AS/NZS 1170.2 Supplement 1:2002

Structural design actions—Wind actions—Commentary (Supplement to AS/NZS 1170.2:2002)

Standards Australia

STANDARDS NEW ZEALAND
Paerewa Aotearoa

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PREFACE

This Commentary was prepared by the Joint Standards Australia/Standards New Zealand Committee BD-006, General Design Requirements and Loading on Structures, as a Supplement to AS/NZS 1170.2, *Structural design actions*, Part 2: *Wind actions*. This Commentary supersedes, in part, AS 1170.2—1989, *Minimum design loads on structures*, Part 2: *Wind loads* and, in part, NZS 4203:1992, *Code of practice for general structural design and design loadings for buildings (Vol. 2).*

The Commentary provides background material and guidance to the requirements of the Standard.

The clause numbers of this Commentary are prefixed by the letter 'C' to distinguish them from references to the Standard clauses to which they directly relate. Where a Commentary to a certain Clause is non-existent, it is because no explanation of the Clause is necessary.

Appendix CA includes a list of additional definitions used in this Commentary, and Appendix CB includes a list of additional symbols used in this Commentary.

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John Holmes

Bill Melbourne

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Andrew King

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SECTION C1 SCOPE AND APPLICATION

C1.1 SCOPE

This Commentary is intended to be read in conjunction with AS/NZS 1170.2:2002. The Commentary includes explanations of the provisions and in some cases suggests approaches that may satisfy the intent of the Standard. Commentary Clauses are not mandatory. Lists of references are also given at the end of each Section for further reading.

The principles for determining wind actions given in the Standard are generally applicable to wind loads on any structure.

The specific data given for the cases outlined (e.g., aerodynamic shape factors) are based on research involving wind tunnel testing, measurements in the field and calculation using established principles of fluid mechanics. They are generally relevant for simplified situations; however, the values derived are applied to real design cases using methods that account for such uncertainties (see also Clause C1.4).

The Standard does not attempt to predict the effects of possible future climatic changes, as the evidence for changes in wind speeds is inconclusive.

For the effects of tornadoes, wind speeds can be significantly higher than those given in the Standard. The effect of debris is also significant. Such wind events are not covered due to their small nature and low occurrence in populated areas of Australia and New Zealand. Structures that extend over considerable distances, such as powerlines or pipelines, may be affected by tornadoes if the usual path of such events is across the structure.

The methods given in the Standard are not sufficient for some structures such as electricity transmission structures, bridges, lattice towers, cranes and similar, as specific details necessary to perform calculations are not given. In these cases, the Standard may be used to determine site wind speeds or design wind speeds, but other Standards should be referenced for detailed factors.

C1.2 APPLICATION

C1.3 REFERENCED DOCUMENTS

Documents referred to in this Commentary are listed at the end of each Section.

C1.4 DETERMINATION OF WIND ACTIONS

This Clause includes the performance statement for wind forces and states that the remainder of the Standard is a solution that is deemed to comply with this statement within the context of the Standard.

A general background to the wind loading of structures is given by Holmes (Ref. 1).