



The Ultimate Guide to Draught Sealing Windows and Doors

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Let's face it. The draughts around your windows and doors are a problem.

That cold air and damp seep in, you're losing all your precious heat, and you know you're throwing away money as 10%, 15% or more of your heating is escaping through the gaps, cracks, and small openings around your doors and windows.

You can spend another season wearing your jacket in the house and shelling out for high energy bills. Or, you can take care of your draughts once and for all – and then enjoy every winter from here on out in a comfortable, cosy, draught-free home.

It's your choice. But, to make the most well-informed choice possible for your comfort and your wallet, you should know how effective – and how easy – draught sealing can be. You should also know where you can get draught sealing all wrong, leaving you with some unexpected surprises, and in some cases, costly repairs.

Find out what you should know about draught sealing windows and doors so you can say goodbye to draughts for good.

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WHEN AND WHERE DRAUGHT SEALS ARE NECESSARY



Put your hand up around the bottom or sides of your door.

What do you feel? Try it around your windows too.

That chill – it's running up your energy bills unnecessarily.

Now, think about every window and door in your home and compound the amount of cold air flooding into your home, 24/7. Yep, you guessed it. Having cracks and small openings all around your home, cumulatively, is the equivalent of leaving a window open all the time. That's why you have to keep turning up the heat and why you can't live without your fuzzy slippers all winter, even though you're spending an arm and a leg to heat your home.

So, where are these draughts coming from?

Well, depending on the size, condition, and materials used to build your home, the cold air could be entering your home in dozens, even hundreds of different places – most of which are too small to see without looking closely. A lot of these small openings exist around your windows and doors.

It's not that there is something wrong with your home. It's just what happens over time. With your windows, one of the problems is that the building itself is going to settle over the years. So, if you have an old Victorian home or even a Mid-Century, that gradual movement is going to cause your window frames to twist slightly. This is particularly a problem with casement windows, which end up with a bigger gap around the edge of your windows which opens out – which is called the leading edge of your window.

You're also going to have small cracks in the frame as a result of time, the elements, deterioration. And, spaces around the sill, the hinges, the components of your windows that allow it to move and function properly.

With your doors, draughts find their way into your home around the sides, the top, and underneath your door. As with your windows, as the building shifts over time and timber or other materials age, crack, and weaken, you end up with increasingly more problems.

This isn't something you have to just live with. By taking a proactive approach to your home's insulation by draught-proofing your windows and doors, you can live in a more comfortable home and cut down on your energy usage – which is good for the planet and will save you money.



HOW DRAUGHT PROOFING WORKS

Draught proofing, which refers to any method that helps to seal and reduce draughts, seals the majority of...

- the gaps,
- cracks,
- and open spaces,

Stopping unwanted cold air from coming in and your heat from going out.

You can't ever make your home 100% draught proof.

And you wouldn't want to.

You want some level of ventilation. Also, with airtight seals around your windows and doors, you may have trouble opening them again.



But, with a meticulous approach, addressing the specific needs of each window and door, you can optimise your draught proofing, minimise the insulation problems due to draughts, and cross one of life's most frustrating problems off your list of things you need to take care of to make your home more effective.

People use solutions like...

- rubber draught seals,
- foam,
- timber,
- and even concrete for draught proofing.

You can even draught-proof your home yourself, although DIY jobs tend to be a temporary fix. You also want to avoid some common mistakes that can create problems with your windows and doors.

Professional draught proofing is usually the way to go for long-lasting results.

But, you want to be careful about what work you have done on your windows and doors, so you don't end up overspending and not getting the results you want.



COMMON WINDOW AND DOOR DRAUGHT PROOFING MISTAKES TO AVOID

Here's the thing...

You can draught proof some areas of your home without professional help.

If you choose to go this route, keep these mistakes and issues in mind, so you don't ruin your windows and doors in the process.

For windows, what a lot of people do for DIY draught proofing is they attach foam around the windows.

It's pretty easy to do. The foam attaches with self-adhesive tape.

There are a couple of major problems with this though...



