



RETROFIT DOUBLE GLAZING FOR WOODEN WINDOWS

YOUR COMPLETE GUIDE

THE THERMAWOOD DIFFERENCE

ULTIMATE GUIDE TO RETROFIT DOUBLE GLAZING

Where double glazing and secondary glazing fall short, retrofit double glazing is the answer. You don't have to replace your timber windows with aluminium or PVC. You don't have to settle for secondary glazing because it's the only affordable option. Retrofit double glazing does the job, and it does it for a fraction of the cost.

At Thermawood we use a patented dry glazing system that lifts the performance of your windows and doors while reducing moisture buildup. That's why your existing timber windows will outlast any other timber window solution on the market.

Then there's the look. Keep your existing timber windows and you keep the original character of your home.

The benefits stack up: better insulation, better acoustics, better security, less glare and less moisture. Good for your home, and better for the environment too.

You might be wondering: is that really possible?

It is, when a skilled team of Thermawood installers does the work.

Curious why so many property owners across New Zealand are turning to retrofit double glazing for their timber windows?

This guide answers the lot.

The more you understand the process and what it gives you, the easier it is to make the right call for your windows.



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01

THE DIFFERENCE BETWEEN

**DOUBLE GLAZING, RETROFIT
DOUBLE GLAZING AND
SECONDARY GLAZING**

GETTING MORE FROM YOUR WINDOWS

A Comparison of Double Glazing, Retrofit Double Glazing, and Secondary Glazing

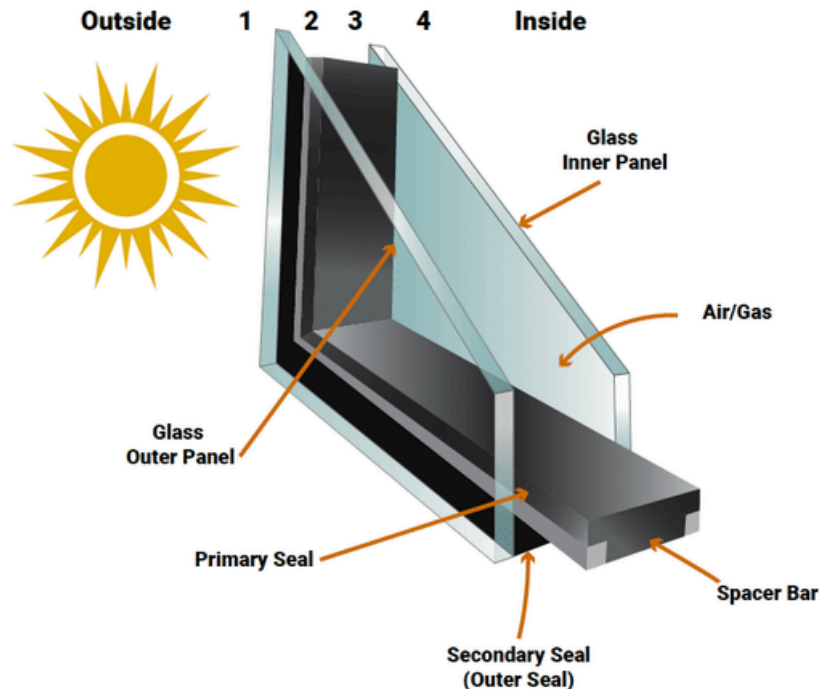


There are a few ways to improve your windows, and each has its strengths. They all aim at the same things: better energy efficiency, less noise, less glare, and a home better protected against the weather, break-ins and accidents.

Where the three solutions differ is in quality, how long they last, and how much of the problem they actually fix.

They also differ in flexibility. With Thermawood retrofit double glazing you can choose specialised glass or standard glass, whatever suits the room.

WHAT IS DOUBLE GLAZING?



Double glazing is a big step up in how your windows perform.

Here's how it works: two glass panels are utilised, creating an insulated glass unit, or IGU. These panels are separated by a small space, typically 6mm to 18mm, which can be filled with an insulating gas like argon.

The two panes and the gap between them do the work, lifting the window's insulating power. Less heat escapes in winter, and far less unwanted heat gets in over summer.

Consider this: an average home experiences 21% to 31% of heat loss through a standard single-pane glass window. Double glazing with increased thermal resistance means you'll need less energy to maintain your home's comfort, leading to lower energy bills.

That extra insulation helps with sound too, dulling the noise from outside. If you live in town, the quiet alone is reason enough.

