

BS ISO 17842-1:2015



BSI Standards Publication

Safety of amusement rides and amusement devices

Part 1: Design and manufacture

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National foreword

This British Standard is the UK implementation of ISO 17842-1:2015.

The UK participation in its preparation was entrusted to Technical Committee MCE/3/4, Fairground and amusement park machinery and structures - Safety.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Safety of amusement rides and amusement devices —

Part 1: Design and manufacture

*Sécurité des manèges et des dispositifs de divertissement —
Partie 1: Conception et fabrication*



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Contents

Page

Foreword	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	5
4 Requirements for design analysis and examination	9
4.1 Design documents	9
4.1.1 General	9
4.1.2 Design risk assessment	9
4.1.3 Description of design and operation	9
4.1.4 Design and manufacturing drawings	9
4.1.5 Principles of analysis	10
4.2 Selection of materials	11
4.2.1 General	11
4.2.2 Recommended steels	11
4.2.3 Aluminium alloy	11
4.2.4 Timber	11
4.2.5 Plastic composites	11
4.2.6 Concrete	12
4.2.7 Fasteners for structural components	12
4.2.8 Standards relating to ropes, chains, safety devices, connectors and adapters	12
4.3 Design loads	13
4.3.1 General	13
4.3.2 Permanent actions	13
4.3.3 Variable actions	13
4.3.4 Seismic forces	18
4.3.5 Applicable coefficients	19
4.3.6 Load combinations	19
4.4 Structural analysis — Principles	20
4.4.1 General	20
4.4.2 Analysis principles for various types of devices	21
4.4.3 Other railways with track-bound vehicles	26
4.4.4 Grandstands	27
4.5 Verification of stability	27
4.5.1 General	27
4.5.2 Overturning	27
4.5.3 Sliding	28
4.5.4 Lifting	29
4.6 Ground anchorages	29
4.6.1 General	29
4.6.2 Design load bearing capacity of weight anchors	29
4.6.3 Design load bearing capacity of rod anchors	29
4.6.4 Testing of anchors (Numbering)	31
4.6.5 Calculation of loads on anchors	32
4.6.6 Further requirements	32
4.6.7 Ground support for packing	33
4.7 Verification of strength	33
4.7.1 General	33
4.7.2 Predominantly static stress	34
4.7.3 Fluctuating stress	34
4.7.4 Bolts	37
4.7.5 Ropes, chains, safety devices, connectors and adapters	38
4.8 Structural design and construction	40
4.8.1 Arrangement, accessibility	40

4.8.2	Locking and safety devices for fasteners	40
4.8.3	Joints intended for regular dismantling	41
4.8.4	Designing of components subject to fluctuating loads	41
4.8.5	Supports	41
4.8.6	Central masts	41
4.8.7	Prevention of corrosion and rot	41
5	Requirements for design and manufacture of rides and structures	41
5.1	Risk reduction by prevailing design and safety measures	41
5.1.1	General	41
5.1.2	Risk assessment	42
5.1.3	Risk reduction for platforms, ramps, floors, stairs and walkways	43
5.1.4	Risk reduction by the use of railings, fencing and guarding	47
5.1.5	Guarding of hazardous machinery	51
5.1.6	Risk reduction in the case of access and egress	51
5.1.7	Risk reduction for passenger units	52
5.1.8	Requirements for special provisions	63
5.2	Supplementary safety requirements for various types of amusement rides and devices	64
5.2.1	Amusement rides with vertical axis	64
5.2.2	Amusement rides with horizontal axis	65
5.2.3	Rail-guided channel or track-bound devices	67
5.2.4	Dodgem/bumper cars	69
5.2.5	Speedways/go-karts	73
5.2.6	Mini-motorbikes for children	74
5.2.7	Boat rides	75
5.2.8	Flume rides	75
5.2.9	Helter skelters, slides, etc.	77
5.2.10	Side shows, booths, win-a-prize and sales stands, mazes, halls of mirrors, funhouses, labyrinths, hammers, ring the bell and similar	77
5.2.11	Shooting stands and trailers, shooting devices	80
5.3	Mechanical systems	81
5.3.1	Hydraulic and pneumatic devices	81
5.3.2	Lifting and elevating units being integral part of an amusement ride	83
5.4	Manufacture and supply	86
5.4.1	Manufacturer	86
5.4.2	Quality assurance — Quality plan	86
5.4.3	Manufacturing process	87
5.4.4	Safety precautions to be taken by the manufacturer	89
5.4.5	Electrical installations	89
5.5	Supply	89
5.5.1	Manuals	89
5.5.2	Special information	91
5.5.3	Drawings and diagrams	91
5.6	Design documentation	91
5.6.1	General	91
5.6.2	Description of installation and technical specification/information	92
5.7	Device log	92
5.7.1	General	92
5.7.2	Content	93
5.8	Official technical dossier	94
5.8.1	General	94
5.8.2	Content	94
5.8.3	Identification marking	94
	Annex A (informative) Fatigue analysis	96
	Annex B (normative) Electrical equipment and control systems	104
	Annex C (informative) Control systems — Best practices	115
	Annex D (informative) Guidance on design of passenger containment	117

Annex E (informative) Device log for an amusement device	122
Annex F (informative) List of hazards	143
Annex G (informative) Guest behaviour	147
Annex H (informative) Limited accessibility to amusement devices	152
Annex I (informative) Safety envelope for passengers	155
Bibliography	158

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 254, *Safety of amusement rides and amusement devices*.

