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AS/NZS 2041.1:2011
(Incorporating Amendment No. 1)

AS/NZS 2041.1:2011

Australian/New Zealand Standard™

Buried corrugated metal structures

Part 1: Design methods

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AS/NZS 2041.1:2011

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee CE-025, Corrugated metal Drainage Pipes and Arches. It was approved on behalf of the Council of Standards Australia on 12 July 2011 and by the New Zealand Standards Approval Board on 15 July 2011.
This Standard was published on 5 August 2011.

The following are represented on Committee CE-025:

AUSTROADS
Australasian Railway Association
Australian Chamber of Commerce and Industry
Australian Industry Group
Galvanizers Association of Australia
Main Roads Department Queensland
New Zealand Heavy Engineering Research Association
University of Queensland

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Australian/New Zealand Standard™

Buried corrugated metal structures

Part 1: Design methods

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee CE-025, Corrugated Metal Drainage Pipes and Arches, to supersede, in part, AS/NZS 2041:1998, *Buried corrugated metal structures*, AS 1762—1984, *Helical lock-seam corrugated steel pipes—Design and installation*, AS 3703.2—1989, *Long-span corrugated steel structures*, Part 2: *Design and installation*.

This Standard incorporates Amendment No. 1 (September 2018). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

The objective of this Standard is to provide designers, manufacturers and installers of buried corrugated metal structures with requirements for the structural design of such structures for use in earthworks, primarily as drainage culverts or access ways.

This Standard is Part 1 of the AS/NZS 2041 series, *Buried corrugated metal structures*, which comprises the following parts:

AS/NZS
2041 Buried corrugated metal structures
2041.1 Part 1: Design methods (this Standard)
2041.2 Part 2: Installation
2041.4 Part 4: Helically formed sinusoidal pipes
2041.6 Part 6: Bolted plate structures

Other parts of the series being proposed include the following:

Part 3: Assessment of existing structures
Part 5: Helically formed ribbed pipes
Part 7: Bolted plate structures with transverse stiffeners
Part 8: Metal box structures

This Edition includes the following changes:

(a) The design methods are now applicable to any of the products in the AS/NZS 2041 series of Standards.

(b) Installation requirements have been moved to AS/NZS 2041.2.

(b) Design criteria for aluminium included.

(c) Clearer presentation of the design model.

(d) Limit state method included (harmonized with the Canadian Highway Bridge Design Code).

(e) Current Australian, New Zealand and selected overseas design loads, including earthquake loads.

(f) Greater comprehensive discussion of durability issues.

(g) Method included for approval of profiles other than sinusoidal profiles.

(h) Notations have been brought in line with ISO 3898, Bases for design of structures—Notation—General symbols.

(i) Background material guidance on the requirements of various clauses in the Standard included (Appendix B and Appendix E).

Design requirements are based on empirical formulae established by full scale testing. Details of the methods for full size testing to determine properties are also included.

In this document, the words ‘this Standard’ indicates AS/NZS 2041.1.

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The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to Tables and Figures are deemed to be an integral part of the Standard. Notes to the text contain information and guidance and are not considered to be integral parts of the Standard.

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