Safety and security improve as well. Two panes are a lot harder to get through than one, and you can add security glass on top of that.

For enhanced energy efficiency, you can pair double glazing with Low E glass, which not only reduces glare but also shields your indoor furnishings from UV damage.

With power prices going the way they are, double glazing is a practical call. You save money, and you use less energy doing it.

It does have a catch, and the catch is cost. It's the dearer way to make your windows more efficient, and the price moves with how many windows you're replacing and what glass you pick.

Even so, it earns its keep. It outperforms the alternatives by enough to justify the spend.

Double glazing beats secondary glazing on every count, but retrofit double glazing is the pick of the three. You get the same benefits as a new double-glazed window system, better insulation, less noise, more safety and less glare, without the two big drawbacks of new double-glazed timber windows: the cost, and the risk of moisture buildup.



Most people who go for new double glazed windows never hear about the design problem that stops water evaporating quickly. An insulated glass unit (IGU) must incorporate proper drainage within the system. Without it, water vapour gradually clouds the space between the two glass panels, creating an environment ripe for mould growth. Extended exposure to water or saturated vapour within the glazing channel is the primary culprit behind seal failures in IGUs, resulting in potentially costly repairs.

Another common concern with new double glazed windows is the necessity of removing the entire frame of your existing window. This process can inadvertently harm the cladding, internal lining, and other structural components of your home. That's why it's crucial to have a highly skilled team handle your double glazed window installation to ensure that your window solution doesn't inadvertently cause more harm than good.

Retrofit double glazing gets you the same result as new double glazing, without the moisture problems or the damage to your home.



WHAT IS RETROFIT DOUBLE GLAZING?

What Retrofit Double Glazing Gives You

Retrofitting is the sensible move if you want to improve the windows you already have. With retrofit double glazing, your single glazed glass is upgraded to double glazed Insulated Glass Units (IGUs), all while retaining your current window frame.

You get all the benefits of double glazing, because you're getting proper high-quality IGUs. Whether you're a city dweller or rely on indoor climate control, this transformation significantly improves the comfort and quality of your living and working spaces.

It goes past comfort, too. Retrofitting improves security and protects your furnishings from UV damage, at a fraction of the cost of new double glazing. It's a less invasive process that doesn't entail a complex, lengthy window replacement.





If you own or invest in property, you want the work to last and keep working. Plus, your windows retain their original character, making retrofit double glazing an ideal choice for heritage buildings.

Unlike some retrofit services, Thermawood's system also keeps moisture out of your IGUs. Our patented dry double glazing system drains properly, so your windows and doors hold up in the harshest conditions. Tailored for existing timber windows, it allows water and vapour to escape, reducing the risk of double glazing failure.

The only limitation is that retrofitting is compatible only with current wooden windows. Beware of companies marketing their services as retrofit double glazing when they are offering secondary glazing.

The difference matters. Secondary glazing falls well short of what retrofit double glazing gives you. Know the difference and make an informed choice for your window conversions.

WHAT IS SECONDARY GLAZING?

Where Secondary Glazing Falls Short



Secondary glazing, while offering some benefits, falls short of the insulation advantages provided by double glazing due to the absence of two critical components:

1. **No Argon Gas:** Secondary glazing doesn't allow the use of argon gas to enhance insulation.
2. **No High-Performance Glass:** High-performance glass options like Low E glass are incompatible with secondary glazing.

In secondary glazing, an acrylic sheet is affixed to the interior of your existing window, typically using magnets. It does improve energy efficiency and sound a little, but it's nowhere near what double glazing or retrofit double glazing does.

Moreover, secondary glazing cannot incorporate specialised glass panels, such as laminated Safety Glass, which compromises the enhanced safety features of double glazing.

An additional concern is the challenge posed by sash windows. Secondary glazing can make it difficult to re-weight double-hung sashes, as the acrylic adds weight. To address this issue, a full panel is often installed over the entire window. This means you must remove the panel every time you wish to open the window, which makes airing the room a nuisance, and not what you had in mind when you spent the money.

Lastly, an important limitation shared with traditional double glazing is the potential for moisture accumulation. The nature of secondary glazing can lead to condensation forming in the gap between the existing glass and the secondary glazing. This poses a significant problem for wooden frames, as condensation can drip down and damage the wood over time. It's crucial to be aware of these limitations when considering secondary glazing for your windows.



