

## GLAZING AND WINDOW STANDARDS

### Purpose

The purpose of this News Flash is to clarify the provisions of the Building Code of Australia (BCA), in regard to glazing and window standards and to advise on the Queensland variation to the BCA in this regard.

### Summary

Under the current BCA Deemed-to-Satisfy Provisions, glazing and windows may comply with either:

- AS 2047-1999 Windows in buildings-selection and installation; or
- AS 1288-1994 Glass in buildings-selection and installation.

AS 2047 specifies requirements for materials, construction, installation and glazing for windows. The term “window” includes louvres and sliding doors. AS 1288 relates to the selection and installation of glazing in buildings.

When Amendment No. 7 to BCA 96 commences on 1 July 2000, it is intended the method of referencing the two Standards in the BCA will change so that the option of complying with AS 1288 for windows will no longer be available. Windows will be required to comply with the relevant parts of AS 2047. AS 1288 can then only be used as the Deemed-to-Satisfy structural solution for glazing but not for waterproofing (refer to Table 1 on Page 2 of this News Flash).

### Detailed explanation

On 1 July 1999, AS 2047 was referenced in the BCA as part of Amendment No. 5. Since that time, many enquiries have been received regarding the interpretation and intention of referencing both AS 2047 and AS 1288.

Amendment No. 5 referenced AS 2047 as a Deemed-to-Satisfy Provision for the structural Performance Requirement BP1.1 in Volume One of the BCA (Class 2 to 9 buildings) and both the structural and weatherproofing Performance Requirements P2.1 and P2.2.2 in the Housing Provisions (Class 1 and 10 buildings).

Because AS 1288 continued to be referenced in respect of those Performance Requirements, compliance with the Deemed-to-Satisfy Provisions of the BCA for windows in buildings could be achieved by complying with the relevant parts of either AS 1288 or AS 2047. It should be noted, however, that if the option of complying with AS 1288 is selected, wind loads from AS 1170.2 are used rather than those specified in AS 2047 for windows in housing.



The current ability for designers to specify windows complying with either of AS 1288 or AS 2047 provides industry with time to have their products tested to the requirements of AS 2047.

It is intended that when Amendment No. 7 to the BCA commences on 1 July 2000, the method of referencing the two Standards will be altered so that AS 1288 will be deemed to meet the structural Performance Requirements for glazing and AS 2047 will be deemed to meet both the structural and weatherproofing Performance Requirements for windows. This will mean that, from Amendment No. 7, windows will be required to comply with the relevant parts of AS 2047 if they are to meet the Deemed-to-Satisfy Provisions of the BCA. A summary of the current and proposed situation regarding the BCA reference to AS 1288 and AS 2047 is contained in the following Table 1:

<b>TABLE 1</b>	<b>Standard</b>	<b>Comments</b>
<b>Current requirement</b>	AS 1288	<ul style="list-style-type: none"> <li>• Deemed-to-Satisfy for windows and glazing.</li> <li>• Wind load concession in AS 2047 for windows in housing not available. Design wind load must be in accordance with AS 1170.2</li> <li>• Meets Performance Requirement BP1.1 (structural) in BCA96 Volume One.</li> <li>• Meets Performance Requirements P2.1 (structural) and P2.2.2 (weatherproofing) in the Housing Provisions.</li> </ul>
	AS 2047	<ul style="list-style-type: none"> <li>• Deemed-to-Satisfy for windows.</li> <li>• Wind load concession available for windows in housing if AS 2047 used.</li> <li>• Meets Performance Requirement BP1.1 (structural) in BCA96 Volume One.</li> <li>• Meets Performance Requirements P2.1 (structural) and P2.2.2 (weatherproofing) in the Housing Provisions.</li> </ul>
<b>Proposed requirement (from Amendment No. 7)</b>	AS 1288	<ul style="list-style-type: none"> <li>• Deemed-to-Satisfy for glazing.</li> <li>• Meets Performance Requirement BP1.1 (structural) in BCA96 Volume One.</li> <li>• Meets Performance Requirements P2.1 (structural) in the Housing Provisions.</li> </ul>
	AS 2047	<ul style="list-style-type: none"> <li>• Deemed-to-Satisfy for windows.</li> <li>• Meets Performance Requirements BP1.1 (structural) and FP1.4 (weatherproofing) in BCA96 Volume One.</li> <li>• Meets Performance Requirements P2.1 (structural) and P2.2.2 (weatherproofing) in the Housing Provisions.</li> </ul>

### **Queensland Variation to the BCA**

You are also referred to the Queensland Variations to the BCA Housing Provisions, in Part 3.6-Glazing and in Part 3.11-Structural Design Manuals. Under these variations, clause 3.6.0 (b) and 3.11.4 (i)(ii) are replaced by Qld clauses 3.6.0 (b) and 3.11.4 (i)(ii) respectively. This means Tables 2.1 and 2.5 of AS 2047 are omitted and replaced by Qld Tables 2.1 and 2.5.

### **Reason for Queensland Variation**

The proposed changes to AS 2047 resulted in a problem for Queensland. Without the variation, the changes would have required windows in cyclonic areas (i.e. north of and including Bundaberg, and within 50 km of the coast) to have stronger frames and thicker glass than is current practice. This would have added between \$200 to \$300 per house and cost the cyclonic region an additional \$7 million per year.

The changes to AS 2047 provide that if a window does fail, the sudden increase in the wind pressure inside the building should not cause the other windows to break or pop out. However, the code does not require the glass to be strong enough to resist the flying debris which is the main cause of glass breakage in cyclones. Therefore, the Department is not convinced the additional cost imposed by the standard is justified without further analysis of the full social and economic costs and benefits of the proposed changes being identified. The Department can see no real benefit and would require further cost/benefit analysis including likely social implications before adopting the standard.

All other States support the changes to AS 2047 because of the benefits outlined above, including Western Australia and Northern Territory, which are also affected by cyclones. However, the implications for Queensland are much more significant, given the level of building work in cyclonic areas.

The Queensland variation to the BCA is regarded as an interim measure and is subject to industry findings over the next 12 months. Should industry demonstrate an overall benefit to Queensland cyclonic areas by adopting the code, then the variation will be deleted from the BCA.