



PENJEREX CUSTOMER FAQ

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What is Penjerex?

Penjerex window insulating film is developed and manufactured in Japan by Nitto Denko corporation which is a global leader in technologically advanced films and tapes.

Penjerex is a high clarity thermal insulating window film alternative to retrofit double glazing. It can provide better than 95% of the effectiveness of conventional retrofit (4/A6/4) double glazing for around half the cost.

It reduces internal heat loss by 44% in cold months and also reduces excessive solar heat in hot summer months by up to 27% which provides an ideal combination formulated for the New Zealand climate.

Additional features include 99% UV radiation reduction and vastly improved safety against shattering glass panes.

Technically, Penjerex is a new technology 'low emissivity' window film that provides the same benefit as new low-e glass but can be applied directly to existing window panes.

How Does Penjerex increase the thermal Insulation of my Windows

The new technology low emissivity (low e) characteristics of Penjerex reduce heat loss by reflecting internal infrared radiation (heating energy) back into the room, reducing internal heat loss by 44% when compared to standard 4mm clear glass panes.

In hot weather it reflects heat energy from the sun by approximately 40% while also reducing the UV radiation by 99%.

The film construction incorporates an invisible metal foil to reflect more of the interior room heat back into the room where it is needed. This improves comfort by reducing potential draft feelings near the window and saves on energy costs, especially in commercial buildings. Penjerex is also protected with an abrasion resistant coating for long-term durability and maintained appearance.

How does Penjerex compare to other brands?

Penjerex has the leading ISO tested performance data for internal heat loss reduction, visual clarity and has an ideal balance of reducing external solar energy for NZ conditions in residential and commercial buildings.

There are very few low emissivity window films available and this new technology shouldn't be mistaken for older style 'solar cut' window films. Penjerex is a new type of performance insulating window film technology.



Why do customers have Penjerex window insulation applied to their buildings?

Quite often, customers purchase Penjerex window insulation film for home and tenant comfort and justify the purchase with heating and cooling energy cost savings. Customer benefits include;

- Improved home comfort
- Lower heating and cooling operating costs
- Lower utility demand costs for commercial buildings
- Compliance assistance with building standards such as NABERS and Greenstar
- Improved aesthetics, uniform appearance
- Improved safety and security
- Extended HVAC and heatpump equipment life
- Sustainable alternative to adding more A/C equipment
- Environmental care

How is Penjerex installed

Penjerex is installed to the inside surface of a glass window which doesn't require any external scaffolding and isn't dependent on having a sunny day to complete the installation.

This is the basic process:

1. Clean the inside surface of the window and frame edges with a very fine scraper surface (Penjerex is always applied on the inside)
2. Spray the Penjerex and the window with the soap/water mixture for mounting the film
3. Apply and trim the film to match the shape of the window pane.
4. Remove excess water solution with a Squeegee and apply edge sealant to qualify for maximum term warranty.
5. Installer tidies window frames and all surfaces.

Windows of an average size house can be installed in less than a day.

Is Penjerex removable?

We don't have any expectation that you would ever want to remove Penjerex from your windows but if the case arises then yes, it can be removed. It is applied to a glass surface with a pressure sensitive adhesive that cures over the course of about a month. Even when the adhesive is cured the film can be removed with a razor fine scraper causing no damage to window surfaces.

Does Penjerex offer a warranty?

Yes. The Penjerex replacement product warranty is for 10 years. Nitto Denko underwrites the warranty which includes removal and replacement of film that, in an unlikely event, should experience; adhesive failure, bubbling, crazing, cracking, delamination, excessive and unusual dis-colouration, peeling or other manufacturer's defect.



How can I view a sample?

The best way to view a sample is contact a Thermafilm Agent and arrange a demonstration of Penjerex ability to reduce heat loss and excessive solar heat gain in your home or commercial building.

Our agents are trained to explain important features and properties of the film with a heat lamp demonstration kit.

Can Penjerex be used in commercial buildings

Yes certainly. Commercial building HVAC units consume around half of the electricity used in an office building with approximately 50/50 split between heating and cooling energy depending on the building design.

The [NABERS](#) programme is now being promoted in New Zealand to improve commercial building energy efficiency and Thermafilm is a cost effective product to assist commercial buildings lower space heating and cooling energy while improving occupant comfort with virtually no impact on daylighting.

Can I install the film on double pane windows?

Yes. Penjerex can be safely installed on double pane (thermal insulated) windows further improving their insulating and adding UV and solar heat reduction properties that double glazed don't necessarily have.

Our Agents offer guidance to suggest if Penjerex is appropriate in certain circumstances and any particular risks may be relevant. The manufacturer warranty of some double glazing units may be void when Thermafilm is applied.

Will Penjerex cause double pane seal failure?

No, Penjerex doesn't cause double glaze window seal failure. When Penjerex is applied to the inside pane of an insulated glass unit, there will be some absorption of the sun's energy, which will increase the temperature of the glass pane. Some of this heat will transmit to the airspace, slightly raising the airspace temperature.

However, even a 20 °C degree increase (unusual for circumstances) will result in a less than 3% change in air pressure. Properly made windows are designed and tested to withstand over 20% changes in air pressure.



Will Penjerex stop condensation on my Windows?

