



British Standards for Machinery Guarding



The below provides a list of standards that are relevant to machinery safety. Not all standards are applicable in every case, and there are specific 'Type C' standards that will be relevant to defined machinery types, but which are excluded from this list for reason of clarity. Please see BSI website to track any of these. Additionally, the European Commission maintains a list of standards that are in line with the Machinery Directive 2006/42/EC and therefore provide a presumption of conformity to the relevant essential health and safety requirements of the Directive.

In addition to current standards, the list below includes published documents of standards that have been published in the form of a draft for public comment. While these do not carry the same weight as Current standards, they may prove to be worthy to organisations aiming to deliver quality practice.

Current Machine Guarding British Standards

BS 4163:2007	Health and safety for design and technology in schools and similar establishments. Code of practice.
BS 6753:1986	Specification for shotbolts (solenoid operated) for guarding machinery.
BS EN 547-1:1996 +A1:2008	Safety of machinery. Human body measurements. Principles for determining the dimensions required for openings for whole body access into machinery.
BS EN 547-3:1996 +A1:2008	Safety of machinery. Human body measurements. Anthropometric data.
BS EN 574:1996 +A1:2008	Safety of machinery. Two-hand control devices. Functional aspects. Principles for design.
BS EN 614-1:2006 +A1:2009	Safety of machinery. Ergonomic design principles. Terminology and general principles.
BS EN 614-2:2000	Safety of machinery. Ergonomic design principles. Interactions

+A1:2008	between the design of machinery and work tasks.
BS EN 626-1:1994 +A1:2008	Safety of machinery. Reduction of risks to health from hazardous substances emitted by machinery. Principles and specifications for machinery manufacturers.
BS EN 626-2:1996 +A1:2008	Safety of machinery. Reduction of risk to health from hazardous substances emitted by machinery. Methodology leading to verification procedures
BS EN 842:1996 +A1:2008	Safety of machinery. Visual danger signals. General requirements, design and testing.
BS EN 894-1:1997 +A1:2008	Safety of machinery. Ergonomics requirements for the design of displays and control actuators. General principles for human interactions with displays and control actuators.
BS EN 894-2:1997 +A1:2008	Safety of machinery. Ergonomics requirements for the design of displays and control actuators. Displays.
BS EN 894-3:2000 +A1:2008	Safety of machinery. Ergonomics requirements for the design of displays and control actuators. Control actuators.
BS EN 894-4:2010	Safety of machinery. Ergonomics requirements for design of displays and control actuators. Location and arrangement of displays and control actuators.
BS EN ISO 14120:2015	Safety of machinery. Guards. General requirements for the design and construction of fixed and movable guards.
BS EN 981:1996 +A1:2008	Safety of machinery. System of auditory and visual danger and information signals.
BS EN 1005-1:2001 +A1:2008	Safety of machinery. Human physical performance. Terms and definitions.
BS EN 1005-2:2003 +A1:2008	Safety of machinery. Human physical performance. Manual handling of machinery and component parts of machinery
BS EN 1005-3:2002 +A1:2008	Safety of machinery. Human physical performance. Recommended force limits for machinery operation.
BS EN 1005-4:2005	Safety of machinery. Human physical performance. Evaluation of

+A1:2008	working postures and movements in relation of machinery.
BS EN 1005-5:2007	Safety of machinery. Human physical performance. Risk assessment for repetitive handling at high frequency.
BS EN 1037:1995 +A1:2008	Safety of machinery. Prevention of unexpected start-up.
BS EN 1837:1999 +A1:2009	Safety of machinery. Integral lighting of machines.
BS EN 12198-1:2000 +A1:2008	Safety of machinery. Assessment and reduction of risks arising from radiation emitted by machinery. General principles.
BS EN 12198-2:2002 +A1:2008	Safety of machinery. Assessment and reduction of risks arising from radiation emitted by machinery. Radiation emission measurement procedure.
BS EN 12198-3:2002 +A1:2008	Safety of machinery. Assessment and reduction of risks arising from radiation emitted by machinery. Reduction of radiation by attenuation or screening.
BS EN 13861:2011	Safety of machinery. Guidance for the application of ergonomics standards in the design of machinery.
BS EN 61310-1:2008	Safety of machinery. Indication, marking and actuation. Requirements for visual, auditory and tactile signals.
BS EN 61310-2:2008	Safety of machinery. Indication, marking and actuation. Requirements for marking.
BS EN 61310-3:2008	Safety of machinery. Indication, marking and actuation. Requirements for the location and operation of actuators.
BS EN ISO 3744:2010	Acoustics. Determination of sound power levels and sound energy levels of noise sources using sound pressure. Engineering methods for an essentially free field over a reflecting plane.
BS EN ISO 3746:2010	Acoustics. Determination of sound power levels and sound energy levels of noise source using sound pressure. Survey method using an enveloping measurement surface over a reflecting plane.



