

DIN EN 805:2026-03 (E)

Water supply - Requirements for systems and components outside buildings

Contents		Page
European foreword.....		7
Introduction		8
1	Scope	9
2	Normative references	9
3	Terms and definitions	10
3.1	General.....	10
3.2	System	11
3.3	Components	14
3.4	Diameters.....	16
3.5	Installation	16
3.6	Hydraulic design.....	18
3.7	Structural design	18
4	Requirements for water supply systems.....	19
4.1	Water quality and regulatory framework.....	19
4.1.1	General.....	19
4.1.2	Materials.....	19
4.1.3	Prevention of back flow	19
4.1.4	Stagnation	19
4.1.5	Cross-connections with other systems.....	19
4.1.6	Contaminated soil	20
4.2	Planning horizon for water supply systems.....	20
4.3	Demand for water	20
4.3.1	Water demand estimates	20
4.3.2	Water for firefighting.....	20
4.4	System hazards and security.....	20
5	Service levels	21
6	Rehabilitation.....	21
7	Design.....	21
7.1	Design objectives.....	21
7.2	Peak flow factors	21
7.3	Hydraulic design.....	21
7.3.1	Sizing.....	21
7.3.2	Hydraulic calculations.....	22
7.3.3	Hydraulic roughness value	23
7.3.4	Flow velocities.....	23
7.3.5	Network analysis.....	23
7.3.6	Local mains.....	23
7.3.7	Service pipes	23
7.4	Structural design	24
7.4.1	General.....	24
7.4.2	Internal forces	24
7.4.3	External forces	24
7.4.4	Temperature range	24
7.4.5	Unbalanced thrust	24
7.4.6	Design requirements	24

7.4.7	Hydrostatic design requirements.....	25
7.4.8	Unforeseen ground conditions.....	26
7.5	System layout.....	26
7.5.1	Mains.....	26
7.5.2	Types of system configurations.....	27
7.5.3	Service pipes.....	27
7.5.4	Valves.....	27
7.5.5	Surge limiting equipment.....	28
7.6	Protection against aggressive environment.....	28
7.7	Reservoirs.....	28
7.8	Pumping stations.....	28
7.9	Design service life.....	28
7.10	Documentation.....	29
8	General requirements for products.....	29
8.1	General.....	29
8.2	Materials.....	29
8.3	Dimensions.....	29
8.3.1	Nominal sizes.....	29
8.3.2	Internal diameters.....	29
8.3.3	Length and wall thickness.....	30
8.3.4	Geometry of pipes, fittings, and valves.....	30
8.3.5	Internal surface.....	30
8.3.6	Appearance and soundness.....	30
8.4	Structural design.....	30
8.5	Mechanical requirements.....	31
8.5.1	Circumferential resistance.....	31
8.5.2	Longitudinal resistance.....	31
8.6	Water tightness.....	31
8.7	Joints.....	31
8.7.1	General.....	31
8.7.2	Rigid joints.....	32
8.7.3	Adjustable joints.....	32
8.7.4	Flexible joints.....	32
8.8	Protective measures.....	32
8.9	Durability.....	32
8.10	Test methods.....	32
8.10.1	General.....	32
8.10.2	Measurement of diameter and wall thickness.....	32
8.10.3	Measurement of deviation from straightness of barrel.....	33
8.10.4	Measurement of deviation from squareness of component ends.....	33
8.10.5	Longitudinal resistance test for pipes.....	33
8.10.6	Crushing test for pipes with rigid behaviour.....	33
8.10.7	Ring stiffness test for pipes with flexible behaviour.....	34
8.10.8	Pressure tests.....	34
8.11	Interconnection of products.....	34
8.12	Quality management.....	34
8.13	Marking.....	34
9	Installation.....	35
9.1	General requirements.....	35
9.1.1	Qualifications.....	35
9.1.2	Rules for the execution of construction work.....	35
9.1.3	Transport and storage of pipeline components.....	35
9.1.4	Health and safety.....	35
9.2	Pipe trenches.....	36

