

ISO/TS 20656-1:2017-06 (E)

Plastics piping systems - General rules for structural design of glass-reinforced thermosetting plastics (GRP) pipes - Part 1: Buried pipes

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Partial factor method	2
4.1	General	2
4.2	Reliability index,	2
4.3	Sensitivity index,	4
4.4	Quality management	4
5	Partial factors for effects of actions	5
5.1	General	5
5.2	Partial factors for internal pressure	5
5.2.1	General	5
5.2.2	Model uncertainty	6
5.2.3	Uncertainty of pressure	7
5.2.4	Uncertainty of long-term pressure	7
5.2.5	Uncertainty of short-term pressure	8
5.2.6	Uncertainty of thickness and E-modulus	9
5.2.7	Uncertainty of diameter	9
5.2.8	Combined uncertainty and partial factor for effects of pressure	9
5.3	Partial factors for soil and traffic load	12
5.3.1	General	12
5.3.2	Uncertainty of installation parameters	14
5.3.3	Uncertainty of deflection model	14
5.3.4	Uncertainty in traffic load	15
5.3.5	Uncertainty in pipe stiffness	15
5.3.6	Uncertainty of deflection measurement	15
5.3.7	Deflection lag factor	15
5.3.8	Uncertainty of model - Stress and strain calculation	15
5.3.9	Strain assessment through curvature measurement	16
5.3.10	Combined uncertainty of installation parameters	16
5.3.11	Partial factors for effects of bending	16
5.4	Combined effects of pressure and bending	17
6	Partial factors for resistance	17
6.1	Concept	17
6.2	Design value for resistance	18
6.2.1	General	18
6.2.2	Long-term resistance and conversion factor,	18
6.2.3	Short-term resistance	19
Annex A (normative)	Recommended values for pressure safety factors	21
Annex B (normative)	Test data analysis	22
Bibliography		24