AS/NZS 2041.2:2011

Australian/New Zealand Standard™

Buried corrugated metal structures

Part 2: Installation

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 20 October 2010 and on behalf of the Council of Standards New Zealand on 5 November 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
Main Roads Department Queensland
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This Standard was issued in draft form for comment as DR 10016.

Australian/New Zealand Standard™

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Originated, in part, as AS 1762—1984, AS 3703.2—1989 and AS/NZS 2041:1998.
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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, the following:

AS/NZS 2041:1998, Buried corrugated metal structures

AS 3703.2—1989, Long-span corrugated steel structures, Part 2: Design and installation

AS 1762—1984, Helical lock-seam corrugated steel pipes—Design and installation

The objective of this Standard is to provide designers, manufacturers and installers of buried corrugated metal structures with requirements for installation of such structures for use in earthworks as culverts or accessways.

This Standard is Part 2 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 (this Standard)
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) Materials and fabrication requirements have been moved to the other parts of the AS/NZS 2041 series (Parts 4 and 6).

(c) Clauses have been added to assist the installer to better understand the design issues relating to proper installation.

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 requirements for the installation of buried corrugated metal structures intended for use in stormwater drainage and as access tunnels, to support or accommodate roadway and railway and other loadings.

Buried corrugated metal structures are flexible members that rely on soil-structure interaction. Correct installation is essential to performance. Adequate compaction of the specified fill material is a requisite for meeting the design criteria for strength.

NOTE: Incorrect backfilling procedure may result in collapse of the culvert.

1.2 APPLICATION

This Standard shall be used in conjunction with AS/NZS 2041.1 and the appropriate product Standard of this series (see Clause 1.3).

NOTE: This Standard specifies the installation requirements. The performance of the structure depends on correct installation (particularly adequate compaction of appropriate fill material around the metal structure) for which this Standard gives the requirements. AS/NZS 2041.1 gives information on design issues and requirements for structural design of the metal structure. Other Parts of the AS/NZS 2041 series give requirements for manufacture and fabrication of the products installed using this Standard.

1.3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS

1012		Methods of testing concrete
1289		Methods of testing soils for engineering purposes
1289.3.4.1	Method 3.4.1:	Soil classification tests—Determination of the linear shrinkage of a soil—Standard method
1289.5.1.1	Method 5.1.1:	Soil compaction and density tests—Determination of the dry density/moisture content relation of a soil using standard compactive effort
1289.5.3.1	Method 5.3.1:	Soil compaction and density tests—Determination of the field density of a soil—Sand replacement method using a sand-cone pouring apparatus
1289.5.3.2	Method 5.3.2:	Soil compaction and density tests—Determination of the field dry density of a soil—Sand replacement method using a sand pouring can, with or without a volume displacer
1289.5.3.5	Method 5.3.5:	Soil compaction and density tests—Determination of the field dry density of a soil—Water replacement method