

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