DIN EN 877:2010-01 (E)

Cast iron pipes and fittings, their joints and accessories for the e vacuation of water from buildings - Requirements, test methods and quality assurance (includes Amendment A1:2006 and Corrigendum AC:2008)

Contents

Page

1 Scope 7

2 Normative references 7

3 Definitions 8

4 Technical requirements 10
4.1 General 10
4.1.1 Introduction 10
4.1.2 Surface condition 10
4.1.3 !Reaction to fire 10
4.1.4 Noise protection 10
4.1.5 !Dangerous substances (regulated substances) 11
4.2 Dimensions 11
4.2.1 Nominal size (DN) 11
4.2.2 External diameters (DE) 11
4.2.3 Wall thickness 12
4.2.4 Internal diameter 12
4.2.5 Ovality 12
4.2.6 Straightness of pipes 12
4.2.7 End faces 12
4.2.8 Length of pipes 12
4.2.9 Lengths of fittings and sealing zones 12
4.2.10 Geometry of fittings and accessories 13
4.2.11 Angles of fittings 13
4.2.12 Access components and traps 14
4.3 Interconnection 14
4.4 Mass 14
4.5 Material characteristics of pipes, fittings and accessories 14
4.5.1 Cast iron 14
4.5.2 Mechanical properties 14
4.6 Coatings for pipes, fittings and accessories 15
4.6.1 General 15
4.6.2 Internal coatings 15
4.6.3 External coatings 15
4.7 Joints 16
4.7.1 General 16
4.7.2 Dimensions 16
4.7.3 Materials 16
4.7.4 Suitability for use 17
4.7.5 Water tightness 17
4.7.6 Air tightness 18
4.7.7 Temperature resistance 18
4.8 Buried systems 18
4.8.1 General 18
4.8.2 Dimensions 18
4.8.3 External coatings 19
4.8.4 Joints 19
4.9 Rainwater systems installed outside buildings 20

4.9.1 General ... 20
4.9.2 Coatings ... 20
4.9.3 Geometry ... 20
4.9.4 Nominal sizes ... 20
4.9.5 Lengths of pipes ... 20
4.9.6 Joints ... 20
4.10 Marking ... 20
4.10.1 General ... 20
4.10.2 Buried systems ... 21
4.10.3 Rainwater systems installed outside buildings ... 21

5 Test methods ... 21
5.1 Surface condition ... 21
5.2 Dimensions ... 21
5.2.1 External diameter (DE) ... 21
5.2.2 Wall thickness ... 21
5.2.3 Internal diameter ... 22
5.2.4 Ovality ... 22
5.2.5 Straightness of pipes ... 22
5.2.6 End faces ... 22
5.2.7 Lengths ... 22
5.2.8 Angle of fittings ... 22
5.3 Mass ... 22
5.4 Tensile strength of pipes and fittings ... 22
5.4.1 General ... 22
5.4.2 Determination of tensile strength (method A) on grey cast iron pipes and fittings ... 23
5.4.3 Determination of tensile strength (method B) of grey cast iron fittings ... 23
5.4.4 Validity of tensile strength tests ... 24
5.5 Brinell hardness ... 24
5.6 Ring crush test for grey cast iron pipes ... 24
5.7 Coatings ... 25
5.7.1 General ... 25
5.7.2 Internal coatings ... 25
5.7.3 External coatings ... 27
5.8 Joints ... 28
5.8.1 Dimensions ... 28
5.8.2 Elastomeric gaskets ... 28
5.8.3 Suitability for use ... 29
5.8.4 Water tightness of joints to positive internal pressure ... 29
5.8.5 Water tightness of joints to positive external pressure ... 31
5.8.6 Air tightness ... 31
5.8.7 Temperature cycling ... 31
5.9 Buried systems ... 32
5.9.1 General ... 32
5.9.2 External coatings ... 32
5.10 Rainwater systems installed outside buildings ... 32
5.11 Marking ... 32

!6 Evaluation of conformity" ... 32

Annex A (informative) Other dimensions for buried systems ... 33

Annex B (informative) Other dimensions for rainwater systems to be installed outside buildings ... 34

Annex C (informative) Field of use for buried pipes and fittings, characteristics of soils, load-bearing capacity ... 35

C.1 Field of use, characteristics of soils ... 35
C.2 Load-bearing capacity ... 35

Annex D !(normative) Evaluation of conformity ... 36

D.1 General 36
D.2 Initial type testing 36
D.3 Factory production control system 38
D.3.1 Organization 38
D.3.2 Control system 38
D.3.3 Document control 39
D.3.4 Process control 40
D.3.5 Inspection and testing 40
D.3.6 Non-conforming products" 40

Annex E (informative) Surveillance by an accredited third party (certification by third party) 41

E.1 General 41
E.2 Factories certified to !EN ISO 9001:2000" 41
E.3 Factories not certified to !EN ISO 9001:2000" 41
E.4 Report by the third party 42
E.5 Retesting 43

Annex F (informative) General information on some product characteristics 44

F.1 Mechanical resistance and stability 44
F.2 Safety in case of fire 44
F.3 Hygiene, health and environment 44
F.4 Noise protection 44

!Annex G (informative) Method of calculation of gross calorific potential of external coatings for the !range", noted PCS!range" ext. coating 45

Annex H (normative) Reaction to fire test (SBI adaptation for testing !a products range") 46

Annex ZA (informative) Clauses of the European Standard addressing essential requirements or other provisions of EU Directives 49

ZA.1 Scope and relevant characteristics 49

ZA.2 Procedure for attestation of conformity of cast iron pipes and fittings, their joints and accessories for the evacuation of water from buildings 51

ZA.2.1 System of attestation of conformity 51

ZA.2.2 Declaration of conformity 52

ZA.3 CE marking and labelling 53

Bibliography" 55