SPECIFYING WINDOWS & DOORS

GUARANTEEING COMPLIANCE & PERFORMANCE

wintecsystems

INTRODUCTION

The past few years has been a significant increase in the occurrence of non-compliant products being used in Australian building projects.

The Australian Windows Association identifies a number of reasons for this increase, including:

- the increase in imported products
- pressure from consumers to reduce costs
- increased complexity and lack of understanding of regulatory requirements
- the absence of satisfactory building controls
- the government commitment to “free trade agreements” [1]

Specifying non-compliant windows and doors, or windows and doors of sub-standard design details can lead to a range of performance issues as well as a longer term impact on a designers reputation and future income.

Dependent on the project, housing, residential (apartments) or commercial, the windows and doors required will be different. Add to this the multiple performance requirements of modern day design, and what was once a fairly simple choice is now a complex decision.

It is the responsibility of specifiers and designers to ensure the correct products are specified.

This guide examines four key compliance and performance issues which must be considered.

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WIND PRESSURE & WATER PENERATION

Specifying windows without the necessary wind and water resistance can result in enormous amounts of damage to a building.

Under the Building Code of Australia, windows are required to meet mandatory minimum specifications under AS2047:2014 for a number of conditions that will impact performance and durability, including air infiltration, water penetration and structural or wind loading. To satisfy BCA, products must be tested to meet these minimum specifications [2].

The performance of the windows in testing will dictate where they can be used based on the requirements for the type of construction and site [3].

The requirements will vary depending on the type of construction. There are three classes of building types including housing, residential (apartments) and commercial, with different considerations for each.

THERMAL REQUIREMENTS AND ENERGY RATING

With up to 40 percent of a home’s heating lost and up to 87 percent of its heat gained through windows [4] thermal performance is crucial to reducing energy costs and greenhouse gas emissions. However, with Australia’s widely varying climate it can be difficult and time consuming to select the best window for the application.

The Window Energy Rating Scheme (WERS) enables windows to be rated and labelled for their annual energy impact on a building, in any climate of Australia.

WERS splits Australia’s climates into 3 different classes: Cooling Climate, Mixed Climate, Heating Climate [5] each require different window properties to achieve the best results.

Windows are rated for heating and cooling with stars; the more stars, the more effect the window will have on the thermal and energy performance of a building.

ACOUSTICS

As external noise transfers through glazing much more easily than through external walls, the sound insulation of windows and doors plays an important role in reducing external noise transfer.

The ability of a window to reduce noise is dependent on the following elements:

- frame design
- glazing
- distance between glass
- composition of glass pane type
- seals [6]

The level of acoustic performance is measured by the Rw measurement. Rw is the number used to rate effectiveness of a soundproofing system or material. The higher the Rw number the better a sound insulator it will be [7].

The level of surrounding noise as well as the necessary level of sound elimination will dictate the required level of acoustic performance.

BUSHFIRE PROTECTION

AS3959:2009 Construction of buildings in bushfire-prone areas sets out requirements to improve the ability of buildings in designated bushfire-prone areas to better withstand attack from bushfire [8].

The standards have classified different bushfire intensity levels that a home may experience during a bushfire, and are referred to as Bushfire Attack Levels (BAL).

There are six bushfire attack levels, ranging from very low risk to extreme risk. The levels are dependent on a property's region, vegetation and slope. The BAL of a property will dictate the type of windows and doors required.

"Wintec products are throughly tested to meet and exceed the requirements of Australian Standards"

GUARANTEEING COMPLIANCE

Wintec Systems are an all Australian designed and manufactured product, with modern designs and quality finish at the forefront of the Wintec philosophy.

An ongoing commitment to product development and service to the Wintec Systems Australia wide fabricator base ensures access to the latest designs in the Window and Door industry.

Wintec products are thoroughly tested to meet and exceed the requirements of Australian standards and performance needs.

Specifying Wintec Systems Windows & Doors helps to ensure products are:

- Tested to relevant Australians Standards AS2047:1999 & AS4420:1999
- WERS certified
- BAL rated
- Guaranteed for 7 years to provide peace of mind

SPECIFY WINTEC

Specify Wintec is an online solution for technical and architectural windows and door design. This web based service puts a technical expert at your fingertips, accurately evaluating your requirements and selecting a product which best suit all your needs.

Specify Wintec helps to specify the entire Wintec Systems range, including:

- Sliding Windows
- Double-hung Windows
- Awning Windows
- Casement Windows
- Louvre Windows
- Sliding Doors
- Hinged Doors
- Bi-fold Doors

Wintec Systems also provide complete testing and performance results for all of their products; For Wintec Acoustics Test Results from the National Acoustic Laboratory & WERS Certified Energy Performance Results please visit: http://www.wintecsystems.com.au

To simplify the specifying process for performance windows and doors, and ensure the right choice for the right application visit: http://wintec.myspec.net.au/

REFERENCES

1 http://www.masterbuilders.asn.au/news/news-items/industry-information/non-compliant-products-and-the-window-industry

2 http://www.yourhome.gov.au/passive-design/glazing

3 https://www.awa.org.au/documents/item/177

4 http://www.yourhome.gov.au/passive-design/glazing

5 http://www.wers.net/werscontent/energy-efficient-windows

6 http://www.adelaidecitycouncil.com/assets/noise_technical_fact_sheet_3_-_sound_insulation_for_windows.pdf

7 Sound Insulation Handbook 2004, Australian Building Codes Board

8 http://law.resource.org/pub/au/ibr/as.3959.2009.pdf