AS/NZS 2041.6:2010

Australian/New Zealand Standard™

Buried corrugated metal structures

Part 6: Bolted plate structures

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

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 9 September 2010 and on behalf of the Council of Standards New Zealand on 24 September 2010.
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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
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New Zealand Heavy Engineering Research Association
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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*.

The objective of this Standard is to provide designers, manufacturers and installers of buried bolted plate structures with requirements for manufacture of such structures for use in earthworks primarily as culverts or access ways.

This Standard is Part 6 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
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 currently being drafted 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) Design requirements have been moved to AS/NZS 2041.1, which includes new limit states design methods.

(b) Installation requirements are referred to AS/NZS 2041.2.

(c) Notation has been based on ISO 2895.

(d) Materials and fabrication requirements (remaining in this Standard) have been updated.

(e) Class 1 and class 2 are now termed B68 and B200 profiles.

(f) New profile sizes B152, B230 and B381, included.

(g) Reference tables for cover limits have been taken out.

In this document, the words 'this Standard' indicate AS/NZS 2041.6, which is regarded as Part 6 of the AS/NZS 2041 series of Standards.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies minimum requirements for the materials and manufacture of buried corrugated metal structures formed by bolting together plates with sinusoidal profile.

Sinusoidal profiles covered include the following:

(a) B68 (pitch 68 mm)..... manufactured with either lapped joints or flanged joints.

(b) B152 (pitch 152 mm)..... lapped joints only.

(c) B200 (pitch 200 mm)..... lapped joints only.

(d) B230 (pitch 229 mm)..... lapped joints only.

(e) B381 (pitch 381 mm)..... lapped joints only.

The structure shapes are as follows (see Figure 1.1):

(i) Pipe.

(ii) Pipe-arch or underpass.

(iii) Horseshoe arch or elliptical arch.

(iv) Arch (one, two or three radius).

(v) Vertical ellipse.

(vi) Horizontal ellipse.

(vii) Metal box.

These structures are intended for use in stormwater drainage and as access tunnels to support roadway and railway and other loadings.

Bolted plate structures are constructed of corrugated section shapes buried in an embankment or in a trench, with correct installation in a soil envelope being essential to the performance of the structure.

This Standard does not consider the additional design requirements for internally pressurized applications.

NOTES:

1 Guidelines on requirements that may need to be specified at the time of calling for tenders or quotations, and information to be supplied by the manufacturer, are detailed in Appendix A.

2 Information on means of demonstrating compliance with this Standard is given in Appendix B.

3 When intended for use in internally pressurized applications, specialist advice should be obtained.