Key Takeaway

Match your glass type to your climate. Standard dual-glazed is fine in dry areas. If you're in a humidity-prone region, it should be heated. Also always ask about body and frame condensation, not just the glass.

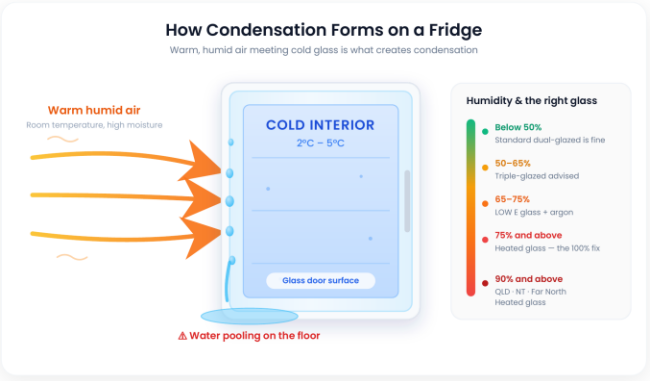
Any Queries — 1300 376 849

Condensation on Glass Door Fridges

Did you know that glass door fridges form condensation (water) on the outside of the glass in areas with high humidity? This not only looks bad, it can cause water to pool on hardwood floors — causing irreparable damage — or make tiled floors dangerously slippery.

Not many people realise this when buying. Glass door fridges were historically only used in commercial shops and stores. But with the renovation boom and alfresco areas becoming standard, glass door fridges are now common in homes — often installed in high-humidity outdoor areas where this is a serious problem.

Condensation forms when warm, moisture-laden air comes into contact with the cold glass surface of the fridge. Cold air can't hold as much moisture as warm air, so the moment that air touches the glass and cools, it's forced to give up its excess moisture — which turns to liquid right there on the surface, just like windows fogging up on a cold morning. The warmer and more humid the air outside the fridge, the faster this happens.



How condensation forms on a fridge, and how humidity level maps to the right glass type.

Dew Point — Why Condensation Really Happens

Condensation isn't really about humidity on its own — it's about the dew point. The dew point is the temperature at which the air can no longer hold its moisture, so water vapour turns back into liquid. Any surface colder than the surrounding air's dew point will collect condensation — the bigger the gap, the faster water forms.

A glass door fridge keeps its surface near fridge temperature (often 3–10°C), so in humid air it sits well below the dew point and sweats heavily. That's why glass doors are the usual culprit. But the same rule applies to any cold surface, which leads to a question we're often asked:

> **Yes — even a solid door can get condensation**
>
> A solid-door fridge is far less prone because its insulated outer skin normally sits close to room temperature, above the dew point, so it stays dry. But when the air is hot and very humid (dew point above ~25°C), the cooler door frame, gasket line or base of any unit can drop below the dew point and form water. Good dense foam insulation and routing the warm condenser pipes through the frame are what keep solid doors dry — see Body & Door Frame Condensation below.

Room conditions	Air's dew point	What it means for your fridge
25°C · 50% humidity	≈ 14°C	Only a cold glass door sweats; a solid door's outer skin (near room temp) stays dry.
25°C · 70% humidity	≈ 19°C	Glass sweats; solid-door frames and trims are usually still safe.
30°C · 60% humidity	≈ 21°C	Glass pours water; keep an eye on cold metal trims and the base.
30°C · 80% humidity	≈ 26°C	Even a solid door's chilled frame, gasket line or base can dip below 26°C and sweat.
35°C · 80% humidity	≈ 31°C	Extreme: almost any cool surface — glass or solid — will condensate.

Glass Type Comparison

Not all glass door fridges are equal. Here's how different glass technologies compare on condensation performance.

Glass Type	Condensation Starts At	Pours Water At	Energy Impact	Best For
Standard Dual Glazed 2 panes, normal glass	~50–55% humidity	65–70%+	Baseline	Dry climates only
Triple Glazed 3 panes — front pane stays warmer	~60–65% humidity	75%+	Minor decrease	Moderate humidity areas
LOW E Glass Special coating reflects heat rays 70% better	~70–75% humidity	80%+	Minor decrease	High humidity / alfresco
Argon Gas Fill Add-on to any of the above	+5% improvement on base glass	+5% on base glass	None	Good add-on upgrade
Heated Glass Electrically heated film at low voltage	Does not condensate	N/A — 100% prevention	≈ Doubles energy use	QLD / NT / Tropical areas

Argon gas tip

Argon gas fill is often already included in fridges without being advertised. It works by placing an insulating gas layer between the two panes, keeping the front glass warmer. Combined with LOW E glass, it adds roughly another 5% humidity tolerance — worth asking about.

Understanding the Details

Body & Door Frame Condensation

Condensation doesn't only form on the glass — cheap units sweat on the frame and body too.

