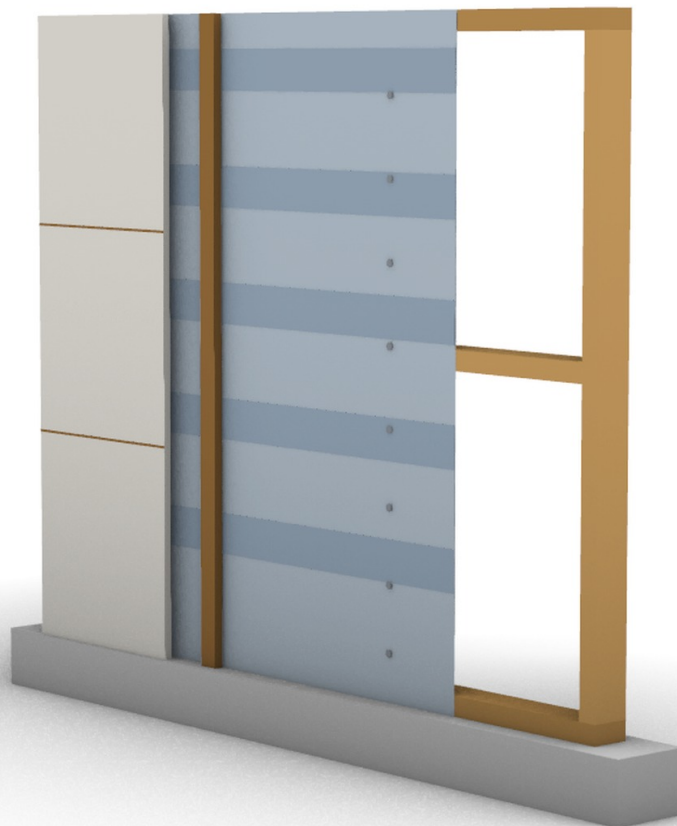


Installing Wall Sarking

A practical, on-site guide to installing wall sarking to **AS 4200.2** — and avoiding the installation defects that let water and moisture past it. Membrane selection to **AS 4200.1** and the **NCC 2025** condensation provisions.



Designers

Certifiers

Builders

Installers

ABOUT THIS GUIDE

Getting wall sarking right — the first time

This is a **practical, on-site guide to installing wall sarking correctly** — and to avoiding the installation defects that let water, air and moisture past it. It assumes you know what a pliable building membrane is and where it belongs; the focus is doing the work right on the wall.

It is built around **AS 4200.2**, the Standard that governs how membranes are installed, and draws membrane *selection* from AS 4200.1 and the climate-based vapour requirements from the NCC. Its focus is the work on site: how to lap and fix the membrane, treat openings, and avoid the common installation defects.

Who it is for

Designers and certifiers specifying membranes; builders and installers fixing them on site. Compliance-anchored, and written to be practical on site.

Scope

External **framed and masonry-veneer walls**. Roof, ceiling and floor sarking share the same Standards but are outside this edition.

How to cite

Excelo (2026). *Installing Wall Sarking: a practical guide to AS 4200.2*. Technical Guide TG-01, Edition 1. A referenced document in Excelo facade specifications.

Documents referenced

- **AS 4200.2:2017** (incl. Amdt 1) — Pliable building membranes, Pt 2: *Installation (primary)*
- AS 4200.1:2017 — Pt 1: *Materials*
- NCC 2025 Vol One F8 / ABCB Housing Provisions 2025 Part 10.8 — *Condensation management*
- AS/NZS 4859.1 — Thermal insulation materials
- AS 1530.2 — Flammability of materials

Contents

1	Selecting the membrane (AS 4200.1)	03
2	Climate zone & the vapour matrix	04
3	Installation — laps & fixing	06
4	Openings — the cut & fold	08
5	On-site checklist	09
6	Common Defects	10

On authority. Requirements here are drawn directly from AS 4200.2, AS 4200.1 and the NCC current at publication. Those documents prevail in any difference — always confirm the edition adopted in your State or Territory.

1. Selecting the right membrane

AS 4200.1 classifies membranes so a specification can be written to performance, not brand. Four properties matter for walls.

1.1 Vapour permeance — barrier vs breathable

The single most important property for condensation control is whether the wrap *stops* vapour or *lets it through*. AS 4200.1 sorts membranes into four classes, from barrier to fully breathable.

