 3 and 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	
☐	Is the building going to be air conditioned?		If the building is to be air conditioned, refer to the 'Condensation Risk' heading above for an indication of the risk of condensation likely to form in the building structure. In Climate Zone 3, while air conditioning can be used during the day in summer, it will also be used to heat the interior during the cold . Architects and building designers should take the necessary precautions in the construction detailing to help eliminate the risk for condensation and mould. Vapour is mainly driven outwards in this climate zone in winter, so a vapour permeable membrane works best. This brings the need for a cavity to help disperse the water vapour driven outwards. A drained and ventilated cavity assists with managing the water vapour.	

Climate Zone 4 – Hot Dry Summers/ Cool Winters

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer season: Minimal Winter /Dry season: High risk		
☐	Select pliable building membrane selection – the 'wall wrap'. Check membrane manufacturer's requirements for use and cladding manufacturer's recommendations for the building membrane	Class 1 – reflective foil vapour barrier	Not allowed under NCC 2025	
☐		Class 2 – reflective foil – slightly higher vapour permeability	Not allowed under NCC 2025	
☐		Class 3 – vapour permeable membrane	NCC 2025 allowable but with minimum cavity of 12mm	
☐		Class 4 - vapour permeable membrane	NCC 2025 allowable with no minimum cavity, however if a membrane has reflective qualities and the thermal benefits are being claimed, a min 20mm air space will be required	

Climate Zone 4 – Hot Dry Summers/ Cool Winters (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and vapour control layers (Class 3 and 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	
☐	Is the building going to be air conditioned?		If the building is to be air conditioned, refer to the 'Condensation Risk' heading above for an indication of the risk of condensation likely to form in the building structure. In Climate Zone 4, while air conditioning can be used during the day in summer, it will also be used to heat the interior during the cold nights. Architects and building designers should take the necessary precautions in the construction detailing to help eliminate the risk for condensation and mould. Vapour is mainly driven outwards in this climate zone in winter, so a vapour permeable membrane works best. This brings the need for a cavity to help disperse the water vapour driven outwards. A drained and ventilated cavity assists with managing the water vapour.	

Climate Zone 5 – Warm Temperate

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer season: Minimal, but if air conditioned, high risk Winter season: High risk		
☐	Select pliable building membrane selection – the 'wall wrap'. Check membrane manufacturer's requirements for use and cladding manufacturer's recommendations for the building membrane	Class 1 – reflective foil vapour barrier	Not allowed under NCC 2025	
☐		Class 2 – reflective foil – slightly higher vapour permeability	Not allowed under NCC 2025	
☐		Class 3 – vapour permeable membrane	NCC 2025 allowable but with minimum cavity of 12mm	
☐		Class 4 - vapour permeable membrane	NCC 2025 allowable with no minimum cavity, however if a membrane has reflective qualities and the thermal benefits are being claimed, a min 20mm air space will be required	

Climate Zone 5 – Warm Temperate (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and vapour control layers (Class 3 and 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	
☐	Is the building going to be air conditioned?		If the building is to be air conditioned, refer to the 'Condensation Risk' heading above for an indication of the risk of condensation likely to form in the building structure. In Climate Zone 5, while air conditioning can be used during the day in summer, it will also be used to heat the interior during the cold nights. Architects and building designers should take the necessary precautions in the construction detailing to help eliminate the risk for condensation and mould. This climate zone is one of the hardest to design for since it has hot humid summers but areas can also have cold winters. Vapour is mainly driven inwards in this climate zone in summer closest to the coastal areas but in winter in the western areas, warm water vapour is driven outwards. Selecting the appropriate building membrane will depend on the location and how the building/homes will be operated by the occupants with air conditioning and heating or passive cooling/heating. A drained and ventilated cavity assists best with managing the water vapour. Cladding manufacturers will recommend the use of a Class 4 building membrane so the use in conjunction with masonry veneer will present the most challenges. The membrane will be best determined by the behaviour of the occupants.	

Climate Zone 6– Mild to cool Temperate

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer season: Low risk Winter season: High risk		

Climate Zone 6– Mild to cool Temperate (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Select pliable building membrane selection – the ‘wall wrap’. Check membrane manufacturer’s requirements for use and cladding manufacturer’s recommendations for the building membrane	Class 1 – reflective foil vapour barrier	Not allowed under NCC 2025	
☐		Class 2 – reflective foil – slightly higher vapour permeability	Not allowed under NCC 2025	
☐		Class 3 – vapour permeable membrane	Not allowed under NCC 2025	
☐		Class 4 - vapour permeable membrane	NCC 2025 allowable with minimum 12mm cavity, however if a membrane has reflective qualities and the thermal benefits are being claimed, a min 20mm air space will be required	
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a ‘control layer’? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and vapour control layers (Class 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	

Climate Zone 7 – Cool Temperate

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer season: Low risk Winter season: Certain risk		
☐	Select pliable building membrane selection – the ‘wall wrap’. Check membrane manufacturer’s requirements for use and cladding manufacturer’s recommendations for the building membrane	Class 1 – reflective foil vapour barrier	Not allowed under NCC 2025	
☐		Class 2 – reflective foil – slightly higher vapour permeability	Not allowed under NCC 2025	
☐		Class 3 – vapour permeable membrane	Not allowed under NCC 2025	
☐		Class 4 - vapour permeable membrane	NCC 2025 allowable with minimum 12mm cavity, however if a membrane has reflective qualities and the thermal benefits are being claimed, a min 20mm air space will be required	

Climate Zone 7 – Cool Temperate (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and vapour control layers (Class 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	

