



## **Advice on the Use of AS 1668 Part 2**

### **Purpose**

The purpose of this paper is to provide practitioners with advice on the Building Code of Australia (BCA) reference to the 1991 edition of AS 1668 *The use of mechanical ventilation and air-conditioning in buildings, Part 2 Mechanical ventilation for acceptable indoor-air quality* (AS 1668.2-1991).

### **Background**

Since its introduction, the 1996 edition of the Building Code of Australia (BCA96) has referenced AS 1668.2-1991. In 2002, Standards Australia published a new edition titled AS 1668 *The use of ventilation and airconditioning in buildings, Part 2 Ventilation design for indoor air contaminant control* (AS 1668.2-2002). However, AS 1668.2-2002 has not been referenced in the BCA.

A number of enquires have been received about why the BCA has not referenced AS 1668-2002, and when it is likely to be referenced.

### **AS 1668.2-2002 not a BCA Reference**

Any amendment to the BCA, including those that reference Standards, needs the support of representatives from industry and all levels of Government (Commonwealth, State/Territory and Local). In this instance, the inclusion of AS 1668.2-2002 in the BCA has not been supported.

There are a number of reasons for this, ranging from policy issues to technical considerations. The ABCB is also conscious of the need for a transition period, which allows industry to adjust, when new requirements are introduced.

### **Natural ventilation**

Historically, AS 1668.2-1991 has focused on mechanical ventilation, but AS 1668.2-2002 also includes natural ventilation. Different natural ventilation rates have been specified in the Standard to those that have previously been used in the BCA. Currently, for natural ventilation, the BCA requires openings to be 5% of the floor area of the subject room. This is irrespective of the use of the room.

Some State/Territory Building Control Administrations consider there is insufficient justification for the change to require natural ventilation rates to be based on metabolic rates of occupants and occupant density. They have also expressed concern about the general industry's ability to deal with the complexity of the natural ventilation requirements of AS 1668.2-2002.

The BCA attempts to cover all building types or classifications, whether for public access or private or restricted use. The ventilation rates specified in the revised AS 1668.2-2002, as it currently stands, may be applicable to some building types where occupant numbers are restricted.

### **Environmental tobacco smoke**

State and Territory legislation determines whether smoking is permitted or not in various buildings. Not all buildings types have restrictions on smoking and each State and Territory have different requirements.

AS 1668.2-2002 specifically states that it does not address the health aspects of exposure to environmental tobacco smoke (ETS). AS 1668.2-2002 enables designs of buildings where smoking is permitted and where smoking is prohibited. The ventilation rate for buildings where smoking has been prohibited is less than those for buildings where smoking is allowable.

On advice from their health authorities, a number of State/Territory Building Control Administrations have objected to these provisions in AS 1668.2-2002 which could be construed as permitting smoking in buildings.

### **Minimum ventilation rates**

AS 1668.2-2002 allows ventilation rates below 10 litres/occupant/second. Some State/Territory Building Control Administrations have been advised by their health authorities that this is inconsistent with international practice and as a consequence, were unable to support the use of the new ventilation rates. A number of State and Territory Authorities have concerns as to the options expressed in the 2002 edition of AS 1668.2 which remain unresolved.

### **Use of Performance**

Whilst the BCA references AS 1668.2-1991 as a Deemed-to-Satisfy Provision, the performance based nature of the BCA allows other options to be considered. Use of AS 1668.2-2002 may form part of the development of an Alternative Solution provided the authority having jurisdiction can be satisfied that the Alternative Solution meets the Performance Requirements of the BCA.

### **Conclusion**

Future BCA referencing of AS 1668.2-2002 in total or part would be subject to satisfactory discussions and negotiations between the ABCB and Standards Australia to resolve the above matters. During this time, Standards Australia is obliged to maintain AS 1668.2-1991 as long as it continues to be referenced in the BCA.