02

HOW DOES RETROFIT

DOUBLE GLAZING WORK

UPGRADE YOUR EXISTING TIMBER WINDOWS WITH THERMAWOOD RETROFIT DOUBLE GLAZING



You get the benefits of double glazing without paying for new windows. The Thermawood retrofit double glazing system fits into your existing timber joinery, so every wooden window and door in the house can be done.

The process is straightforward. We replace your single pane and make a small adjustment to the existing frame. To secure the insulated glass unit (IGU) and maintain a draught- and acoustic-proof seal, a unique adapter, crafted from 100% recycled materials, is installed.

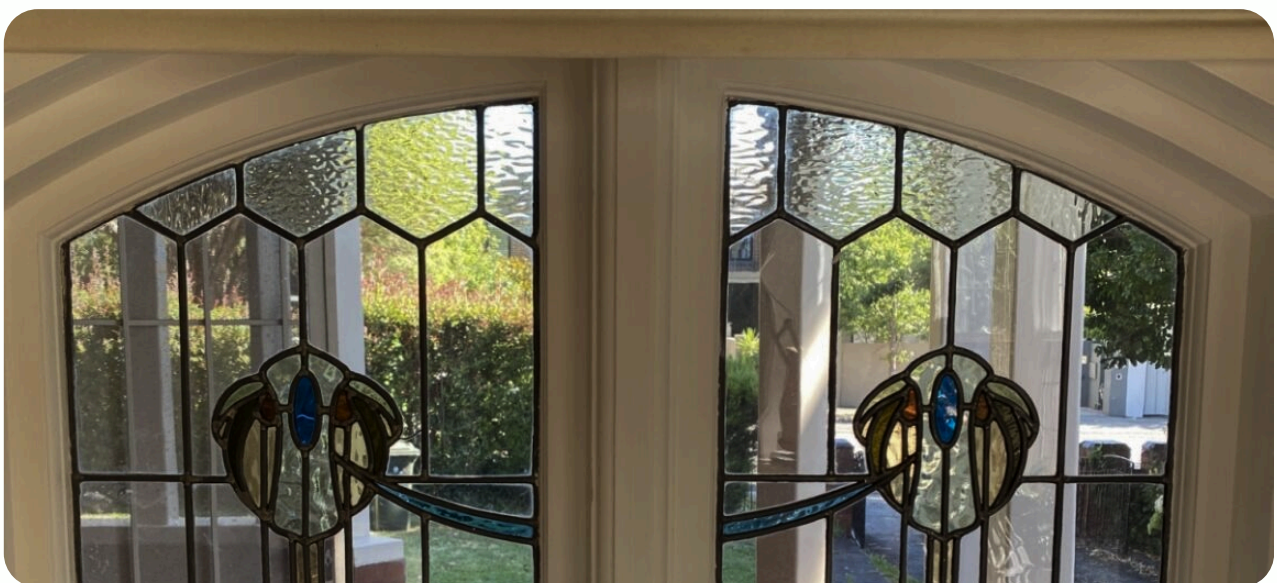
Last, we fit the window beading, designed to let moisture out. This patented dry retrofit design sets Thermawood apart, ensuring condensation-related issues are kept at bay.

Timber windows have real advantages built in. Wood, at the cellular level, naturally serves as a thermal insulator, thanks to the air pockets within the timber. These micro air pockets also help dampen acoustic vibrations, enhancing your indoor environment.

Conventional double-glazed windows can develop moisture problems within a few years. Our dry system doesn't. Moreover, secondary glazing can be problematic with timber windows as it may lead to water accumulation at the base of the window, directly affecting the wooden frame.

Retrofit double glazing keeps your existing timber joinery and cuts the moisture and mould risk, and timber insulates better than aluminium to start with.

By replacing your current glass panel, converting the existing frame, and installing sealing and double glazing, you'll create a more comfortable home, improve indoor air quality, and simultaneously lift your property's value, all without the long installation times and higher costs associated with new double glazing.



03

HOW EFFECTIVE

**IS RETROFIT DOUBLE
GLAZING?**

HOW EFFECTIVE IS RETROFIT DOUBLE GLAZING?

Thermawood retrofit double glazing can improve your home's insulation by up to 73% and cut noise by as much as 70%, and it helps stop your soft furnishings fading.

We want the result to feel effortless. If you've still got curtains moving in the breeze because a draught is getting through, you're not getting the thermal performance you paid for. So we fit draught and acoustic seals on every window. And unlike companies that stick the seals onto the window, we machine ours into the window, so they don't peel off when you open it.