9.2.1	Construction of pipe trenches; working space	36
9.2.2	Depth of cover	36
9.2.3	Bedding.....	36
9.3	Installation of pipeline components	37
9.3.1	Distances from underground installations.....	37
9.3.2	Protection of pipelines against contamination	37
9.3.3	Installation of valves, fittings and other components.....	37
9.3.4	Connection to structures	37
9.3.5	Precautions against flotation.....	38
9.4	Pipe joints	38
9.4.1	General requirements	38
9.4.2	Unrestrained joints	38
9.4.3	Restrained joints	38
9.4.4	Welded joints.....	38
9.4.5	Lubricants for joints.....	38
9.5	Protection against corrosion and contamination.....	38
9.5.1	External protection	38
9.5.2	Internal protection	39
9.6	Embedment and main backfill.....	39
9.6.1	General.....	39
9.6.2	Selected material for the embedment	39
9.6.3	Execution of the embedment	39
9.6.4	Execution of the main backfill	40
9.6.5	Control of the degree of compaction	40
9.6.6	Diametral deflection of flexible pipes after installation.....	40
9.7	Records of tests during installation	40
10	Testing of pipelines	40
10.1	General.....	40
10.2	Safety	41
10.2.1	Safety Equipment and clothing	41
10.2.2	Excavations.....	41
10.2.3	Filling and testing.....	41
10.3	Pressure test	41
10.3.1	Preparations	41
10.3.2	Test pressure	42
10.3.3	Installation point for testing equipment	43
10.3.4	Testing at operating pressure with visual inspection	43
10.4	Testing procedure.....	43
10.4.1	General requirements	43
10.4.2	Preliminary test.....	43
10.4.3	Pressure drop test.....	44
10.4.4	Main pressure test	44
10.4.5	Depressurization.....	45
10.4.6	Test evaluation.....	45
10.4.7	Final system test.....	45
10.4.8	Recording test results.....	45
11	Preparation for commissioning.....	45
11.1	General.....	45
11.2	Preparation for disinfection.....	45
11.2.1	General requirements	45
11.2.2	Disinfection equipment	46
11.3	Selection of disinfectant	46
11.4	Disinfection procedures	46
11.4.1	General requirements	46

11.4.2	Static procedure	46
11.4.3	Dynamic procedure	46
11.4.4	Disposal of disinfectant	46
11.5	Microbiological clearance and reporting.....	46
12	Additional requirements	47
13	Operation.....	47
13.1	Inspection and monitoring.....	47
13.2	Maintenance	48
14	Updating of the documentation.....	48
Annex A (informative) Guidance to EN 805.....		49
A.1	General	49
A.2	Pressures	49
A.3	Prevention of back siphonage.....	50
A.4	Water demand estimates.....	50
A.5	Water for firefighting.....	50
A.6	Service objectives	51
A.7	Peak flow factors.....	51
A.8	Sizing	51
A.9	Hydraulic roughness value.....	51
A.10	Flow velocities	52
A.11	Network analysis	52
A.12	Local mains	53
A.13	Mains	53
A.14	Types of system configuration.....	54
A.15	Service pipes.....	55
A.16	Entry and release of air	55
A.17	Draining	56
A.18	Isolation	56
A.19	Hydrants	56
A.20	Protection against aggressive environment.....	56
A.21	Pumping stations	57
A.22	Structural design.....	57
A.23	Testing of non-viscoelastic pipelines (metals, concrete, GRP)	59
A.23.1	General	59
A.23.2	Safety.....	60
A.23.3	Preparation of a test section.....	60
A.23.4	Pressure testing procedure	64
A.23.5	Finalization of testing	69
A.24	Testing of viscoelastic pipelines (PE, PVC-U, PVC-O).....	70

A.24.1 General.....70
A.24.2 Safety70
A.24.3 Preparation of a test section71
A.24.4 Pressure testing procedures.....73
A.24.5 Testing procedure using the contraction method.....76
A.24.6 Testing procedure using the normal method81
A.24.7 Finalization of testing.....85
A.25 Selection of disinfectants85
Bibliography.....86