

The Envelope Doesn't Only Work in Summer. It Protects You All Year Round.

The same action that repels heat in summer retains heat in winter.

Our coatings are naturally associated with heatwaves. But the same envelope that reflects summer heat retains winter heat — and acts on a lever that insulation alone ignores: air tightness.

By Joël Kohli, Founder & Director



A home protected across both seasons: the envelope reflects solar radiation in summer and retains indoor heat in winter. One action, two benefits across the whole year.

For months, in these columns, we have talked about heat, heatwaves, overheating. That is logical: the summer of 2026 was the hottest ever measured in Switzerland, and 2027 looks set to be worse still. But it would be simplistic to believe that treating the envelope serves only four months a year.

The truth is more interesting: **the same intervention that repels heat in summer retains it in winter.** A well-treated envelope works both ways, all year round. And as the heating season approaches, it is the right moment to look at the other half of the equation.

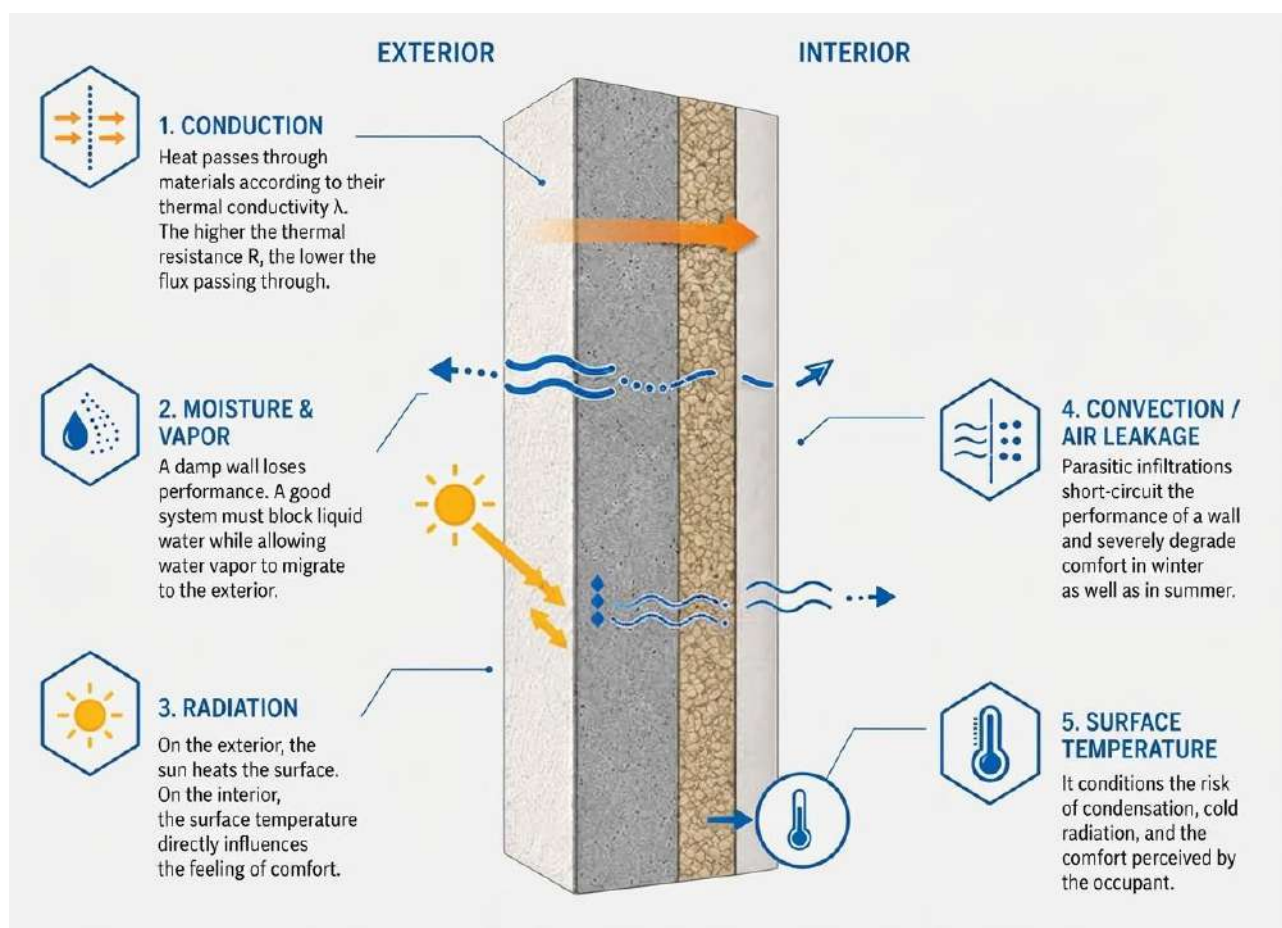
In Winter, Heat Escapes for More Than Just Lack of Insulation