For noise, retrofit double glazing gets excellent results. We take the decibel level of your street noise and work out the glass type and thickness needed to give you the quiet you're after. We also have special options like our SoundStop glass, made from laminated sheets layered with acoustic resin.

GOOD	  SOLUTION: IGU IGUs that comply with AS 2407 are Good because they comply with the Building Code requirements.
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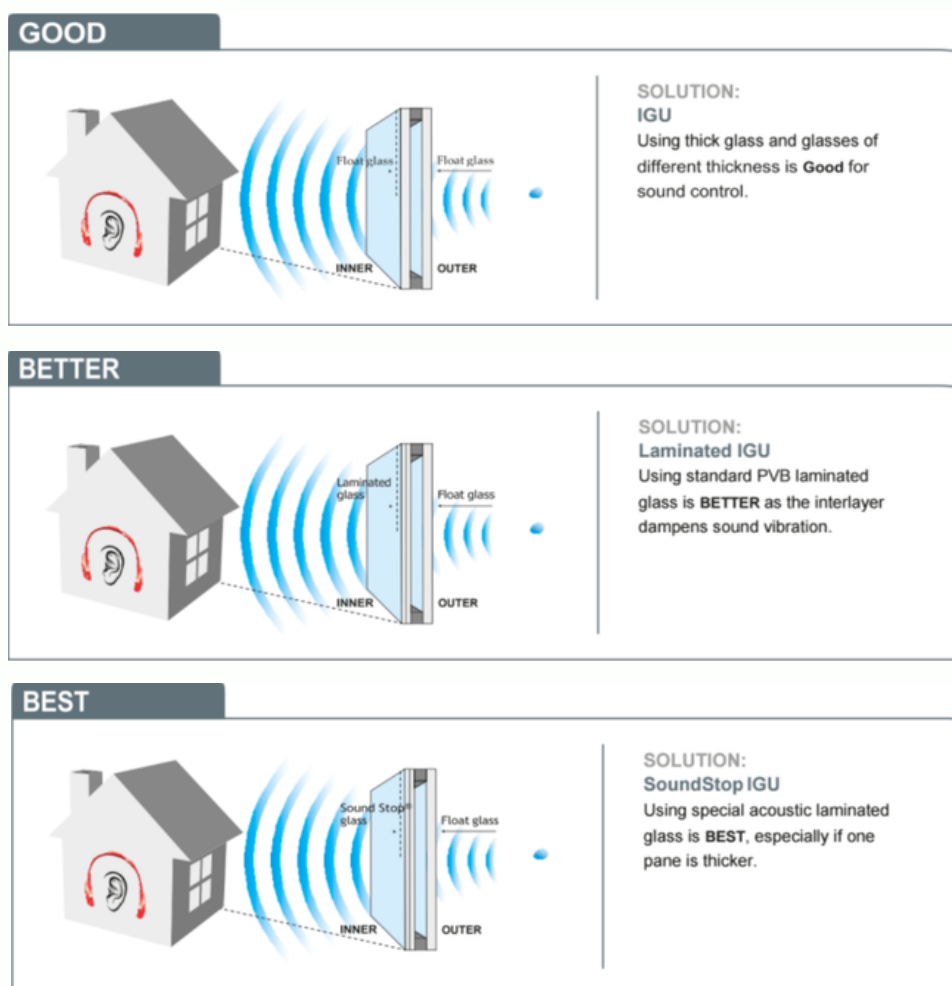
Safety glass

If safety is a concern, you can choose from different types of safety glass.

Laminated safety glass is two or more sheets of glass permanently bonded with a PVB or resin interlayer. If it's hit, the interlayer holds the broken pieces together, keeping the glass intact and resisting penetration. It gives you three things:

- It's a Grade A safety glass.
- The PVB or resin interlayer dampens sound well, so it cuts noise coming through the double glazing.
- It absorbs 99% of UV light, which helps reduce fading to your furnishings.

Toughened safety glass is also Grade A. It's standard float glass that's been processed and tempered. It looks like normal glass, but the tempering makes it about five times stronger. If it does break, it shatters into small pieces, which greatly reduces the risk of injury.



04

WHAT IS THE BEST RETROFIT

SOLUTION AVAILABLE TODAY?

