

# DIN EN 805:2026-03 (E)

## Water supply - Requirements for systems and components outside buildings

---

<b>Contents</b>		<b>Page</b>
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
<b>Annex A (informative) Guidance to EN 805.....</b>		<b>49</b>
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 Safety .....70**  
**A.24.3 Preparation of a test section .....71**  
**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 method .....81**  
**A.24.7 Finalization of testing.....85**  
**A.25 Selection of disinfectants .....85**  
**Bibliography.....86**