DIN EN 13001-2:2022-10 (E)

Crane safety - General design - Part 2: Load actions

Contents

Page

European foreword 3

Introduction 5

1 Scope 6

2 Normative references 6

3 Terms and definitions, symbols and abbreviations 6
3.1 Terms and definitions 6
3.2 Symbols and abbreviations 7

4 Safety requirements and/or measures 11
4.1 General 11
4.2 Loads 11
4.2.1 General 11
4.2.2 Regular loads 13
4.2.3 Occasional loads 22
4.2.4 Exceptional loads 29
4.3 Load combinations 38
4.3.1 General 38
4.3.2 High risk situations 38
4.3.3 Favourable and unfavourable masses 39
4.3.4 Partial safety factors for the mass of the crane 39
4.3.5 Partial safety factors to be applied to loads determined by displacements 40
4.3.6 Partial safety factors to be applied to measured load effects limited by control system 41
4.3.7 Load combinations for the proof of competence 41
4.3.8 The proof of crane stability 47

Annex A (informative) Aerodynamic coefficients 50

A.1 General 50
A.2 Individual members 52
A.3 Plane and spatial lattice structure members 58
A.4 Structural members in multiple arrangement 61

Annex B (informative) Illustration of the types of hoist drives 63

Annex C (informative) Calculation of load factor for indirect lifting force limiter 66

Annex D (informative) Guidance on selection of the risk coefficient 68

Annex E (informative) Selection of a suitable set of crane family standards 70

Annex F (informative) Requirements in Directive 2016/1629/EU 72

Annex G (informative) List of hazards 73

Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered 74

Bibliography 75