Class	What it does & when to use it
Class 1	Vapour barrier — effectively stops vapour. Holds outdoor moisture out in hot, humid climates.
Class 2	Low permeance — mostly holds vapour back.
Class 3	Medium permeance — a middle ground.
Class 4	Vapour permeable ("breathable") — lets the wall dry outward. Needed in cooler climates (Section 2).

1.2 Water barrier

To act as sarking (water control), the membrane must be **classified as a water barrier** to AS 4200.1 — it resists water penetration and discharges water to the outside face.

1.3 Fire

Sarking-type materials must be **low-flammability** (Flammability Index to AS 1530.2). Confirm it on the product's certificate.

1.4 Duty — how tough the wrap is

Grades run **Light · Medium · Heavy · Extra Heavy**. For **walls and gables a light-duty wrap is all the Standard asks** — and it is what the common products are (e.g. Hardie Weather Barrier is light duty). Heavier grades are a *roofing* thing, where the membrane spans battens.

Specify a higher grade, or closer fixing centres, only where the wrap will be **exposed to weather for an extended period** before cladding.

Reflective (foil) wraps. Install to the manufacturer's instructions: the **printed / anti-glare face faces outward** and the **reflective face faces the cavity**. The foil performs only where an air gap adjoins it; in contact with cladding or lining it has no effect. Reflective foil conducts electricity — keep clear of live wiring (AS 4200.2 cl. 1.5 / App A).

SECTION 2 · NCC 2025 CONDENSATION MANAGEMENT

2. Climate zone & the vapour matrix

Since NCC 2022 the vapour permeance of the membrane in an external wall is **regulated by climate zone**. Get it wrong and the wall cannot dry — the leading cause of concealed condensation. The first step is always to **identify the building's climate zone**.



Step 1 — Find your climate zone

Scan the code, or visit the **ABCB Climate Map** and search by **address, suburb or postcode**. It returns the correct NCC climate zone every time — boundaries follow LGA and geography, not a simple line.

abcb.gov.au/abcb-climate-map

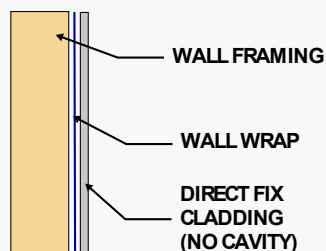
The principle

In **cooler climates** the wall must dry *outward*, so the outer membrane must be **vapour permeable**. In **hot, humid climates** the greater risk is outdoor moisture driven *inward*, so a **less permeable** membrane is preferred.

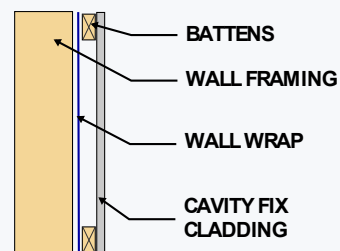
The eight NCC climate zones

- | | |
|---|---|
| <p>1 Hot humid summer, warm winter. Darwin, Cairns, Broome</p> <p>3 Hot dry summer, warm winter. Alice Springs, Longreach</p> <p>5 Warm temperate. Sydney, Perth, Adelaide, Newcastle</p> <p>7 Cool temperate. Canberra, Hobart, Ballarat, Orange</p> | <p>2 Warm humid summer, mild winter. Brisbane, Gold Coast, Coffs Harbour</p> <p>4 Hot dry summer, cool winter. Mildura, Wagga, Dubbo</p> <p>6 Mild temperate. Melbourne, Geelong, Warrnambool</p> <p>8 Alpine. Thredbo, Mt Hotham, high country</p> |
|---|---|

Climate zones 6, 7 & 8 (cool / cold / alpine). Cladding must be **cavity-fixed, not direct-fixed** — battened out to a **drained and ventilated cavity** — with a vapour-permeable (Class 4) wrap. (Brick veneer already has this cavity.) It is a cladding-fixing rule; the solid-wall types exempt under NCC 10.8.1(5) — single-skin masonry, single-skin concrete — sit outside it and need neither.



DIRECT FIX



CAVITY FIX

Direct-fix vs cavity-fix. Direct-fix sits the cladding on the wrap (no cavity); cavity-fix battens it out to a drained & ventilated cavity — the required build in zones 6, 7 & 8.

Example locations are indicative. Climate-zone boundaries follow Local Government Areas and geography — always confirm the exact zone with the ABCB Climate Map.

2.1 The wall-wrap matrix by climate zone

From **NCC 2025** (ABCB Housing Provisions Table 10.8.1 / NCC Vol One F8D3): for each climate zone, what the outer wrap between the cladding and the frame needs to do. Find your zone (previous page), read across.

