**TS 01108:1.0**

CRN CP 312

**Specifications**

# Buried Corrugated Metal Structures

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# Document information

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|---|---|
| **Owner:** | Director Corridor Infrastructure & Engineering, AMB, SER |
| **Mode** | Heavy rail |
| **Discipline** | Civil |

# Document history

| Revision | Effective date | Summary of changes |
|---|---|---|
| Version 1.1 | January 2022 | TfNSW template applied. |
| Version 2.0 | 30 January 2022 | First full UGLRL release. |

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# 1. Purpose

This technical specification covers the requirements for manufacture of Buried Corrugated Metal Structures for use on the Country Regional Network (CRN) to meet the requirements of CRN Engineering Standard CRN CS 310 – Underbridges.

Buried Corrugated Metal Structures included in this specification include Helical Lock-Seam Corrugated Steel Pipes and Annular Bolted Seam Corrugated Steel Pipes, Pipe-Arches and Arches complying with Australian Standards AS/NZS 2041.

# 2. References

## 2.1. Australian and International Standards

| | |
|---|---|
| AS/NZS 2041 | Buried corrugated metal structures - Design methods |
| AS 3703.1 | Long-span corrugated steel structures - Materials and manufacture |
| ASTM A742/A742M | Standard Specification for Steel Sheet, Metallic Coated and Polymer Precoated for Corrugated Steel Pipe |
| ASTM A796/A796M | Standard Practice for Structural Design of Corrugated Steel Pipe, Pipe-Arches, and Arches for Storm and Sanitary Sewers and Other Buried Applications |

Unless otherwise specified, all references relate to the latest standard versions, including amendments and relevant superseding standards.

## 2.2. CRN Documents

| | |
|---|---|
| CRN CS 310 | Underbridges |

## 2.3. Other References

Nil

# 3. Manufacture

Helical Lock-Seam Corrugated Steel Pipes, Annular Bolted Corrugated Steel Pipes, Pipe-Arches, Arches and Elliptical Arches (Horizontal or Vertical ellipse) shall be manufactured to comply with AS/NZS 2041.

Where required Polymer Coating shall comply with ASTM A742/A742M

Super-Cor Arches and Steel Box Culverts shall be manufactured to comply with ASTM A796/A796M.

# 4. Special requirements

For Helical Lock-Seam Corrugated Steel Pipes, UGLRL CRN has adopted its own thickness standards for each full circle pipe diameter between 300 and 1800mm. These are shown in Table 1 for each relevant diameter of pipe.

**Table 1 – Pipe wall thickness**
**UGLRL CRN standard gauges for Helical Lock-Seam Corrugated Steel Pipes**

| Diameter | 300 | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Thickness | 2 | 2 | 2 | 2 | 2.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |

Note:

The thickness of sheet shown in Table 1 is in excess of that shown in Reference Tables in AS/NZS 2041 for the respective diameters as additional thickness has been provided for increased corrosion/abrasion protection.

# 5. Repairs to Coatings

The manufacturer will specify the recommended method of and equipment for field repair of damaged surface coatings.

# 6. Coupling

Pipes will be supplied in lengths that may need field joining with manufacturers coupling bands. Coupling bands shall be used to join adjacent lengths of pipe to obtain the specified length of culvert.

Coupling bands may be supplied as one, two, three or four segments per circle.