AS 1762—1984

Australian Standard®

HELICAL LOCK-SEAM CORRUGATED STEEL PIPES — DESIGN AND INSTALLATION

This Australian standard was prepared by Committee WS/11, Corrugated Metal Drainage Pipes and Arches. It was approved on behalf of the Council of the Standards Association of Australia on 7 September 1984 and published on 7 December 1984.

The following interests are represented on Committee WS/11:

Confederation of Australian Industry
Department of Public Works, New South Wales
Metal Trades Industry Association of Australia
National Association of Australian State Road Authorities
Public Works Department, Victoria
Railways of Australia Committee
University of Adelaide
University of New South Wales

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PREFACE

This edition of this standard was prepared by the Association's Committee on Corrugated Metal Drainage Pipes and Arches to supersede AS 1762—1979, Code for Design and Installation of Helical Lock-seam Corrugated Steel Pipes.

The principal purpose of the standard is to lay down the essential requirements for the installation of helical lock-seam corrugated steel pipes manufactured in accordance with AS 1761, Helical Lock-seam Corrugated Steel Pipes, as distinct from riveted, nestable and bolted corrugated steel structures manufactured in accordance with AS 2041, Corrugated Steel Pipes, Pipe-arches and Arches.

This edition differs from the previous edition as follows:

(a) The ultimate ring compression strength (F_c) in Fig. 2.3 is increased to 250 MPa.

(b) The equations for stresses in Clause 2.5 are amended.

(c) For handling stiffness (F_F), in Clause 2.7, the pipe diameter is increased to 3600 mm.

(d) The values of the section properties of corrugated steel sheet (Table 2.4) and corrugations for helical lock-seam pipe are changed.

(e) Consequential changes as a result of (a) above are made in Appendix A.

(f) Appendices B and C are amended.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
HELICAL LOCK-SEAM CORRUGATED STEEL PIPES — DESIGN AND INSTALLATION

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard sets out requirements for the design and installation of structures of helical lock-seam corrugated steel pipes.

1.2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1289 Methods of Testing Soils for Engineering Purposes

1289.E1.1 — Part E — Soil Compaction and Density Tests — Determination of the Dry Density/Moisture Content Relation of a Soil Using Standard Compaction — Standard Method

1289.E1.2 — Part E — Soil Compaction and Density Tests — Determination of the Dry Density/Moisture Content Relation of a Soil Using Standard Compaction — Subsidiary Method

AS 1761 Helical Lock-seam Corrugated Steel Pipes.

1.3 DEFINITIONS. For the purpose of this standard the following definition applies:

Cover — the vertical distance between the top of the structure and —

(a) pavement surface of road;

(b) top of rails;

(c) top of fill where (a) and (b) are not applicable.

1.4 NOTATION. The notation used in this standard shall have the following meaning with respect to the structure or member or condition to which a clause is applied:

A = area of corrugated steel section per unit length, in square millimetres per millimetre

C = ring compression, in kilonewtons per metre

E = modulus of elasticity for steel, taken as 205×10^3 MPa

F_a = allowable compressive strength, in megapascals

F_c = ultimate compressive wall strength, in megapascals

F_Y = minimum yield strength, in megapascals

F_F = flexibility value, in millimetres per newton

H = height of cover, in metres

I_c = second moment of area of the corrugated section per unit length, in millimetres to the fourth power per millimetre

K_f = load factor (see Clause 2.3)

P_{DL} = dead load pressure, in kilopascals

P_{LL} = live load pressure, in kilopascals

P_V = design pressure, in kilopascals

r = radius of gyration of corrugated steel section, in millimetres

S_s = internal diameter of pipe, in millimetres

t = thickness, in millimetres

w = unit load of fill, in kilonewtons per cubic metre

Z = section modulus of corrugated steel section, in millimetres cubed per millimetre

1.5 MATERIALS. Helical lock-seam corrugated steel pipes shall comply with AS 1761.