Winter performance is too often reduced to a single question: the thickness of the insulation. That is a misleading shortcut. A wall can be properly insulated and still lose part of its efficiency, for two reasons that insulation alone does not address.

Air leaks. Warm air escapes through the porosity and micro-discontinuities of walls — cracks, junctions, service penetrations. These parasitic infiltrations create air movements (convection) that short-circuit the insulation and sharply degrade comfort, in winter as in summer. A figure from the French national assessment (ADEME) shows this clearly: in an old, uninsulated house, **walls and air-renewal leaks alone account for nearly 58% of the heat losses**. Insulation handles the former; almost nothing handles the latter.

Cold walls. An interior surface that is too cold creates a sensation of discomfort even when the air itself is at the right temperature — this is cold radiation. One then turns up the heating to offset a discomfort that comes not from the air, but from the walls. **And the bill climbs.**

It is precisely on these two levers — air tightness and the surface temperature of walls — that functional coatings act, complementing the insulation.



Conduction, convection, radiation, humidity: a wall's performance rests on more than its insulation. Air leaks and cold walls weigh heavily — and insulation alone does not address them. (Image : KOKUN Swiss SA)

Two Families of Solutions, According to the Need

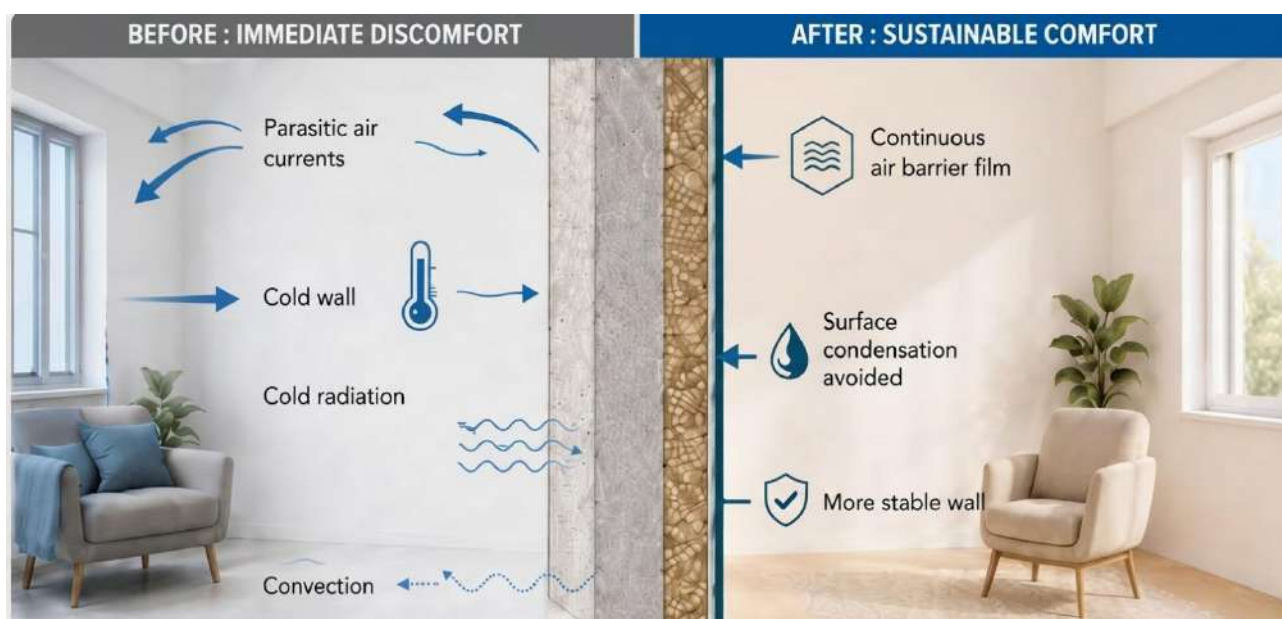
Faced with these winter losses, there is no single answer, but rather **several complementary technologies**. Our role is to identify, according to the building, the one that will deliver the best result.