ISO 17842 consists of the following parts, under the general title *Safety of amusement rides and amusement devices*:

- *Part 1: Design and manufacture*
- *Part 2: Operation and use*
- *Part 3: Requirements for inspection during design, manufacture, operation and use*

Safety of amusement rides and amusement devices —

Part 1: Design and manufacture

1 Scope

This part of ISO 17842 specifies the minimum requirements necessary to ensure the safe design, calculation, manufacture, and installation of the following: mobile, temporary or permanently installed machinery and structures, e.g. roundabouts, swings, boats, Ferris wheels, roller coasters, chutes, grandstands, membrane or textile structures, booths, stages, side shows, and structures for artistic aerial displays. The above items, hereafter called *amusement devices* or simply “devices”, are intended to be installed both repeatedly without degradation or loss of integrity, and temporarily or permanently in fairgrounds and amusement parks or any other locations. Fixed grandstands, construction site installations, scaffolding, removable agricultural structures and simple coin operated children’s amusement devices intended for up to 3 children are not covered by this document.

Nevertheless this document can be used in the design of any similar structural or passenger-carrying device not explicitly mentioned herein.

Existing national rules on workers’ safety are not concerned by this document.

This document is applicable to amusement devices and major modifications of amusement devices and rides manufactured after the effective date of its publication.

ISO 17842-3 contains requirements for inspection during design, manufacture, operation and use.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 288-9, *Specification and approval of welding procedures for metallic materials — Part 9: Welding procedure test for pipeline welding on land and offshore site butt welding of transmission pipelines*

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

ISO 1141, *Fibre ropes — Polyester — 3-, 4-, 8- and 12-strand ropes*

ISO 1181, *Fibre ropes — Manila and sisal — 3-, 4- and 8-strand ropes*

ISO 1346, *Fibre ropes — Polypropylene split film, monofilament and multifilament (PP2) and polypropylene high-tenacity multifilament (PP3) — 3-, 4-, 8- and 12-strand ropes*

ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties*

ISO 3834-1, *Quality requirements for fusion welding of metallic materials — Part 1: Criteria for the selection of the appropriate level of quality requirements*

ISO 3834-3, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements*

ISO 4014, *Hexagon head bolts — Product grades A and B*

ISO 4016, *Hexagon head bolts — Product grade C*

ISO 4017, *Fasteners — Hexagon head screws — Product grades A and B*

ISO 4018, *Hexagon head screws — Product grade C*

ISO 4032, *Hexagon regular nuts (style 1) — Product grades A and B*

ISO 4034, *Hexagon regular nuts (style 1) — Product grade C*

ISO 4413, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 4414, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

ISO 5817:2014, *Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections*

ISO 7250 (all parts), *Basic human body measurements for technological design*

ISO 9554, *Fibre ropes — General specifications*

ISO 9606-1, *Qualification testing of welders — Fusion welding — Part 1: Steels*

ISO 9606-2, *Qualification test of welders — Fusion welding — Part 2: Aluminium and aluminium alloys*

ISO 9692-1, *Welding and allied processes — Types of joint preparation — Part 1: Manual metal arc welding, gas-shielded metal arc welding, gas welding, TIG welding and beam welding of steels*

ISO 9692-2, *Welding and allied processes — Joint preparation — Part 2: Submerged arc welding of steels*

ISO 9712:2012, *Non-destructive testing — Qualification and certification of NDT personnel*

ISO 10042:2005, *Welding — Arc-welded joints in aluminium and its alloys — Quality levels for imperfections. Corrected by ISO 10042:2005/Cor. 1:2006*

ISO 10325, *Fibre ropes — High modulus polyethylene — 8-strand braided ropes, 12-strand braided ropes and covered ropes*

ISO 10474:2013, *Steel and steel products — Inspection documents*

ISO 10547, *Polyester fibre ropes — Double braid construction*

ISO 10554, *Polyamide fibre ropes — Double braid construction*

ISO 10556, *Fibre ropes of polyester/polyolefin dual fibres*

ISO 10572, *Mixed polyolefin fibre ropes*

ISO 11666, *Non-destructive testing of welds — Ultrasonic testing — Acceptance levels*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13849-2, *Safety of machinery — Safety-related parts of control systems — Part 2: Validation*

ISO 13857:2008, *Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs*

ISO 14118, *Safety of machinery — Prevention of unexpected start-up*

ISO 14119, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*