Climate zone	Cladding fixing	AS 4200.1 class	What to use
Zone 1 — tropical / hot humid (Darwin, Cairns)			
Zone 1	Direct-fix (no cavity)	Class 2 or 3	Vapour-controlling wrap, to hold outdoor moisture out.
Zone 1	Cavity-fix (drained cavity)	Class 1, 2 or 3	Vapour barrier / controlling wrap.
Zone 3 — hot dry (Alice Springs)			
Zone 3	Direct-fix (no cavity)	Class 3 or 4	Medium-to-breathable wrap.
Zone 3	Cavity-fix (drained cavity)	Class 2, 3 or 4	Broad range acceptable.
Zones 4 & 5 (e.g. Sydney, Perth, Wagga)			
Zones 4, 5	Direct-fix (no cavity)	Class 4	Vapour-permeable (breathable) wrap — essential for outward drying.
Zones 4, 5	Cavity-fix (drained cavity)	Class 3 or 4	Breathable / medium wrap.
Zones 6, 7 & 8 — cool / cold / alpine (Melbourne, Canberra)			
Zones 6, 7, 8	Direct-fix (no cavity)	✗	Direct-fix not permitted — cladding must be cavity-fixed (battened out).
Zones 6, 7, 8	Cavity-fix (drained cavity)	Class 4	Vapour-permeable (breathable) wrap behind the cavity.

✗ = cladding must not be direct-fixed in these zones — it must be cavity-fixed (battened out to a drained & ventilated cavity). The AS 4200.1 class shown is the NCC’s own **Explanatory Table 10.8.1**, which restates the vapour-permeance ranges of Table 10.8.1 as AS 4200.1 classes (tested to ASTM E96 Procedure B). Based on NCC 2025 (ABCB Housing Provisions Table 10.8.1 / NCC Vol One F8D3) — always confirm against the current NCC for your project.

Climate zone 2 — no separate row. NCC Table 10.8.1 as published groups the zones exactly as above and does **not** list a separate value for zone 2 (warm humid — Brisbane, northern-NSW coast). For zone 2 projects, obtain project-specific advice or a condensation risk assessment, and confirm against the current NCC.

Outside this rule (NCC 10.8.1(5)): single-skin masonry, single-skin concrete, full-height insulated sandwich panels, walls not part of the envelope, and portions below ground — these need neither wrap nor cavity, in any zone.

The full rule — F8D3 point by point, the exemptions and the cavity detail — is unpacked in the companion guide **TG-02 — Condensation Management**.

SECTION 3 · AS 4200.2 CL. 3.2, CL. 3.7

3. Installation — orientation & laps

General (cl. 3.2)

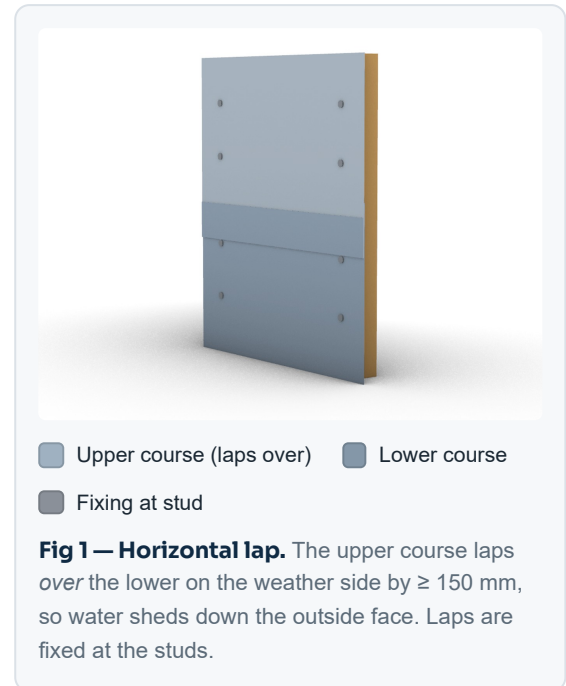
- Repair any **tears or punctures** to restore the membrane's integrity.
- Cut neatly for a close fit around obstacles and penetrations.
- Keep the membrane away from intense heat, sparks, flame and abrasive tools.
- Fit the **printed / anti-glare face out** — the reflective foil faces the cavity (per the product label).

Direction of lay (cl. 3.7)

Fix the membrane **in horizontal courses, working bottom-up**, so each upper course laps over the top of the one below on the weather face — like shingles. Water is shed **down and out**, never into a joint.

