

# THERMALAM

LAMINATED SAFETY GLASS  
THERMASEAL SMART GLASS SOLUTIONS



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Previously the New Zealand market only had two options in laminated glass:

- ◆ Cast in Place (CIP) for custom-made units using a UV-cured resin.
- ◆ Polyvinyl Vinyl Butyral (PVB), ready-made laminated glass made up of annealed panes bonded together with the PVB interlayer ready to be cut to the required size.

Both processes have limitations such as inconsistent product, thermal breakage, vastly lower adhesion to glass and premature delamination, especially in exterior or wet applications.

Thermaseal's new custom Laminated Safety Glass product, Thermalam® EVA utilises Ethylene Vinyl Acetate offering a whole new world of new possibilities.

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## Applications

Offering you the ability to create your own custom Laminated Safety Glass units, Thermalam EVA can be made up using numerous glass types and include decorative, or functional inserts.

The typical applications offered include:

- ◆ Balustrades
- ◆ Pool fences
- ◆ Glass floors and stair treads
- ◆ Cyclone resistant glazing
- ◆ Shopfittings and display cases
- ◆ Façade glass (curtain wall)
- ◆ Security (prisons, shops, banks)
- ◆ Automotive/marine windows
- ◆ Rooflights, skylights and canopies
- ◆ Shopfronts
- ◆ Internal partitions
- ◆ Frameless doors
- ◆ Wall cladding

## Thermalam EVA Features

- ◆ Laminated Safety Glass (LSG) compliant to AS/NZS 2208
- ◆ Compliant with NZS 4223 and the NZ Building Code
- ◆ Glass fragments retained when broken
- ◆ Reduced risk of injury or damage from falling glass fragments (Balustrading/canopies etc)
- ◆ Negates need for interlinked handrails (when utilising Fall-Guard insert)
- ◆ Greatly reduced risk of edge de-lamination (compared to PVB)
- ◆ No unsightly clear edge tape required (used in CIP method)
- ◆ Limitless decorative inserts available (Thermalam PET)
- ◆ Compatible with ThermaPrint ceramic digital printing process
- ◆ Excellent UV filtration (fading reduction)
- ◆ Comparable Sound Transmission Reduction (acoustics)
- ◆ Annealed, Toughened, Heat-soaked and Heat Strengthened options
- ◆ Custom Low E laminates available



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## Thermalam EVA Laminated Safety Glass with EVA interlayer

Ethylene Vinyl Acetate (EVA) is an interlayer developed internationally for laminating glass with other substrates, not just glass.

EVA is also ideal for bonding special substrates, referred to as inserts, such as mesh, PET film (printed), stone etc. Other plastics, like Polycarbonate, can be combined to offer greater impact resistance for cyclone-prone regions, bullet-resistant applications. It can also hold balustrades or canopies in place even if both plies of glass have failed, continuing to provide protection from falls.

Electronic inserts like LED displays, lighting, photovoltaic (PV) switchable privacy (electrochromic) are also popular overseas. Photovoltaic glass is especially attractive to architects as it not only can be viewed through, but also contributes energy to the building that hosts it. Stone veneers laminated to glass give the illusion of decadence, but at a fraction of the cost/weight.

EVA's biggest advantage is its versatility. Almost any combination of glass and inserts can be assembled to provide functions including decorative, UV reduction, privacy, security, flooring and sound reduction.

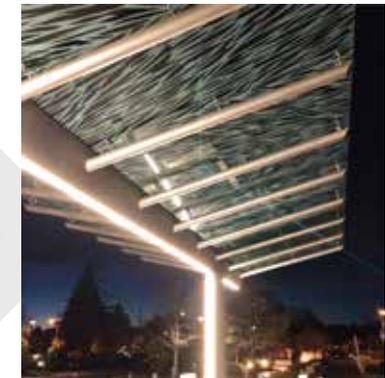
EVA is Hydrophobic, so the risk of delamination, especially in wet and exterior areas is greatly reduced. This allows us to confidently offer it in frameless applications too.



