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Storms Highlight Issues with Fixings of Window Frames

CTS Report TR55 available at www.jcu.edu.au/cts details the Station's survey of housing damage following the Brisbane storms in November 2008. An important finding from this report is the significant number of cases where windows or doors were not adequately fixed to their supporting structural members (jamb studs). In some of these cases the complete window or door assembly was pushed in as a unit (with glass unbroken), apparently because the fixings from the frame to the supports were not strong enough to support the applied wind pressure loading.

The standard AS 1288-2006 "*Glass in buildings - Selection and installation*" does provide detailed guidance to select the type and thickness of glass for any commonly used window geometry, design wind loading and human impact requirements. AS 2047 – 1999 "*Windows in buildings- Selection and installation*" requires only that window assemblies be fixed into buildings using recognized building practices. However there does not appear to be an Australian Standard or any industry-wide recommendations that adequately specify details for the fixing of window frames to the supporting structure.

Based on the findings from the Station's damage investigations and from other site inspections of houses under construction, it appears that improvements are needed for both the specification and the installation of adequate fixings from the window frames to the supporting structures. Possible solutions include:

- Improvements to AS 2047 to include more specific requirements on window fixing.
- Manufacturers' literature to include specific window fixing requirements.
- An Australian Window Association brochure to include specific window fixing information, either giving adequate detail or advising readers where the information can be found, or
- Industry protocols to support adequate information attached to the window at the time of installation.

It is considered important that a solution to this problem is identified and implemented quickly. The following steps are suggested as an interim solution:

- Select the appropriate design wind loading for the location and wind exposure of the building.
- Specify the glass type and thickness based on the relevant standards. Note that human impact and other requirements may also need to be accounted for, but these are outside the scope of this alert.
- Select an appropriate window frame.
- Obtain written advice on window fixing from the manufacturer, a building professional or consulting engineer, including number and type of fixings, maximum allowable gaps and whether packing is required.
- The window should then be installed in accordance with these recommendations.

For further information, please contact the CTS Manager at the address above.