Penjerex isn't marketed or sold with any expectation to reduce condensation on window surfaces. If you do have a condensation problem in your home then there are other products and solutions available that can assist to lower the impact of this.

When Penjerex is applied to a window surface it does reduce the size of condensation droplets creating the appearance of a fine mist instead of the normal large droplets running down the window.

Tests have resulted in 5 times less condensation volume forming on Penjerex windows when compared with standard single pane glass. Reducing the volume of condensation reduces mold and damage to wooden window frames.

Please read the Thermafilm Condensation customer guide available on our website for more information.

When should I not have Penjerex installed

We recommend all homes have good ceiling and floor installation installed as this will reduce heat loss and assist to reduce moisture problems that cause condensation.

When looking to 'close the thermal envelope' the next logical step is to insulate windows as these can contribute 25% to 48% of heat loss according to BRANZ estimates.

There are several options with retrofit window insulation but we believe Penjerex is the most cost effective and easy to install product available.

Does Penjerex block out sound like double glazing?

Penjerex doesn't reduce external sounds by any noticeable amount. If reducing outside noise is a concern for you we recommend looking for other products that address this problem.

Is Penjerex scratch resistant?

Penjerex is manufactured with a superior hard coat surface which is scratch resistant to normal wear and tear. Our product care information gives you all the advice to keep your insulating film in great condition. It also informs you of what not to do with your Penjerex windows.

What is the typical pay back of Penjerex?

The return on investment period depends on local climate and type of heating and cooling devices a building uses.

In New Zealand, the payback period is estimated to be around 6 years in the South Island increasing to 7 – 8 years in the upper north island depending in air conditioning energy use.

Even though we all know payback time is important, we strive to create energy efficient living and work environments that are comfortable all year round as this is what we want for all New Zealanders.



How do I clean the Penjerex surface after installation:

Neutral detergent solutions may be used to clean Penjerex film, along with a soft cotton rag or microfiber cloth. Avoid any abrasive cleansers or towels. We suggest using the same water & baby shampoo mixture that you used to install the film (one teaspoon of baby shampoo to a litre of water).

Do not use any cleaners containing chlorine, acids or ammonia as these may damage the Penjerex film.

Will Penjerex stop my furnishings from fading?

Penjerex does an excellent job of dramatically reducing fading of furnishing, art and wall and floor covering.

Major causes of fading are a combination of ultraviolet (UV) light, visible light, and solar heat. To prolong the life and preserve the appearance of your furnishings all of these factors are reduced by application of Penjerex on your windows.

Will Penjerex distort my view when I look out the window?

Penjerex PX-8080S has the highest visual light transmission rating of any low emissivity or solar cut window films and is virtually indistinguishable from a clear window pane.

It is ideal for character homes as it does not impact on the aesthetic of windows and frames and has minimal visual change when viewed from the outside of your home or a commercial building. This allows Penjerex to be applied to specific 'problem' window areas or individual building floors without impacting the exterior look.

At night, you may notice a purple-ish tinge to white coloured objects reflected in the windows. This is due to the way light and Infra-Red heat is reflected by the insulating film. The appearance is minor and you can ask your Thermafilm Agent to install test window or 2 to check this for yourself at night. You'll also notice that there is less interior reflection allowing you to view your night time view with less reflection than standard glass.

Will Penjerex keep my glass from breaking?

No, Penjerex is designed to hold broken pieces of glass together in the window opening after a break. This reduces the chance of injury from flying shards of glass, makes it more difficult to break in through a window, as well as increases safety and security in the event of a windstorm.

I often see purple bubbling window film on cars. Will Penjerex do this?

Penjerex is a new technology high clarity window film that doesn't use the dyes associated with the older style car and office buildings which change colour and can create an unsightly rainbow effect.

Penjerex is virtually clear and comes with a replacement warranty for 10 years.



I've seen DIY window film. Can I install window film myself?

Penjerex installers are certified to Nitto Denko standards for quality purposes. It takes a substantial amount of experience to be proficient in applying Penjerex so we only allow our trained agents to install for their customers.

Will Penjerex effect indoor plant growth?

Plant growth and development requirements vary with different plants and depend upon light, temperature range, climate exposure, humidity, CO2 levels, etc.

For sufficient growth, the wavelength of 400-700 nm (visible light) range is important for photosynthesis (greening process) while the 700-850 nm (visible light) range is required for the photomorphogenic process (flowering process). While Penjerex does marginally reduce the intensity of visible light wavelengths, it is designed to reduce the UV and Infrared wavelengths primarily which can assist plant growth.

If you have any concern please contact a local horticulturist or local gardening shop.

Will Penjerex have any impact on Mobile Phone or Wifi strength?

Penjerex may reduce communication transmission signal strength slightly and may be noticeable if your signal strength is already weak.

Please discuss this with your Penjerex if you have a concern regarding at your premises.

Can Penjerex cause glass to break?

Penjerex insulation window film will increase the temperature of your sunlit glass, which can then increase the stress on the glass edges. The quality of the glass edge and several other factors (external shading, interior shading, glass history, size and shape of glass, indoor/outdoor temperature) all contribute to the risk of glass breakage.

Your Thermafilm agent will assess any risk and advise you during the quotation stage.