Ceramic Digitally-Printed Anti-Slip Laminated flooring



LED lighting insert



Ceramic Printed Laminated Canopy



Toughened, clear laminated glass



Electrochromic "Switchable" Glass



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## Thermalam EVA Decorative Laminated Safety Glass with EVA interlayer and print

Ethylene Vinyl Acetate (EVA) is the ideal interlayer for mating with decorative effects.

There are two main techniques offered with two very different looks depending on your requirements.

**Thermaprint:** Ceramic Digital Printing gives an extremely robust, UV stable finish that casts a shadow, allowing you to create extra visual effects and control light transmission to your interior space, for example. Ask our friendly sales staff for a separate brochure.

**Thermalam PET:** Highest quality PET film is printed using a proprietary and classified process. The full colour gamut gives you the ability to not only have translucent, rich colour images, but block colours too. Unlike Thermaprint, Thermalam PET allows the light through, and casts the colour with it.



Thermaprint in Thermalam Canopy



Thermaprint in Thermalam Canopy



Thermaprint in Thermalam Door with frosted interlayer



Thermalam PET block colours



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## Thermalam EVA Fall-Guard Laminated Safety Glass with EVA interlayer and structural insert

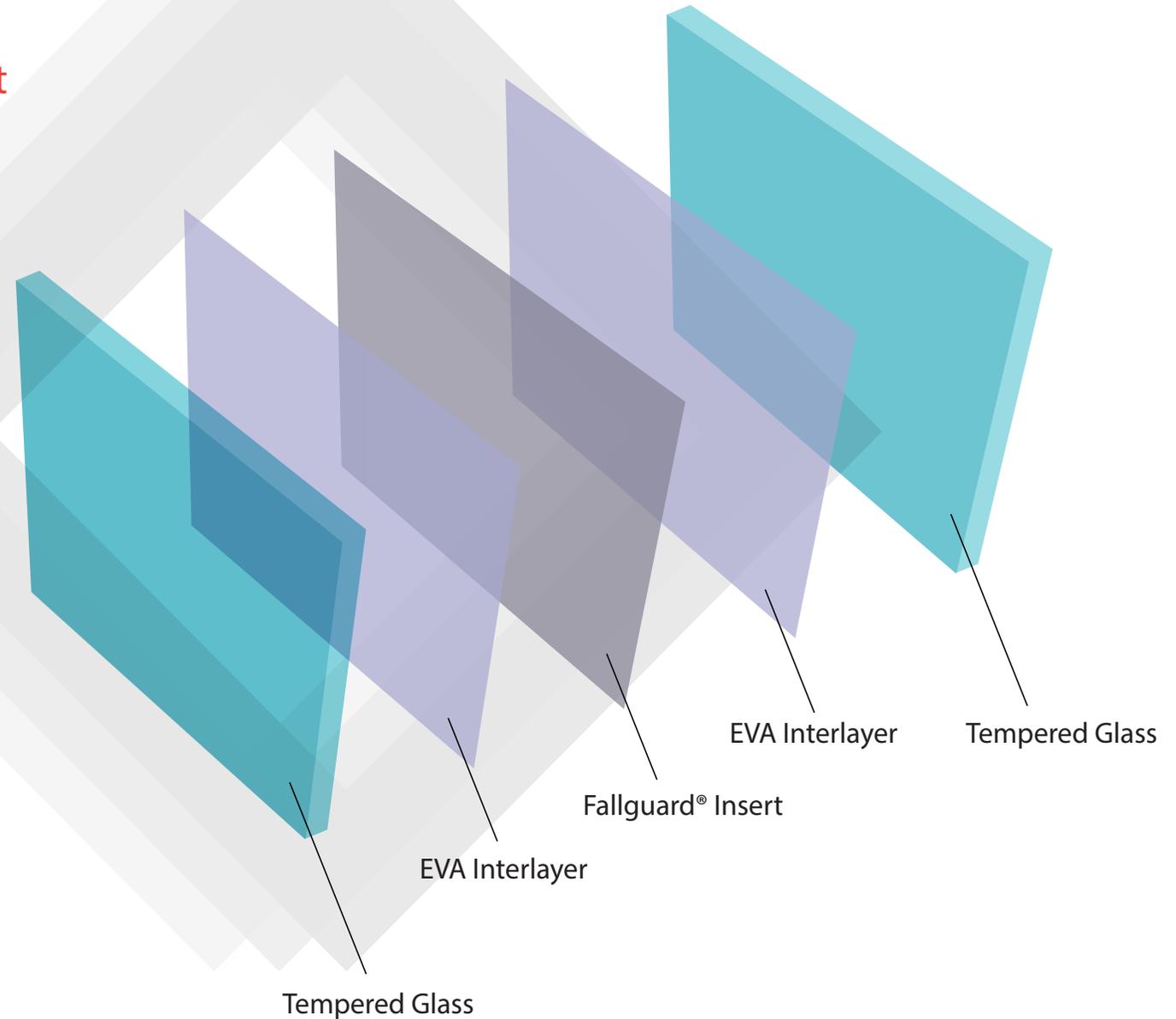
With changes to the New Zealand building code frameless glass balustrades preventing a fall of one metre or more must meet strict criteria.

