ISO 12494:2001-08 (E)

Atmospheric icing of structures

Contents

Page

Foreword iv

Introduction v

1 Scope 1
1.1 General 1
1.2 Application 1

2 Normative references 2

3 Terms and definitions 2

4 Symbols 3

5 Effects of icing 4
5.1 General 4
5.2 Static ice loads 4
5.3 Wind action on iced structures 4
5.4 Dynamic effects 4
5.5 Damage caused by falling ice 5

6 Fundamentals of atmospheric icing 5
6.1 General 5
6.2 Icing types 6
6.3 Topographic influences 9
6.4 Variation with height above terrain 9

7 Icing on structures 10
7.1 General 10
7.2 Ice classes 10
7.3 Definition of ice class, IC 11
7.4 Glaze 11
7.5 Rime 12
7.6 Rime on lattice structures 18

8 Wind actions on iced structures 19
8.1 General 19
8.2 Single members 20
8.3 Angle of incidence 27
8.4 Lattice structures 28

9 Combination of ice loads and wind actions 29
9.1 General 29
9.2 Combined loads 29

10 Unbalanced ice load on guys 30

11 Falling ice considerations 31

Annex A (informative) Equations used in this International Standard 32

Annex B (informative) Standard measurements for ice actions 35

Annex C (informative) Theoretical modelling of icing 39

Annex D (informative) Climatic estimation of ice classes based on weather data 48

Annex E (informative) Hints on using this International Standard 51

Bibliography 55