ISO 15686-1:2000-09 (E)

Buildings and constructed assets - Service life planning - Part 1: General principles

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 1
3.1 Service life and performance 2
3.2 Degradation and exposure 2
3.3 Performance 3
3.4 Parts of buildings 4
3.5 Maintenance activities 5
3.6 Acts and actors 5
3.7 Other terms 6

4 Abbreviated terms 6

5 Process of service life planning 6
5.1 General 6
5.2 Forecasting 7

6 Service life planning: Steps in the design process 8
6.1 The brief 8
6.2 Conceptual and initial design 9
6.3 Detailed design 9
6.4 Specification 10
6.5 Environmental characterization 11
6.6 Initial cost estimates 11
6.7 Maintenance plan 11
6.8 Performance requirements and acceptability 12

7 Service life forecasting 15
7.1 Introduction to forecasting 15
7.2 Issues that can affect forecasting 17
7.3 Types of data used for forecasting 18

8 Service life prediction based on exposure and performance evaluation 19
8.1 Use of predictions based on exposure and performance evaluation 19
8.2 Steps in the prediction process 20

9 Factor method for estimating service life 22
9.1 Outline of the factor method 22
9.2 Use of the factor method 23
9.3 Reference service life 24
9.4 Modifying factors 25
9.5 Assessment of components and assemblies 26

10 Financial and environmental costs over time 28
10.1 General 28
10.2 Life cycle assessment (LCA) 28

10.3 Life cycle costing (LCC) 28

11 Obsolescence, flexibility and reuse 29
11.1 Obsolescence 29
11.2 Types of obsolescence 29
11.3 Minimizing obsolescence 30
11.4 Future use of the building 30
11.5 Demolition and reuse 30

Annex A (informative) Typical financial costs of buildings over time (in UK and USA) 31

Annex B (informative) Examples of critical property assessment of alternative specifications 32

Annex C (informative) Agents affecting the service life of building materials and components 33

Annex D (informative) Examples of requirements 34

Annex E (informative) Method for estimating service life of components using factors to represent agents 35

Annex F (informative) Worked examples of factorial estimates 36

Bibliography 39

Alphabetical index of terms 41