Thermal regulation of walls. Some interior formulations are enriched with **silica aerogels** — a material made up of about 95% air — or with **ceramic flakes**. Applied to interior walls, they create a barrier that

limits heat loss and warms the wall's surface temperature. In concrete terms: walls that feel less cold to the touch, the disappearance of cold-radiation sensations, the end of damp and mould stains linked to cold spots — and a comfort gain that often allows one to heat less for an equal feeling. A valuable advantage: indoors, these solutions work whatever the shade chosen, because it is the aerogels, not the colour, that do the work.

Air tightness. Other coatings form, once applied, a **continuous layer** that sharply reduces the wall's air permeability. By blocking parasitic infiltrations, they retain heating energy better, even out comfort, and eliminate the draughts and cold-wall sensations linked to tightness defects.

On the best-performing systems, remarkable levels of tightness are reached (in the order of **0.03 to 0.05 m³/m²·h at 50 Pa depending on the formulation**). These solutions **do not however replace the building's insulation**: they complement it, acting on parameters that insulation alone does not cover. This is exactly the value of a prior assessment — determining, on your walls and for your use, which of these technologies will make the real difference.



Indoors, a treated wall becomes less cold to the touch: an end to cold radiation, draughts and damp stains. Greater comfort at an often lower heating temperature. (Image : KOKUN Swiss SA)

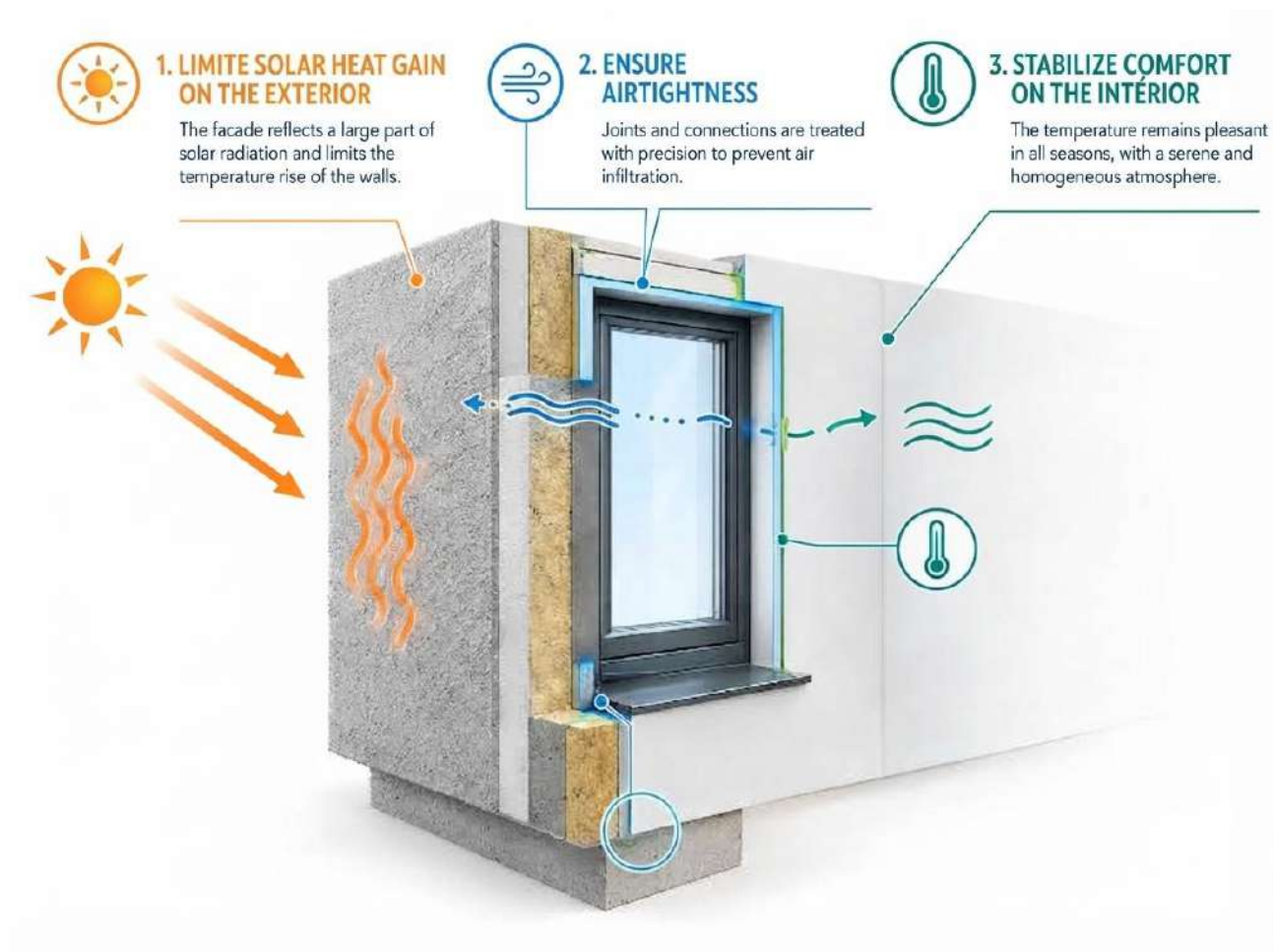
A Coherent Envelope, from Outside to Inside

