ISO 24516-1:2016-11 (E)

Guidelines for the management of assets of water supply and wastewater systems - Part 1: Drinking water distribution networks

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Principles aspects of the management of assets 5
4.1 Objectives and requirements 5
4.1.1 Objectives 5
4.1.2 Functional requirements 5
4.1.3 Performance requirements 6
4.2 General aspects 7
4.2.1 General 7
4.2.2 Principal aspects -- Drinking water utilities 7
4.2.3 Principal aspects -- Drinking water systems 8
4.2.4 Integrating the principal aspects 8
4.3 Risks and life cycle aspects 9
4.3.1 Risk 9
4.3.2 Life cycle 10
4.4 Structuring the process for management of assets 10
4.4.1 General 10
4.4.2 Strategies for the management of assets 11
4.4.3 Periods of planning 12
4.4.4 Strategic level activities 13
4.4.5 Tactical level activities 13
4.4.6 Operational level activities 13

5 Investigation 14
5.1 General 14
5.2 Purpose of investigation 14
5.2.1 General 14
5.3 Determine the scope of the investigation 14
5.4 Data collection 14
5.4.1 General 14
5.4.2 Data requirements 15
5.4.3 Inventory data 15
5.4.4 Failure data 16
5.4.5 Further condition data 16
5.5 Data registering and data assignment 18
5.5.1 Data registering 18
5.5.2 Data assignment 18
5.5.3 Geo-referencing 19
5.6 Review of existing information 19
5.7 Inventory update 19
5.8 Types of investigation 20
5.8.1 Hydraulic investigation 20
5.8.2 Structural investigation 20

5.8.3 Operational investigation 20
5.9 Review of performance information 21
5.10 Planning of investigation 22
5.11 Performance testing 22

6 Assessment 22
6.1 Principles 22
6.2 Assessment of the hydraulic performance 23
6.3 Assessment of the structural condition 23
6.4 Assessment of operational performance 23
6.5 Compare with performance requirements 23
6.6 Identification of unacceptable impacts 24
6.7 Identify causes of performance deficiencies 24

7 Planning 24
7.1 General 24
7.2 Develop integrated solutions 25
7.3 Assess solutions 25
7.4 Prepare action plan 26

8 Implementation 26
8.1 General 26
8.2 Create/update plan 27
8.3 Carry out work 27
8.4 Monitor performance 27
8.5 Review performance 27

9 Operation and maintenance 27
9.1 General 27
9.2 Operation 28
9.3 Maintenance 29

10 Rehabilitation 29
10.1 General 29
10.2 Strategic plan for rehabilitation of physical infrastructure (long-term planning) 30
10.2.1 General 30
10.2.2 Service life and failure rate development 31
10.2.3 Determining the need for rehabilitation of physical infrastructure 33
10.2.4 Budgeting 34
10.3 Tactical plan for rehabilitation of physical infrastructure (mid-term planning) 34
10.3.1 Risk-based evaluation approach 34
10.3.2 Individual evaluation and prioritizing 35
10.3.3 Coordination with other construction activities 36
10.4 Operational plan -- Implementation of rehabilitation measures (short-term planning) 36

11 Documentationandefficiencyreview 36

Annex A (informative) Further objectives of the management of assets of drinking water networks 38

Annex B (informative) Examples for the assessment of service life and failure rates of pipes 40

Annex C (informative) Examples for risk consideration in management of assets 42

Bibliography 45