Thermalam Fall-Guard is a product comprising heat-strengthened or toughened glass plies bonded with a special insert in the core of the laminate.

In the event of BOTH plies of glass failing, this German-engineered insert retains structural integrity and continues to perform it's function, resisting loads of over 25kg, exceeding that required by the New Zealand Building Code.



Balustrade with, and without Fall-Guard



# Technical Specifications

## CREATING ARTWORK FOR THERMALAM DECORATIVE



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### PHOTOGRAPHIC FILES (RASTER)\*

Resolution: All raster files should be supplied at 300 dpi resolution at output size. If this is not possible our Image Processor can assess your images, make small amendments, give advice and feedback.

Orientation: For target glass that is portrait in orientation, portrait artwork is preferred! However, our image processor can crop from landscape artwork and provide a preview.

Colour Mode: Images in RGB colour mode work best for the in-glass Ceramic Digital Printing process.

### VECTOR GRAPHICS (OBJECTS)\*

Vector graphics can require extensive work to set up prior to printing.

Objects should be united, strokes removed where not needed and like-colours grouped and named clearly in the layers applet. Duplicate objects and other noise should be removed if not needed. For large projects, spanning multiple panes, we can work from 1:100 scale files.

### COLOUR ACCURACY

It's important you're familiar with the two different looks Thermalam Decorative offers when comparing Thermalam PET and Thermaprint.

Thermalam PET uses a traditional combination of four Spot colours known as CMYK to cover the full range of colours giving a TRANSPARENT finish that carries the colour with light.

Thermaprint uses six proprietary colours with a narrow Red range significantly limiting the ability to achieve vibrant Reds, light Pinks and rich Purples. As a ceramic ink the printed finish actually casts a SHADOW, not colour like the PET alternative.

For a minimal charge we can create a swatch for you using the target glass so you know exactly what you're going to get before we commit to your project. Accepted codes are Dulux, Resene, Pantone, RGB, CMYK, RAL and LAB.

We have several swatches to refer to onsite in our showroom. Please make an appointment with our sales team to view these.

\*Unsuitable artwork submitted can create delays and incur additional charges.

TIFF, JPEG or PSD Format

300 dpi Resolution

RGB Colour Space

All layers unlocked

EPS, AI, PDF, or DXF Format

RGB Colour Space

All layers unlocked, no hidden.

Text converted to outlines or font(s) supplied

## Thermalam EVA Production limits

LSG Type	Max Size by thickness		
	Thickness 8mm nominal	Thickness 10mm nominal	Thickness 12mm nominal
Thermalam EVA	1250 x 2200	1800 x 3000	1900 x 3000
Thermalam EVA with PET	1250 x 2200	1550 x 3000	1550 x 3000
Thermalam EVA with Thermaprint	1250 x 2200	1800 x 3000	1900 x 3000
Thermalam EVA Fallguard	1250 x 2200	1250 x 3000	1250 x 3000

Min size: 250x100mm





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