It is by bringing these levers together that an envelope becomes truly high-performing, across both seasons.

Outdoors, on roofs and façades, the thermo-reflective coating reflects up to 91% of solar radiation in summer — and, on exposed façades, limits surface heating all year round.

Indoors, formulations enriched with aerogels or ceramic, and the air-tightness treatment, retain the heat produced in winter and stabilise comfort.

Between the two, a common logic: to act on the real physical phenomena — radiation, conduction, convection, humidity — rather than on a promise. A damp wall loses performance; a wall that is airtight and whose surface temperature is controlled gains in comfort and efficiency. The envelope ceases to be a mere passive barrier and becomes an **active regulator**, summer and winter alike.



A high-performing envelope brings together three levels: limiting solar heating on the outside, ensuring air tightness, and stabilising comfort on the inside. A coherent response, summer and winter alike.

What the Double Season Changes for You

For an owner, a property-management firm or a manager, thinking of the envelope across both seasons transforms the calculation:

- **An investment paid back over twelve months**, not four — the same works serve summer and winter.
- **An energy bill lightened both ways**: less air conditioning in summer, less heating in winter.
- **A better perceived comfort all year round** — neither summer overheating nor cold winter walls.
- **A healthier, more durable wall**, freed from the damp and condensation problems that degrade it.
- **Measurable gains** under the international IPMVP protocol.

One Envelope, Two Seasons

We have grown used to calling our coatings “thermo-reflective,” thinking of summer. That is one half of the truth. The other half is that a well-treated envelope also retains the heat one pays so dearly to produce in winter, removes cold walls and draughts, and makes walls healthier.

As the heating season approaches, and as next year's budgets are being planned, it is the right moment to stop seeing the envelope as a seasonal protection. A single action, considered and measured, protects your building **summer and winter alike — and makes you win on both counts.**

Sources: KOKUN Swiss SA · RENOVCOAT · Technical documentation of thermo-reflective and functional coatings (SRI, air tightness q50 / EN 12114, silica-aerogel and ceramic-flake formulations) · ADEME — “Everything about insulation,” DPE Observatory 2025 (breakdown of heat losses for a typical house) · Building physics: conduction (λ , R, U), convection, radiation, vapour diffusion (Sd)

Does your envelope work for you all year round? Let's take stock before winter — a thermal assessment, protection across both seasons.

 **Request a THERM'Reflectis assessment**

Cool, Reduce, Reflect — naturally.

Our 4-step approach:

Assessment — thermal and structural → **Planning** — tailored → **Application** — certified → **Monitoring** of gains

Was your building designed to meet this new challenge?

Your potential is unique. Whether it is an industrial site, an eco-district project, urban heritage or a service building, **THERM'Reflectis** has the expertise to reveal it fully.

Do not let this potential lie dormant.
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Every degree gained makes a difference.
Every project contributes to a more sustainable future.

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*“Revealing the hidden potential of every surface to build the sustainable Switzerland of tomorrow.
Your project, our mission.”*