

# DIN EN 15011:2022-08 (E)

## Cranes - Bridge and gantry cranes

---

<b>Contents</b>		<b>Page</b>
European foreword .....		5
Introduction .....		6
1	Scope .....	7
2	Normative references .....	7
3	Terms and definitions .....	9
4	List of significant hazards .....	11
5	Safety requirements and/or protective measures .....	15
5.1	General .....	15
5.2	Requirements for strength and stability .....	16
5.2.1	Load actions .....	16
5.2.2	Limit states and proof of competence .....	25
5.2.3	Stability .....	26
5.3	Electrotechnical equipment .....	27
5.3.1	Physical environment and operating conditions .....	27
5.3.2	Electrical supply .....	27
5.3.3	Protection against electric shock by direct contact .....	27
5.3.4	Control circuits and control functions .....	27
5.3.5	Operator interface and mounted control devices .....	28
5.3.6	Power driven motions .....	29
5.3.7	Batteries .....	29
5.4	Non-electrotechnical equipment .....	29
5.4.1	General .....	29
5.4.2	Braking systems .....	29
5.4.3	Hoisting equipment .....	30
5.4.4	Travelling and traversing .....	31
5.4.5	Slewing equipment .....	32
5.4.6	Tolerances .....	33
5.4.7	Gear drives .....	33
5.4.8	Protection against special hazards .....	34
5.5	Limiting and indicating devices .....	34
5.5.1	Rated capacity limiters .....	34
5.5.2	Indicators .....	36
5.5.3	Motion limiters .....	36
5.5.4	Performance limiters .....	37
5.6	Man-machine interface .....	38
5.6.1	Controls and control stations .....	38
5.6.2	Guarding and access .....	38
5.6.3	Lighting .....	39
5.6.4	Reduction of noise by design .....	40
5.7	Equipment for warning .....	41
5.7.1	General .....	41
5.7.2	Warning markings .....	41
5.7.3	Warning lights .....	41
5.7.4	Cableless control .....	41
5.7.5	Acoustic warning means .....	42
5.7.6	Location of the visual display unit .....	42

<b>6</b>	<b>Verification of safety requirements and/or protective measures .....</b>	<b>42</b>
<b>6.1</b>	<b>General .....</b>	<b>42</b>
<b>6.2</b>	<b>Types of verification .....</b>	<b>42</b>
<b>6.3</b>	<b>Fitness for purpose testing .....</b>	<b>45</b>
<b>6.3.1</b>	<b>General .....</b>	<b>45</b>
<b>6.3.2</b>	<b>Tests .....</b>	<b>45</b>
<b>7</b>	<b>Information for use .....</b>	<b>47</b>
<b>7.1</b>	<b>General .....</b>	<b>47</b>
<b>7.2</b>	<b>Operator's manual .....</b>	<b>48</b>
<b>7.3</b>	<b>User's manual .....</b>	<b>48</b>
<b>7.3.1</b>	<b>General .....</b>	<b>48</b>
<b>7.3.2</b>	<b>Instructions for installation .....</b>	<b>49</b>
<b>7.3.3</b>	<b>Instructions for maintenance .....</b>	<b>49</b>
<b>7.4</b>	<b>Marking of rated capacities .....</b>	<b>50</b>
<b>Annex A (informative)</b>	<b>Guidance for specifying the operating duty in accordance with EN 13001-1:2015 .....</b>	<b>52</b>
<b>Annex B (informative)</b>	<b>Guidance for specifying the classes P of average number of accelerations in accordance with EN 13001-1:2015 .....</b>	<b>60</b>
<b>Annex C (informative)</b>	<b>Calculation of dynamic coefficient 2 .....</b>	<b>61</b>
<b>Annex D (informative)</b>	<b>Loads caused by skewing .....</b>	<b>64</b>
<b>Annex E (informative)</b>	<b>Local stresses in wheel supporting flanges .....</b>	<b>71</b>
<b>Annex F (normative)</b>	<b>Noise test code .....</b>	<b>76</b>
<b>Annex G (informative)</b>	<b>Actions on crane supporting structures induced by cranes .....</b>	<b>85</b>
<b>Annex H (informative)</b>	<b>Selection of a suitable set of crane standards for a given application .....</b>	<b>88</b>
<b>Annex ZA (informative)</b>	<b>Relationship between this European standard and the essential requirements of Directive 2006/42/EC aimed to be covered .....</b>	<b>90</b>
<b>Bibliography</b>	<b>.....</b>	<b>93</b>