This is very common in cheaper units and often surprises buyers. The door frame and stainless steel body can condensate just as badly as the glass — sometimes worse.

The cause is usually poor insulation foaming inside the body. If the foaming process is rushed or done carelessly (common in many factories), cold from the interior transfers to the outer walls and door frame, causing water to form on the outside surfaces.

Quality manufacturers combat this by:

- Proper dense foam injection throughout the body walls
- Routing the hot condenser pipes through the inner walls — this keeps the frame warm enough to prevent condensation
- Higher-quality door gaskets that reduce cold transfer at the seal
- A heating element built into the front body section (our SK units, for example, run this along the front of the cabinet body — most models include a switch so it can be turned on only when needed)

> ⚠ **Watch out for this when buying**
>
> A cheap fridge might have the best glass but still pour water from the door frame. Always ask specifically about body and frame condensation performance — not just the glass.

High Humidity Regions of Australia

If you're in a tropical or coastal area, condensation is near-certain with standard glass.

In areas like Far North Queensland, Darwin, the Gold Coast, Broome, and generally the coastal areas north of Sydney, outdoor humidity regularly sits at 80–90%+ for months at a time. (Inland NSW and QLD are much drier — it's the coast and the tropical north where this bites.) Standard dual-glazed fridges in these locations will pour water — it's not a defect, it's a physics problem.

For these climates you need to understand which glass is right before you buy:

70–80% regular humidity: Should be heated glass. LOW E + Argon is the bare minimum, but humidity spikes above the average are common in these areas.

80–90%+ regular humidity: Heated glass required. Humidity in these areas regularly spikes well above the average, and LOW E + Argon will still sweat during those spikes.

Alfresco in tropical areas: Heated glass is essentially the only 100% reliable solution.

> **Indoor vs outdoor placement matters**
> Even in tropical areas, an air-conditioned indoor space (where humidity is controlled at 50–60%) may be fine with triple-glazed glass. It's the alfresco and garage placements that require the better glass types.

How LOW E Glass Actually Works

LOW E (low emission) glass has a permanent transparent coating that reflects long-wave heat radiation.

LOW E glass (low emissivity) has been specially designed to provide increased thermal insulation. It's high-quality clear glass with a permanently bonded see-through coating that does the work.

The coating reflects long-wave infrared energy (heat radiation from the sun, lighting, etc). This keeps radiant heat energy out of the cabinet and simultaneously increases the temperature of the outer glass pane — making it less likely to condensate in humid conditions.

U-value comparison (rate of heat loss):

- Standard glass doors: U value of 2.6 W/m²K
- LOW E glass doors: U value of 1.6 W/m²K

U values express the rate of heat loss — lower is better. Going from 2.6 to 1.6 cuts heat loss through the glass itself by about 38%: (2.6 - 1.6) ÷ 2.6 ≈ 0.38.

Around 70% of all energy loss on a glass door cooler escapes through the glass, so that improvement works out to roughly a 27% drop in the unit's total energy loss: 70% × 38% ≈ 27%.

> **Think of it like a car on a hot day**

A car with regular windows heats up rapidly. Tinted or thermally-coated windows keep it cooler. LOW E glass does the same thing in reverse — it keeps the cold in and reduces the surface temperature differential that causes condensation.

Heated Glass — The Only 100% Solution

Heated glass uses a low-voltage film to keep the glass surface warm — fully eliminating condensation.

Heated glass is the only technology that completely eliminates condensation regardless of humidity level. It works by embedding a thin electrically-conductive film in the glass that heats the surface at low voltage, preventing the glass from ever reaching the dew point.

The trade-off is energy:

- The heater film draws roughly 50–150 Watts continuously depending on the fridge, on top of its normal running.
- That typically doubles — and can triple — the unit's total energy use compared with the same fridge without heated glass.

Worth it for the right situation

For alfresco fridges in tropical Queensland or Darwin, where you'd be dealing with constant water pooling on floors for 6+ months of the year, the extra energy cost of heated glass is a worthwhile trade-off. For a dry-climate indoor installation, it's not necessary.

Quick Decision Guide: What Glass Do I Need?

Indoor, air-conditioned space (any location)

Humidity controlled at 50–60%. Triple-glazed is plenty; standard dual-glazed is fine at the dry end. LOW E is a bonus but not essential.

Covered alfresco, southern Australia (Melbourne, Adelaide, Perth)

Humidity usually below 65%. Triple-glazed recommended. LOW E glass ideal for summer periods.

Coastal & NT — NSW/SE QLD humidity up to the tropical north (Brisbane, Gold Coast, Far North QLD, Darwin)

Regular humidity from 70% up to 90%+. Should be heated glass — humidity in these areas regularly spikes above the average, and even LOW E + Argon will sweat during those spikes. Essential across the tropical north (Far North QLD, Darwin, NT), where standard, triple and even LOW E glass all pour water.