Climate Zone 8 – Alpine

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Condensation risk	Summer season: Certain risk Winter season: Certain risk		
☐	Select pliable building membrane selection – the 'wall wrap'. Check membrane manufacturer's requirements for use and cladding manufacturer's recommendations for the building membrane	Class 1 – reflective foil vapour barrier	Not allowed under NCC 2025	
☐		Class 2 – reflective foil – slightly higher vapour permeability	Not allowed under NCC 2025	
☐		Class 3 – vapour permeable membrane	Not allowed under NCC 2025	
☐		Class 4 - vapour permeable membrane	NCC 2025 allowable with minimum 12mm cavity, however if a membrane has reflective qualities and the thermal benefits are being claimed, a min 20mm air space will be required	
☐	Check AS 4200.2 for installation requirements for pliable building membrane. What functions are the membrane providing as a 'control layer'? Membrane will always have two functions.	Water control layer ONLY (all classes except perforated membranes) – highly unlikely that membrane is only for water control only	Membrane must be installed taut across frame. Membrane can be lapped min 150mm or min 50mm and joints taped and fixed to frame at 150 mm crs for timber; 300 mm crs for steel frames	
☐		Water and vapour control layers (Class 4 membranes)	Membrane must be installed taut across frame. Membrane must be lapped at least 50mm and taped and sealed at all joins and penetrations. Fixings as for water control only	

Common Issues across all climate zones (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
Common Issues across all climate zones				
✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Select the battens required for the wall cavity. The cladding type will determine if the fixing runs vertically or horizontally and this will determine the type of batten to be used.		For timber frames, a 12mm minimum cavity will require at least 18mm dressed timber since 12mm is not usually available commercially in timber and 11mm is below the minimum width. The timber will need to be H3 treated being in a cavity. Any horizontal batten will be required to be castellated for the drainage and ventilation. If the cladding is only fixed to the timber battens, these become structural and any structural batten will need to be 35mm min thickness. For steel frames, a thermal break is also required on all parts of the steel frame along with the 12mm min cavity width. If timber is used as the thermal break, the battens will need to be a minimum of 20mm thick to meet the NCC minimum R value. Since 20mm is not available commercially, the next sizing is 25mm rough sawn or 31mm dressed moulding. Any horizontal batten will be required to be castellated for the drainage and ventilation. Any structural batten will be required to be 35mm min thickness. Refer to FWPA Standard "Design and Installation of Timber Cladding D01" for further information about sizing, fixing and treatment levels for timber battens.	
☐	Select thermal break if steel frame is used in the structure.		Thermal break is required on all parts of the steel frame to meet the NCC thermal break requirements and energy software calculation assumptions. Determine which building membrane is selected and assess if a cavity is required for reflective thermal qualities. Determine thickness of thermal break based on cavity width and select appropriate thermal break. If timber, see above for further information. If other material, determine if the thermal break can meet all the size and R value requirements. ATI offer 12mm, 20mm and 35mm thick thermal breaks to suit 12mm min, 20mm min and 35 mm cavity widths. One product to suit both thermal break and cavity width requirements in one product. Cavi-Break® and Cavi-Vent® with higher R value performance. Refer to the ATI website for details www.australianthermal.com.au	
☐	For vented cavities, select the vented cavity closer to the bottom and top of the cladding.		If vented cavity is used, NCC 2025 requires minimum 1000mm ² /m of ventilation. Bottom closer usually sits hidden behind the cladding. Top vented closer will determine the detailing at the eaves or the junction between floor levels. ATI offer a closer for 12mm cavities for the bottom and top. Refer to the ATI website for details www.australianthermal.com.au	

Common Issues across all climate zones (continued)

✓	CONSIDERATION	OPTION / SELECTION	REQUIREMENT AND COMMENTS	NOTES
☐	Are metal flashings required at the base of the lightweight cladding over brickwork or AAC panels?		Check the width of any flashings used between the cladding and brickwork or AAC. To suit the cavity and thermal break/cavity battens specified. The pre-formed flashings will need to be fixed back to the frame and allow for drainage of the moisture from the cavity behind the cladding. Allowance should also be made for any settlement of the timber frame.	
☐	Is there a slab rebate at the bottom of the wall cladding?		Check to make sure the slab rebate will not be an issue with the cladding and the detail at the bottom of the wall. Adjust the rebate if needed or adjust the internal dimensions of the rooms, if possible.	
☐	Is there sufficient material to fix the cladding to at the floor joist level around the building?		The ends of the floor joists may not have sufficient fixing locations for the cladding or to fix the thermal breaks over the frame. Check with the truss and framing manufacturer for further information on the direction and blocking available at the ends of the floor joists.	
☐	Has the correct total 'R' value of the wall been provided to the energy assessor for the energy efficiency assessment?		Check that the energy assessor is increasing the R value of the thermal break, if using the 20mm Cavi-Break, and including the R value of the air space for the 20mm cavity in the assessment software. Cavi-Break Strips provide better performance and will increase the 'Total R value' of external walls. Energy assessors will need to know the 'Total R value' of the walls using Cavi-Break Strips to gain the cost benefits.	
☐	Are there 'R' value tables available for Cavi-Break Strips when used with common cladding materials?		The ATI website has an R value comparison table available under 'Resources' for download or viewing. www.australianthermal.com.au	
☐	Are there installation diagrams for various construction details?		The ATI website has a number of installation diagrams available under 'Resources' for download or viewing. www.australianthermal.com.au	
☐	Is there 'Evidence of Suitability' available to provide to the building certifier?		The ATI website has a Product Technical Statement available under 'Resources' for download or viewing that can be provided to the building certifier. www.australianthermal.com.au	