Laps

- Overlap joints **≥ 150 mm**; or
- **≥ 50 mm** where taped on the exterior face; or
- butt-jointed and taped where combined thickness > 5 mm would foul the cladding.
- All **end laps land on a stud** to form a continuous membrane.



Water control (cl. 3.7 / cl. 2.4). Where the membrane acts as sarking, upper sheets always lap over lower sheets so water sheds to the **outside** face, and the membrane is arranged to **drain to the building flashing** and out of the wall.

SECTION 3 · AS 4200.2 CL. 3.8, CL. 2.2–2.3

3.1 Fixing & sealing

CL. 3.8.1 · TIMBER FRAME

Mechanical fixings @ 150 mm centres

Fix to each timber stud with mechanical fixings (broad-headed) at **150 mm centres**, before cladding.

CL. 3.8.2 · STEEL FRAME

Adhesive, or fixings @ 300 mm

Adhesive where cladding is direct-fixed to the studs; or broad-headed-washer fixings at **300 mm centres** for cavity walls — before cladding.

Fasteners

Use **broad-headed fasteners or purpose-made washers**. Plain screws or nails without a broad head cut through the membrane — the head and edge tear it. Fix taut, but do not over-tension or over-drive.

Tape is not a fixing

Adhesive tape seals joints; it does **not** carry mechanical load. Support taped joints with fixings so wind load stresses the fixing, not the tape bond. Apply to dry, clean, smooth surfaces with firm pressure (applicator or squeegee).

Sealing — vapour & air barriers

Where the membrane is a **Class 1 or 2 vapour barrier** or an **air barrier**, seal **continuously** at all discontinuities, end laps, joints and penetrations — line joints up with studs so firm pressure can be applied. Seal by:

- pressure-sensitive, heat- and moisture-resistant tape;
- adhesive of equal/greater vapour resistance;
- mechanical fixing with adhesive sealant; or an adhesive bond.

Use only the membrane manufacturer's specified tape. AS 4200.2 requires sealing tape to be **pressure-sensitive and heat- and moisture-resistant** (cl. 3.2(d), cl. 4.4); manufacturers' instructions further require a **membrane-compatible** tape suited to the environment. A generic or unspecified tape may not bond to the membrane's surface, will fail over time, and voids the product warranty — the seal is only as good as the tape.

Reflective foil + wiring. Conductive membranes can energise on contact with live conductors — have a competent person assess the risk, de-energise circuits and keep clearances (AS 4200.2 cl. 1.5 & App A).

SECTION 4 · AS 4200.2 CL. 4.7

4. Openings — the cut & fold

Openings are the most common leak path. The membrane must **divert water away from the opening, never toward it**, and drain it to a flashing. At windows and doors, cut and dress the membrane into **all four sides of the reveal**.

