

STANDARDS AUSTRALIA

Amendment No. 1
to
AS 4040.2—1992
Methods of testing sheet roof and wall cladding
Method 2: Resistance to wind pressures for non-cyclone regions

REVISED TEXT

The 1992 edition of AS 4040.2 is amended as follows; the amendments should be inserted in the appropriate places.

SUMMARY: This Amendment applies to Clauses 2, 4.2, 6.1.2, 7 and Bibliography (new).

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Clause 2

- 1 *Add* the following under AS listing:
4055 Wind loads for housing
- 2 *Delete* reference '1170.2' under AS listing and *replace* with the following:
AS/NZS
1170 Structural design actions
1170.2 Part 2: Wind actions

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Clause 4.2

Delete clause text, including Note, and *replace* with the following:

A commonly used loading medium for this type of test is an air box or air chamber where the cladding forms the top surface of the box. The air chamber is pressurized, thus providing a uniform load across the surface of the cladding. For concealed fixed cladding systems, an air box without a continuous membrane (either positive or negative pressure) shall be used for testing.

NOTES:

- 1 Inflatable air bag loading systems, point or line loading systems cannot be used for testing of concealed fixed cladding as they can impose constraints on the test specimen, hinder the cladding deformation, and lead to un-conservative results
- 2 Secombe et al (1996) details lower failure pressures for secret fixed cladding tested in air chamber compared with air bag method.
- 3 Whatever method is used for testing the resistance to wind pressures, it is emphasized that it is the cladding and its fastenings that are under test. Rigid materials may not be used as a loading medium. Air pressure is required to satisfactorily model the performance of both sheeting and fastenings.

For pierced fixed cladding tests, if inflatable bags are used as a loading medium, the bags should be sufficiently flexible to apply pressure evenly to the area under test by making contact over the entire soffit of the area of cladding to be loaded, and to maintain such contact, irrespective of the deflection. Care must be taken to ensure that the air pressure as measured, e.g. by a manometer, is actually the pressure in the bag. Gauges on the inlet side may not always give a correct reading and it has been found in such cases that measurement of the pressure on the outlet side of the system is necessary. For two-span specimens, it is good practice to measure the reaction force of the central purlin.

For ribbed profile cladding, consideration should be given to the effects of wind pressure acting on the surfaces of individual ribs. Such pressure would not normally be generated during a test using rigid loading materials, or even air bags, unless specific provisions were made.

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Clause 6.1.2

- 1 *Delete* 'AS 1170.2.' and *replace* with 'AS/NZS 1170.2'.
- 2 *Add* the following after the second sentence:

Alternatively, the design net pressures shall be obtained directly for the N wind classifications from AS 4055.

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Clause 7

- 1 Item (c), *delete* 'structure under test' and *replace* with 'cladding system'.
- 2 Item (d)(ii), *delete* ', noting whether pull-through occurred'.
- 3 *Delete* Item (f) and *replace* with the following:

(f) Test pressure and design pressure.

(g) Reference to this Australian Standard, i.e. AS 4040.2.

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Bibliography (new)

Add new Bibliography as follows:

BIBLIOGRAPHY

Seccombe, C., Carne, S., and Martin, B. (1996). "Improvements in system evaluation under static and cyclic wind loads." 1996 National Engineering Conference, I.E. Aust., Darwin.