One, you can seal around the hinges well, but with casement windows, there's usually a bigger gap around the leading edge we talked about earlier – where the windows open outwards. What homeowners do, is they'll put a thicker foam here to seal the wider gap.

So, you have an extremely tight seal around the hinges and a looser one around the leading edge. Which means, of course, you're still getting a draught from the opening around the leading edge.

The hinges are sealed, but when you leave this adhesive tape on the hinges for the season, the seal gets stuck to the sashes or the frame. To open your window to let in the fresh spring air, you have to pull really hard.

This usually ends in disaster because the material tears. Especially if you have timber windows, you end up damaging the sash or frame and then have to pay to have it fixed.

And, the other big problem – you can't actually open your windows with the DIY draught seal in place. This is the case for both double hung and casement windows. The window is basically sealed shut. You can't open it for ventilation because the first time you do, your draught seal falls off.

Unfortunately, this seemingly quick fix ends up not being a very good solution.



For doors, a lot of buildings use concrete front door sills.

In theory, concrete seems like a great solution. It's durable, long-lasting, and strong enough to block the cold air from coming in.

But, concrete has a fatal flaw that you won't realise until you've already had the work done to have the seal put in. Concrete settles and moves over time.

A lot of times, it's also cracked in places. Rarely do you end up with a straight, even, crack-free concrete seal around a door.

Then what happens is there's a dip in the middle of the door. *When you put a straight seal over a surface with a dip in the middle, what happens?*

The seal only works on the ends.

The area that is bowed out isn't properly sealed. So, all that work and the draughts still get in.

Some people use other types of draught seals for doors.

Brush seals can be installed around the doors, although a brush seal doesn't work as well as a rubber seal.

Unless you have a really tight space where the brush seal can be compressed down to almost nothing – such as in the middle rail of a double hung window – they don't work that well.

With brush seals or other weather-stripping materials around the door like aluminium or even rubber, you'll also get the aesthetic downgrade because there's a different material around the edge of your door.

These can also be expensive, especially when you have them professionally installed as a stand-alone job, and then you're stuck with an unsightly sealing attached to the door.





WHY DIY DRAUGHT PROOFING ISN'T A LONG-TERM SOLUTION

With DIY draught proofing, the real elephant in the room is longevity.

When you attach something to the edges of your doors and windows, unless you have it machined in, it's going to fall off. The foam sealing almost always falls off after the first time you open the window.

This can be very frustrating as you spend all this time and effort, and still have to pay for the materials, only to realise you've lost your functionality.

What people end up doing is putting up their draught seal in the winter and then removing it in the summer so they can get the ventilation.

Doing this isn't only cumbersome, it doesn't really make practical sense.

Especially when draught proofing your windows and doors is only one element of the overall problem.

There is however a way where...

- You won't see the seals,
- You won't damage your windows or doors,
- Nor will you cause your windows to stick shut
- Or have to sacrifice being able to actually open the windows.

And the best part is, when done as part of a complete window system, you can take care of not only draughts but also thermal insulation and soundproofing. It's a total package, making each part of the process cost a lot less because it's all done properly once.

And, you get to cross a bunch of things of your to-do list for your home's performance (and for your sanity). See the next page for how it works.



DRAUGHT PROOFING IS ONLY ONE SMALL PART OF THE PUZZLE – THERE'S MORE TO INSULATING AND SOUNDPROOFING YOUR HOME

Draught proofing takes care of one part of the process of insulating your home. It covers the cold air that comes in through the small cracks and gaps.

But, even if you have a full draught proofing service on every window and door in your home, you're still going to face some insulation issues. That's because the cold air isn't just coming through the small spaces.

The bigger problem is the heat loss through your window glass. And then in the summer, the unwanted heat gain.

Glass, which is a natural energy conductor, absorbs thermal energy and then radiates the heat to get rid of the energy. This is an ongoing process. So, you heat your home. Some of that heat is absorbed by the glass, which then radiates the heat energy outside. This can account for as much as 40% of your thermal heat loss.