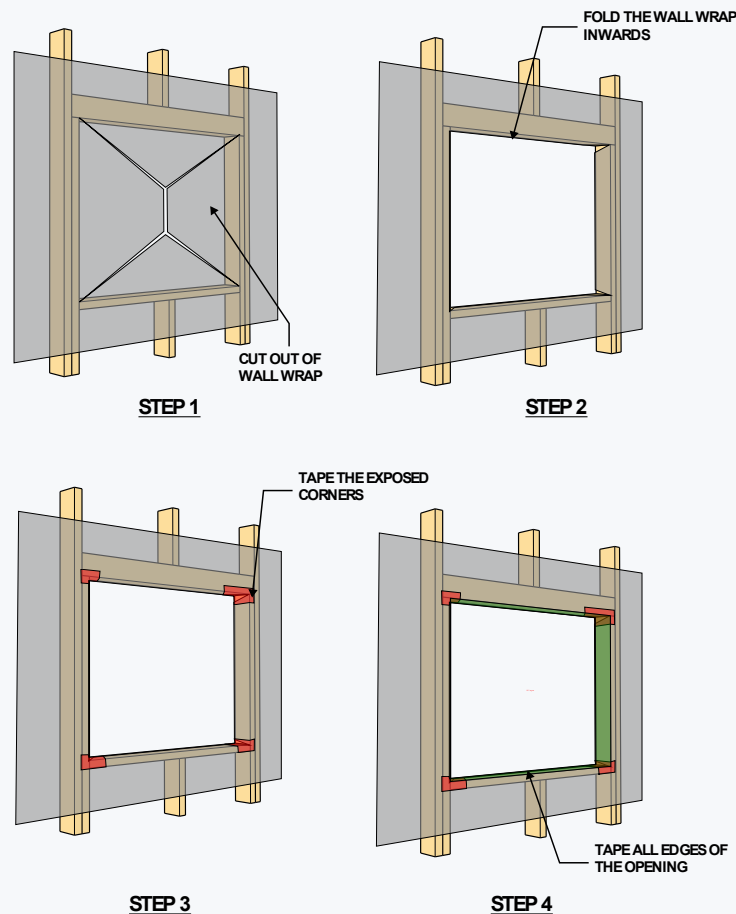


Fig 2 — Window sequence (after AS 4200.2 cl. 4.7). 1 Cut a diagonal cross over the opening. 2 Fold each flap inwards into the reveal. 3 Tape the exposed corners. 4 Tape all four edges of the opening.

Two approaches

WINDOW OUT

Sark into the frame

Membrane on before the window. Cut the panel + diagonals, fold the flaps into the reveal, fix and tape. Relies on others to seal the window to the frame.

WINDOW IN

Sark to the window / flashing

Window already fitted. Trim the membrane neatly to the frame or flashing and tape — sill, then both jambs, then head.

SECTION 5

5. On-site checklist

A concise on-site reference. Every point traces back to AS 4200.2 or the NCC.

Do

- ✓ Confirm the **vapour class** suits the climate zone (Section 2).
- ✓ Fit the **printed / anti-glare face out** (foil to the cavity).
- ✓ Work **bottom-up**; upper courses lap over lower.
- ✓ Lap **≥ 150 mm** (or ≥ 50 mm taped); end laps on a stud.
- ✓ Fix to timber at **150 crs** (steel: adhesive or 300 crs), broad-headed.
- ✓ Carry the membrane **around corners**; lap over base flashings.
- ✓ **Dress into reveals**; tape corners; lap over flashings; drain out.
- ✓ Use only the **manufacturer's specified tape**.
- ✓ Provide the **drained & ventilated cavity** (zones 6–8: always).
- ✓ **Repair tears** immediately; clad promptly.

Don't

- ✗ **Cut the membrane at the base** to fit a sub-sill/flashing.
- ✗ Reverse-lap, or run water **into** a joint or opening.
- ✗ Fit the wrap **reflective-face-out** — the foil must face the cavity, or it does nothing.
- ✗ Tuck the membrane **behind** a sill flashing.
- ✗ Leave window **corners untaped**.
- ✗ **Under-patch** a penetration — seal the membrane fully around it.
- ✗ Use **unspecified / incompatible tape**.
- ✗ **Over-drive** fasteners or use plain (non-washed) screws.
- ✗ Leave the membrane **exposed to UV** longer than necessary.
- ✗ Let **mortar** contaminate the (reflective) face.
- ✗ Obstruct or omit the **cavity drainage** openings.

Final check before cladding. Confirm that water reaching the frame at any point has a continuous, lapped, downward path to a flashing and out. If it does, the membrane performs its function.

SECTION 6 · FROM REAL SITES

6. Common Defects

Real failures we see on site — and the correct practice. Most sarking defects are workmanship at laps, corners, openings and penetrations, not product failures.



✗ Cutting the wrap at the base to install the sub-sill

The membrane is slit and folded back to fit the sub-sill, then daubed with sealant. Any water running down the wrap now passes **behind** it onto the bottom plate and frame.

✓ **Correct:** keep the membrane continuous and dress it **over** the sub-sill / base flashing, then tape the junction with the specified tape so water drains out over the flashing.

AS 4200.2 cl. 3.7, cl. 4.4



✗ Not taping the corners

The reveal flaps are folded in but the corners are left open, exposing the frame. Wind-driven water and air track straight through the unsealed corner into the wall.

✓ **Correct:** tape the exposed inside corners of every reveal (AS 4200.2 cl. 4.7) — head and jamb corners first, then a continuous piece along the sill and up each jamb.

AS 4200.2 cl. 4.7 · See Fig 2



✗ Leaving a gap at the sill

The membrane stops short of the sill and is not lapped over the flashing, leaving an open path at the most vulnerable point of the opening.

✓ **Correct:** dress the membrane into the sill reveal and lap it **over** the sill flashing so drainage is directed to the exterior; tape the corners.

