DIN EN 15383:2014-02 (E)

Plastics piping systems for drainage and sewerage - Glass-reinforced thermosetting plastics (GRP) based on polyester resin (UP) - Manholes and inspection chambers (includes Amendment A1:2013)

Contents

Page

Foreword 4

1 Scope 5

2 Normative references 5

3 Terms, definitions and symbols 6

4 General requirements 12
4.1 Classification 12
4.1.1 Categories 12
4.1.2 Nominal stiffness 12
4.2 Materials for shaft or chamber units 12
4.2.1 General 12
4.2.2 Elastomers 12
4.2.3 Metals 12
4.3 Reference conditions for testing 13
4.3.1 Temperature 13
4.3.2 Properties of water for testing 13
4.3.3 Loading conditions 13
4.3.4 Preconditioning 13
4.3.5 Measurement of dimensions 13
4.4 Joints 13
4.4.1 Types of joint 13
4.4.2 Length and diameter of joint 13
4.4.3 Flexibility of the jointing system 13
4.4.4 Sealing ring 13
4.4.5 Adhesives 13
4.5 Joint performance 14
4.5.1 Performance requirements 14
4.5.2 Interchangeability 14
4.5.3 Test pieces 15
4.5.4 Number of test pieces for type test purposes 15
4.5.5 Test temperature 15
4.5.6 Flexible joints with elastomeric sealing rings 15
4.5.7 Rigid joints of the wrapped or cemented type 15
4.5.8 Test parameters 15

5 Geometrical characteristics 16
5.1 Diameter, wall thickness and length of GRP-UP shaft and chamber components Dimensional requirement 16
5.2 Size of openings in manholes 16

6 Mechanical characteristics 16
6.1 General 16
6.2 Longitudinal compressive strength 16
6.2.1 Initial longitudinal compressive stress at break 16
6.2.2 Requirements 16
6.3 Longitudinal compressive load 17

6.3.1 General ... 17
6.3.2 Ultimate longitudinal load, Fult ... 17
6.3.3 Manufacturer's declared load for which a manhole or inspection chamber ring is designed, Fj and the permissible force, Fperm, p ... 17

7 Leak-tightness of manholes and inspection chambers and their joints ... 18

8 Minimum required marking ... 18

9 Ancillary products ... 19
9.1 Manhole and inspection chamber tops ... 19
9.2 Manhole steps and ladders ... 19
9.2.1 Location of steps ... 19
9.2.2 Load bearing capacity of installed steps ... 20
9.3 Precast concrete components ... 21

10 Dangerous substances ... 21

11 Manufacturer's installation recommendations ... 21

12 Evaluation of conformity ... 21

Annex A (normative) Determination of the longitudinal compressive properties measured on prism shaped test pieces ... 22

A.1 Scope ... 22
A.2 General ... 22
A.3 Test-pieces ... 22
A.4 Test equipment ... 25
A.5 Test procedure ... 25
A.6 Calculation and expression of results ... 25
A.7 Test report ... 26

Annex B (normative) Determination of the resistance of installed steps to vertical or horizontal loading ... 27

B.1 Scope ... 27
B.2 Principle ... 27
B.3 Apparatus ... 27
B.4 Preparation ... 27
B.5 Procedure ... 28
B.6 Test report ... 29