If you've got timber windows, whatever their size or shape, there's no better option than Thermawood retrofit double glazing. You get all the benefits of double glazing, plus the moisture reduction from our patented dry retrofit system, plus machined-in sealing for even better thermal and acoustic performance. Your windows will work better, and last years longer than the alternatives.

Best of all, you skip the ordeal of replacing your windows. You keep the original charm and character of your existing windows. They just look better and work flawlessly.



05

INSTALLATION PROCESS

**FOR RETROFIT DOUBLE
GLAZING**

The way retrofit double glazing is installed is very different from double glazing or secondary glazing. It's not a tweak to either one, it's a separate process.

With new double glazed windows, the whole window structure has to be ripped out. That can damage the wall cladding and other material around the frame, and it takes time, so a window often can't be finished in a day. You may have to cover the opening at night until it's done.

With retrofit, we always finish every window we start that day. You never have to worry about your home being left with unsecured windows. Two Thermawood installers can fit between six and eight panels a day. How long the whole job takes comes down to how many windows and doors you have.

Like secondary glazing, your existing timber frame stays in place. But that's where the similarity ends. We remove your old single pane and fit new double glazing, along with the components that hold the glass, seal against draughts, improve the acoustics, and let water drain and evaporate properly.

And unlike both secondary glazing and new double glazing, retrofit always gives you beautiful windows, because you keep your original frame and its character. That lifts your home's kerb appeal and the overall look.

New aluminium or PVC windows can end up clashing with the style of your home. Secondary glazing adds more material over your existing glass, which can look cluttered. Retrofit double glazing keeps everything clean and tidy.

06

WHY RETROFIT DOUBLE GLAZING IS THE BEST OPTION

Double glazing is one of the best ways to make your home more energy efficient and more valuable. It lowers your energy bills, and it turns your home into the calm, comfortable place it should be.

Retrofit double glazing gives you all the insulation, acoustic, air-quality and security benefits, without spending what you would on new double glazed windows. It also protects your investment. Thermawood's dry glazing system is the only one that allows maximum drainage, which makes it the best defence against condensation problems like wood rot, mould and poor indoor air quality.

As long as your existing windows are timber, not aluminium, PVC or something else, you get the full package: better looks, sustainable performance and genuine value. Thermawood retrofit double glazing is making high-performance windows easier to get for more New Zealanders, and thousands of property owners around the country are already feeling the difference.



07

RETROFIT DOUBLE GLAZING

**AND EXISTING SASH
WINDOWS**



Sash windows are common in older Georgian and Victorian homes. Double-hung sash windows have long been popular in warmer areas too, because they let air move through and make the most of those cool spring and summer breezes. There are different types, but in general a sash weight is used to balance the weight of the glass.

That design can cause trouble for other window upgrades, especially secondary glazing. Retrofit double glazing, though, can be done on sash windows. Our patented system was designed with sash windows in mind, so the character of the home is kept, and we re-weight the sash when we retrofit the window. That means you can still open your sash easily, without having to take out an extra panel every time you want some fresh air.

08

RETROFIT DOUBLE GLAZING

WITH HERITAGE BUILDINGS

Our whole system is built around sustainability and longevity, which makes it well suited to villas, bungalows, Edwardian cottages and character homes.

From making sure our beads sit at the same angle and in the same place as the existing heritage window, to keeping every bit of the original character, we're good at bringing old windows up to modern standard. The aim is to make the work blend in, so you'd never know a home built a century ago now has high-performance windows, acoustic and draught seals, and a full draining system that keeps rot at bay and helps the original frame last another hundred years.

Where a property needs it, we're happy to work in with councils and heritage architects.



09

EXAMPLES USING

THERMAWOOD'S PATENTED PROCESS

Take a look at Thermawood retrofit double glazing in practice.



Before



After



Before (Inside)



After (Inside)



Before (Outside)



After (Outside)

Thermawood retrofit double glazing is about as close to flawless as it gets. All the benefits of an IGU, the flexibility to upgrade any timber window you have, and a solution built to last.

We even refurbish leadlights and set them inside the retrofit double glazing so it all looks like one piece.

Thermawood doesn't just make better windows. Everything we do, from our own tooling and process to a tidy, unobtrusive install, is about showing how much your windows can really do for you.

READY TO EXPERIENCE THE THERMAWOOD DIFFERENCE?

Get in touch and we'll talk you through what retrofit double glazing would do for your home.

bit.ly/GetThermawood-NZ