AS 4200.2 cl. 4.7



✗ Reverse-lapping the sheets

An upper sheet is tucked **behind** the sheet below instead of over it. Water running down the wall reaches the horizontal joint and is led in behind the lower sheet — straight onto the frame.

✓ **Correct:** lap every upper sheet **over** the one below, shingle fashion — at least 150 mm, or 50 mm taped — so water is always shed to the outside face of the membrane.

AS 4200.2 cl. 4.4

SECTION 6 · CONTINUED

Common Defects



✗ Leaving tears and holes unrepaired

The membrane is torn or punctured and left open before cladding. Every tear is a direct path for water and air into the wall, and the membrane no longer acts as a continuous barrier.

✓ **Correct:** repair all tears and punctures before cladding — patch with a piece of the same membrane, lapped shingle fashion and sealed with the specified tape; replace badly damaged sheets.

AS 4200.2 cl. 3.2, cl. 4.4



✗ Membrane not dressed around a penetration

Loose scraps or a token strip of tape leave the cut edges of the membrane open around the service — a pipe, cable or duct. The membrane no longer sheds water past the penetration; it channels it in.

✓ **Correct:** cut a neat, close-fitting hole and **dress the membrane tight against the service**, sealing it continuously all the way around with the specified tape so water is shed past the opening. Where several services are close together, patch the whole area with one taped membrane piece rather than individual strips.

AS 4200.2 cl. 4.1, cl. 4.4

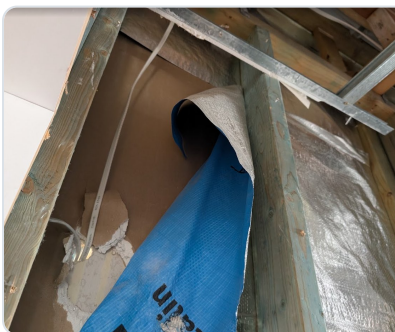


✗ Using tape not specified by the manufacturer

A generic or unspecified tape may not bond to the membrane's surface; the adhesive can fail, the seal opens, and the product warranty is voided.

✓ **Correct:** use only the **manufacturer's specified, membrane-compatible tape**, applied to a dry, clean, smooth surface with firm pressure (applicator or squeegee). Tape seals joints — it is not a substitute for fixings.

AS 4200.2 cl. 3.2(d), cl. 4.4 · use the manufacturer's specified tape



✗ Wrapping the inside of the frame

The wrap has been fixed to the **room side** of the studs, behind the internal (fire-rated) lining. There it does nothing — it cannot shed water that gets past the cladding, and it can trap moisture in the wall.

✓ **Correct:** the wrap always goes on the **outside face** of the frame, behind the cladding, so any water that gets in drains back out.

AS 4200.2 cl. 3.7, cl. 4.4

REFERENCES & DEFINITIONS

References, terms & disclaimer

Standards & codes

- **AS 4200.2:2017** (incl. Amdt 1, 2018) — Pliable building membranes, Pt 2: Installation (**primary**).
- **AS 4200.1:2017** — Pt 1: Materials.
- **NCC 2025 Volume One**, Part F8 & F8D3 — Condensation management.
- **ABCB Housing Provisions Standard 2025**, Part 10.8 & Table 10.8.1.
- **AS/NZS 4859.1** Thermal insulation materials.
- **AS 1530.2** Flammability of materials.
- **ASTM E96** Water-vapour transmission (Water Method).

Key terms

- **Pliable building membrane** — a material foldable on itself without damage affecting its properties (sarking / wall wrap).
- **Water control membrane** — a classified water barrier; collects and discharges water past the cladding.
- **Vapour control membrane** — restricts/permits vapour; classified 1–4.
- **Air control membrane** — restricts air transfer across the membrane.
- **Primary insulation layer** — the main thermal insulation of the wall.
- **"Sarking" / "wall wrap"** — AS 4200.2 strictly reserves "sarking" for a water-control membrane; this guide uses sarking, wall wrap and membrane interchangeably for the wall membrane.

Status

A **referenced document in Excelo facade specifications**.

Where a specification calls up "the Excelo Wall Sarking Installation Guide", it means this document, current edition.

Disclaimer

General technical information prepared by Excelo. It summarises, but does not replace, the referenced Standards and the National Construction Code, which prevail in the event of any inconsistency. Product-specific requirements and manufacturers' installation instructions must also be followed. Confirm the NCC edition adopted in the relevant State or Territory. Excelo accepts no liability for reliance on this guide in place of project-specific engineering advice. © 2026 Excelo. ACN 641 163 082.

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