

# Thermal performance and weathertightness still paramount issues for national association

*Building Today* asked Window & Glass Association New Zealand technical manager Robert Campion about the main issues facing the Association, and industry suppliers, manufacturers and installers.

**BT:** What are the main issues currently surrounding window installation in New Zealand? For instance, what types of products and installation techniques can minimise condensation and improve the health of occupants in residential and commercial buildings?

**RC:** In terms of installation itself, the work done by industry in the early 2000s is well entrenched into the wider building industry. This work was carried out in response to the questions being asked of the industry in terms of weathertightness and, over time, has morphed into what is now considered the standard for window installation, E2/AS1.

A majority of builders would not know any

different. The Window & Glass Association New Zealand web site offers a guide to installation in terms of E2/AS1: [www.wganz.nz/guide-to-window-installation-2](http://www.wganz.nz/guide-to-window-installation-2) which not only helps understanding some of the thinking behind the system, but also how to put it together.

As I said, these details were put together in response to a single question, weathertightness, which is how our compartmentalised Building Code works.

Of course, the trend/current focus of building designers is one of thermal performance. The details described in E2/AS1 use air pressure to help keep water away from the openings, but moving air does not positively influence thermal performance.

To do this we must insulate the cavity between

the building and the window or door, but we must do this in a way that also provides a method for any failure water to escape the building envelope.

What many designers miss when specifying the insulating of the window opening is including a response to that initial question of weathertightness.

The Window & Glass Association New Zealand is working alongside BRANZ to develop a series of details that respond to both questions — weathertightness and thermal performance.

We've not yet seen anything in the market that achieves this result adequately, so have been investigating a number of possible solutions.

We expect to publish our findings next year, in the guise of the next E2/AS.

Certainly a more thermally-efficient installation, combined with a better performing frame and glazing, can reduce the incidence of condensation forming.

But it must be remembered that condensation is a by-product of humidity and, therefore, the control of condensation and the improvement of indoor air quality and the health benefits that come from this, require a more holistic consideration to the building design and the way its occupants inhabit it.

The window installation plays only a small part in this equation, but add all the small parts together and, certainly, a difference can be made.

**BT:** Acoustics are becoming more of an issue with the closer proximity of modern housing developments, and especially in residential apartments. How are these issues being addressed? For instance, the use of new double glazing products and techniques.

**RC:** Yes, with the increased density of our housing, acoustics are being considered more but, unfortunately, there is not a lot of new product available in this area.

## Window and Glass Association — a profile

The Window & Glass Association New Zealand (WGANZ) is the national association representing the window, door and glass industry.

Established in 1965, the Association is a not-for-profit, independent organisation with the goal of developing and maintaining high technical and professional standards, and to create a better built environment for New Zealand consumers.

The organisation has national and international recognition as a highly respected, compliant, self-regulating body.

This is reflected in its high membership levels, with the majority of window, door and glass businesses in New Zealand being certified members of the Association.

Although membership is voluntary, more than 430 reputable companies and individuals involved in the manufacturing, supply and installation of windows, doors, glass and components, have signed up to the Association's core values, compliance and professional standards.

### Association activities

WGANZ's written constitution guides all the organisation's activities, and spans three main categories — member technical and business support, active participation in the New Zealand building industry, and advocacy for ongoing technical innovation.

#### Key activities include:

- Ongoing development of glass, window and door performance standards and specifications.
- Co-operation with other building industry bodies.
- Provision of an independent dispute resolution service between consumers and Association members.
- Administration of the Window Energy Efficiency Rating System (WEERS) energy efficiency tool.
- Member promotion, including an annual awards programme. These annual awards include categories for apprenticeship achievements, residential and commercial design awards, and eco, innovation, and showhome awards.



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Acoustic performance is a combination of frame and glazing and, actually, the installation plays a part as well.

Just as we try to avoid thermal bridging to increase the thermal performance of the envelope, when acoustic performance is being considered we must reduce any acoustic bridging.

However, providing this separation is difficult and, at the moment, it is being solved project-by-project because there is no current industry initiative to provide guidance.

That said, our system suppliers are about to embark on a significant test programme to better understand and verify how multiple ranges of frame and glazing combinations perform acoustically.

Data from this testing will assist designers in selection and specification of better and more appropriate combinations.

**BT:** Installation of windows and doors is vitally important to the housing envelope. How does an industry organisation like the Window & Glass Association New Zealand provide resources and help maintain standards in such an important sector of the New Zealand building industry?

**RC:** As touched on above, we work closely with industry bodies such as BRANZ, Standards NZ, and MBIE to develop and deliver improved solutions appropriate to our current building environment.

However, one of the Association's current initiatives is the development of an accreditation programme around the field testing of windows and doors.

Site testing of product is being requested more and more, primarily in the commercial sector but also leaching down into the higher end residential projects.

What we want to provide is a level of assurance that field testing is being carried out with a high level of competence, consistency and repeatability.

**BT:** Within the Window & Glass Association New Zealand is a "Door Sector Group". Can you outline its purpose and the activities it undertakes?

**RC:** Under the Association umbrella sits a number of specialist sector-based committees. These include Window Systems, Glass, Components, Surface Finishing and Doors.

We're also in the process of starting up groups covering uPVC Manufacturers and Field Testing.

In terms of the Door Group, it focuses on ancillary door products, fire doors, vehicle access doors, roller shutters and automatic entrance doors.

Recently, we've been working through test Standards for vehicle access doors and developing a better understanding of fire doors, especially when it comes to maintenance, modification and compliance of existing door units.

Very few people understand that screwing a new handle, or closer, or kick plate to an existing fire door can actually void its compliance.

**BT:** What other innovations or initiatives does the Window & Glass Association New Zealand have underway or is planning in the near future?

**RC:** One of the most important projects we have on at the moment is the updating of Standards.

Earlier this year the MBIE released a list of

Standards they intend to review of the next 12 months. Amongst that list were two very important Standards to our industry: NZS4211 - Performance of Windows, and NZS4218 - Energy Efficiency in Small Buildings.

Of particular interest/importance is NZS4218 which tends to lead Clause H1 of our Building Code.

As noted previously, thermal performance is a current focus of designers not only in this country but, of course, the rest of the world and, in particular, the increased performance of the thermal envelope.

Globally we've seen the minimum "R" values of our building components raised to meet new design perceptions, in some cases to levels beyond the capability of existing products.

We fully expect the regulators to lift our current Code minimum values for windows and doors. The challenge will be to ensure these new Code minimums remain affordable at the lower end of our building industry.

Many forget that our Code minimums are just that — the starting point for building design and performance.

Those with larger budgets are more than welcome to step up the performance of their building envelope, but affordable housing must remain just that, affordable — of course, whilst delivering a better and healthier built environment.

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