In the summer, thermal UV rays hit your glass. The glass absorbs it. It radiates inside. That's why you get overheating problems even if you have window dressings up to stop the sunlight. Window dressings stop light, not heat.

And then, when you are addressing insulation, you don't just have unwanted thermal energy moving where you don't want it to go. You also have sound waves – vibrations from heavy trucks, trams, and planes, the sound of traffic, lawn mowers, noisy neighbours – coming in. This noise pollution is more than a nuisance. It robs you of your calm and can have a negative impact on your health, inhibiting sleep, increasing blood pressure, and over time, leading to impaired hearing.

Draught seals address a fraction of your total insulation problem. But if you only fix this one part of the puzzle, you're still left with 80% of the problem.

That's why at Thermawood, we have taken a different approach to draught sealing windows and doors. We don't just come out and draught proof a house. You can find people to do this, and they can do an excellent job, but because they have to...

- remove the windows and doors,
- take them apart,
- and put on the seals,

It can end up being really expensive for the results you get.

What we do is to include draught sealing within our patented dry Retrofit Double Glazing System, which insulates and soundproofs the entire window or door.



We double glaze the windows, removing the single pane of glass and replacing it with an insulated glass unit, or IGU.

This IGU is customised for each area of your home, giving you the features you need to optimise your insulation and soundproofing needs, and not throwing in what you don't need (if you can't tell, we are obsessed with efficiency).

This saves you money and allows you to have a quiet, comfortable, dryer home.

But here's the best part for your draught problem. When we retrofit the windows, **we machine in draught seals, directly into the window or door.**

There's no one-size-fits-all solution as every window and door is different.

- Some have a lot of movement in the building, leading to wider spaces.
- Some have shifted frames or sashes. Some have curved areas or gaps.

What we do is to assess the window or door. When we are retrofitting to double glaze, we already have the sashes out or the door off. We'll then machine in the seals.

With casement windows, for example...

- The process involves using special tooling to correctly angle the frames and sashes, making sure everything is level. This eliminates any gaps or problem areas.
- Then the seals are glued and pinned into the window, so they become a part of the frame.
- Once the windows are repainted, you would never know the draught seal is there. It becomes a part of the existing windows.

And, your window will open and close, without sticking and without the draught seals falling off.

This isn't a short-term solution. This is a century-long solution or more. That's the level of quality we put into our work.

For double hung windows the process is similar...

• We machine in the draught seals, but we use a type of seal that will work for the sliding mechanism of double hung windows so you'll still get that smooth movement with the sashes.

For doors...

- We use the same high-quality rubber draught seal as we do for the windows, which also helps to boost acoustic performance.
- The rubber is machined into the wood, so you don't even notice that it's there.
- We square up the door, using tooling to make the door the same shape as the sill.

This creates a complete seal that goes all the way across.



Part of the reason our draught seals are so effective is we use a special tooling. We actually designed the tooling ourselves, so the draught seals are machined into the timber.

After all, what's the point of going through all this effort if you are still left with a gap or if your windows or doors are going to eventually become damaged because of the work done?

Why go a quarter of the way with seals, and leave the problems with thermal insulation and noise pollution?

We also believe your windows and doors should look the same, or better.

You shouldn't have to choose between aesthetics and performance.

Not with the modern advancements in window and door technology that exist today. Not with what we can do with our patented process.

Retrofitting wooden windows and doors, which we specialise in at Thermawood, can be fully insulated and still retain their original character. A lot of people don't touch their timber windows, especially if they are heritage, assuming there's nothing suitable that can be done.

That's just not the case.

At Thermawood, we specifically designed our dry Retrofit Double Glazing system to address the unique needs of timber windows and doors.

- We can retrofit double glazing into your existing timber windows.
- We machine in the draught seals, so they become part of the window.
- Your finished windows and doors will look the same.
- They'll work like they did when your house was first built.

And, they will offer all the benefits of high-performance windows and doors.

Our process just leaves out the heavy price tag of a full window replacement and separate draught proofing work, because we roll everything into one, practical, powerful process.



