

ISO 11298-4:2021 (E)

Plastics piping systems for renovation of underground water supply networks — Part 4: Lining with cured-in-place pipes

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
3.1	General terms
3.2	Techniques
3.3	Characteristics
3.4	Materials
3.5	Product stages
3.6	Service conditions
4	Symbols and abbreviated terms
4.1	Symbols
4.2	Abbreviated terms
5	Pipes at the “M” stage
5.1	Materials
5.2	General characteristics
5.3	Material characteristics
5.4	Geometric characteristics
5.5	Mechanical characteristics
5.6	Physical characteristics
5.7	Jointing
5.8	Marking
6	Fittings at the “M” stage
7	Ancillary components
8	Fitness for purpose of the installed lining system at the “I” stage
8.1	Materials
8.2	General characteristics
8.3	Material characteristics
8.4	Geometric characteristics
8.4.1	General
8.4.2	CIPP wall structure
8.4.3	Wall thickness
8.5	Mechanical characteristics
8.5.1	Reference conditions for testing
8.5.2	Test requirements
8.6	Physical characteristics
8.7	Additional characteristics
8.7.1	Leak tightness of liner terminations
8.8	Sampling
9	Installation practice
9.1	Preparatory work
9.2	Storage, handling and transport of pipe components

- 9.3 Equipment
- 9.4 Installation
- 9.4.1 Environmental precautions
- 9.4.2 Installation procedures
- 9.4.3 Simulated installations
- 9.5 Process-related inspection and testing
- 9.6 Lining termination
- 9.7 Reconnections to existing pipeline system
- 9.8 Final inspection and testing
- 9.9 Documentation

Annex A (informative) CIPP components and their functions

Annex B (normative) Cured-in-place pipes — Determination of short-term flexural properties

- B.1 General
- B.2 Apparatus
- B.3 Test piece shape and dimensions
 - B.3.1 General
 - B.3.2 Shape
 - B.3.3 Thickness
 - B.3.4 Width
 - B.3.5 Length
- B.4 Procedure
 - B.4.1 General
 - B.4.2 Measurement of composite thickness and width
 - B.4.3 Setting of span
 - B.4.4 Measurement of span
 - B.4.5 Alignment of test piece
- B.5 Calculation and expression of results
 - B.5.1 General
 - B.5.2 Span and thickness for calculation
 - B.5.3 Determination of strain datum
 - B.5.4 Derivation of flexural properties for flat samples
 - B.5.5 Derivation of flexural properties for curved samples
 - B.5.6 Alternative expression of flexural properties
- B.6 Test report

Annex C (normative) Cured-in-place pipes — Determination of long-term flexural modulus under dry or wet conditions

- C.1 General
- C.2 Principle
- C.3 Apparatus
- C.4 Sample preparation
- C.5 Preparation of test pieces
- C.6 Procedure
 - C.6.1 Conditioning and test atmosphere for dry testing
 - C.6.2 Conditioning and test temperature for wet testing
 - C.6.3 Measurement of test piece dimensions and distance between supports
 - C.6.4 Mounting the test pieces
 - C.6.5 Loading procedure
 - C.6.6 Deflection measurement
 - C.6.7 Other measurements and controls
- C.7 Expression of results
 - C.7.1 Method of calculation
 - C.7.2 Presentation of results
- C.8 Test report

Annex D (normative) Cured-in-place pipes — Determination of long-term flexural strength under dry or wet conditions

- D.1 Principle
- D.2 Apparatus
- D.3 Test pieces
 - D.3.1 Number of test pieces
 - D.3.2 Test piece preparation
 - D.3.3 Conditioning
 - D.3.4 Procedure
- D.4 Test report