DIN ISO 24516-1:2021-02 (E)

Guidelines for the management of assets of water supply and wastewater syst ems - Part 1: Drinking water distribution networks (ISO 24516-1:2016)

Contents

Page

Foreword 16

Introduction 17

1 Scope 19

2 Normative references 19

3 Termsanddefinitions 19

4 Principles aspects of the management of assets 23
4.1 Objectives and requirements 23
4.1.1 Objectives 23
4.1.2 Functional requirements 23
4.1.3 Performance requirements 24
4.2 General aspects 25
4.2.1 General 25
4.2.2 Principal aspects -- Drinking water utilities 25
4.2.3 Principal aspects -- Drinking water systems 26
4.2.4 Integrating the principal aspects 26
4.3 Risks and life cycle aspects 27
4.3.1 Risk 27
4.3.2 Life cycle 28
4.4 Structuring the process for management of assets 28
4.4.1 General 28
4.4.2 Strategies for the management of assets 29
4.4.3 Periods of planning 30
4.4.4 Strategic level activities 31
4.4.5 Tactical level activities 31
4.4.6 Operational level activities 31

5 Investigation 32
5.1 General 32
5.2 Purpose of investigation 32
5.2.1 General 32
5.3 Determine the scope of the investigation 32
5.4 Data collection 32
5.4.1 General 32
5.4.2 Data requirements 33
5.4.3 Inventory data 33
5.4.4 Failure data 34
5.4.5 Further condition data 34
5.5 Data registering and data assignment 36
5.5.1 Data registering 36
5.5.2 Data assignment 36
5.5.3 Geo-referencing 37
5.6 Review of existing information 37
5.7 Inventory update 37
5.8 Types of investigation 38
5.8.1 Hydraulic investigation 38
5.8.2 Structural investigation 38

5.8.3 Operational investigation ... 38
5.9 Review of performance information ... 39
5.10 Planning of investigation ... 40
5.11 Performance testing ... 40

6 Assessment ... 40
6.1 Principles ... 40
6.2 Assessment of the hydraulic performance ... 41
6.3 Assessment of the structural condition ... 41
6.4 Assessment of operational performance ... 41
6.5 Compare with performance requirements ... 41
6.6 Identification of unacceptable impacts ... 42
6.7 Identify causes of performance deficiencies ... 42

7 Planning ... 42
7.1 General ... 42
7.2 Develop integrated solutions ... 43
7.3 Assess solutions ... 43
7.4 Prepare action plan ... 44

8 Implementation ... 44
8.1 General ... 44
8.2 Create/update plan ... 45
8.3 Carry out work ... 45
8.4 Monitor performance ... 45
8.5 Review performance ... 45

9 Operation and maintenance ... 45
9.1 General ... 45
9.2 Operation ... 46
9.3 Maintenance ... 47

10 Rehabilitation ... 47
10.1 General ... 47
10.2 Strategic plan for rehabilitation of physical infrastructure (long-term planning) ... 48
10.2.1 General ... 48
10.2.2 Service life and failure rate development ... 49
10.2.3 Determining the need for rehabilitation of physical infrastructure ... 51
10.2.4 Budgeting ... 52
10.3 Tactical plan for rehabilitation of physical infrastructure (mid-term planning) ... 52
10.3.1 Risk-based evaluation approach ... 52
10.3.2 Individual evaluation and prioritizing ... 53
10.3.3 Coordination with other construction activities ... 54
10.4 Operational plan -- Implementation of rehabilitation measures (short-term planning) ... 54

11 Documentationandefficiencyreview ... 54

Annex A (informative) Further objectives of the management of assets of drinking water networks 56

Annex B (informative) Examples for the assessment of service life and failure rates of pipes ... 58

Annex C (informative) Examples for risk consideration in management of assets ... 60

Bibliography ... 63