BS EN ISO 4413:2010	Hydraulic fluid power. General rules and safety requirements for systems and their components.
BS EN ISO 4414:2010	Pneumatic fluid power. General rules and safety requirements for systems and their components.
BS EN ISO 4871:2009	Acoustic. Declaration and verification of noise emission values of machinery and equipment.
BS EN ISO 7731:2008	Ergonomics. Danger signals for public and work areas. Auditory danger signals.
BS EN ISO 9614-1:2009	Acoustic. Determination of sound power levels of noise sources using sound intensity. Measurement at discrete points.
BS EN ISO 9614-2:1997	Acoustic. Determination of sound power levels of noise sources using sound intensity. Measurement by scanning.
BS EN ISO 9614-3:2009	Acoustic. Determination of sound power levels of noise sources using sound intensity. Precision method for measurement by scanning.
BS EN ISO 11202:2010	Acoustic. Noise emitted by machinery and equipment. Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections.
BS EN ISO 11204:2010	Acoustic. Noise emitted by machinery and equipment. Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections.
BS EN ISO 11688-1:2009	Acoustic. Recommended practice for the design of low-noise machinery and equipment. Planning.
BS EN ISO/TR 11688-2:2001	Acoustic. Recommended practice for the design of low-noise machinery and equipment. Introduction to the physics of low-noise design.
BS EN ISO 12100:2010	Safety of machinery. General principles for design. Risk assessment and risk reduction.

BS EN ISO 13732-1:2008	Ergonomics of the thermal environment. Methods for the assessment of human responses to contact with surfaces. Hot surfaces.
EN ISO 13732-3:2008	Ergonomics of the thermal environment. Methods for the assessment of human responses to contact with surfaces. Cold surfaces.
BS EN ISO 13849-1:2008	Safety of machinery. Safety related parts of control systems. General principles for design.
BS EN ISO 13849-2:2012	Safety of machinery. Safety-related parts of control systems. Validation.
BS EN ISO 13850	Safety of machinery. Emergency stop. Principles for design.
BS EN ISO 13855:2010	Safety of machinery. Positioning of safeguards with respect to the approach speeds of parts of the human body.
BS EN ISO 13856-1:2013	Safety of machinery. Pressure-sensitive protective devices. General principles for design and testing of pressure-sensitive mats and pressure-sensitive floors.
BS EN ISO 13856-2:2013	Safety of machinery. Pressure-sensitive protective devices. General principles for design and testing of pressure-sensitive edges and pressure-sensitive bars.
BS EN ISO 13856-3:2013	Safety of machinery. Pressure-sensitive protective devices. General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices.
BS EN ISO 13857:2008	Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs.
BS EN ISO 14119:2013	Safety of machinery. Interlocking devices associated with guards. Principles for design and selection.
BS EN ISO 14122-1:2001 +A1:2010	Safety of machinery. Permanent means of access to machinery. Choice of a fixed means of access between two levels.
BS EN ISO 14122-2:2001 +A1:2010	Safety of machinery. Permanent means of access to machinery. Working platforms and walkways.



BS EN ISO 14122-3:2001 +A1:2010	Safety of machinery. Permanent means of access to machinery. Stairways, stepladders and guard-rails.
BS EN ISO 14738:2008	Safety of machinery. Anthropometric requirements for the design of workstations at machinery. Anthropometric requirements for the design of workstations at machinery.
BS EN 60204-1:2006 +A1:2009 (IEC 60204-1:2005 Modified)	Safety of machinery. Electrical equipment of machines. General requirements.
BS EN 61496-1:2004 +A1:2008	Safety of machinery. Electro-sensitive protective equipment. General requirements and tests.
BS EN 61496-3:2001	Safety of machinery. Electro-sensitive protective equipment. Particular requirements for active opto-electronic protective devices responsive to diffuse reflection (AOPDDR).
BS EN 62061:2005 +A1:2013	Safety of machinery. Functional safety of safety-related electrical, electronic and programmable electronic control systems.
PD ISO/TR 18569:2004	Safety of machinery. Guidelines for the understanding and use of safety of machinery standards.
PD ISO/TR 23849:2010 IEC/TR 62061-1:2010	Guidance on the application of ISO 13849-1 and IEC 62061 in the design of safety-related control systems for machinery.
DD CLC/TS 61496-2:2006	Safety of machinery. Electro-sensitive protective equipment. Particular requirements for equipment using active opto-electronic protective devices (AOPD).
DD CLC/TS 61496-3:2008	Safety of machinery. Electronic-sensitive protective equipment. Particular requirements for active opto-electronic protective devices responsive to diffuse reflection (AOPDDR).
PD IEC/TR 61496-4:2007	Safety of machinery. Electro-sensitive protective equipment. Particular requirements for equipment using vision based protective devices (VBPD).
DD CLC/TS 62046:2008	Safety of machinery. Application of protective equipment to detect the presence of persons.



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Food processing machinery. Basic concepts. Part 1. Safety requirements. (BS EN 1672-1, Draft for Public Comment).

In addition to the general 'Type A' and 'Type B' standards there are also many 'Type C' standards that are applicable to particular classes of machinery as shown in the following table (NB this list is not exhaustive).

BS EN 415-4:1998	Safety of packaging machines. Palletizers and depalletizers.
BS EN 618:2002 +A1:2010	Continuous handling equipment and systems. Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors.
BS EN 619:2002+A1:2010	Continuous handling equipment and systems. Safety and EMC requirements for equipment for mechanical handling of unit loads.
BS EN 620:2002 +A1:2010	Continuous handling equipment and systems. Safety and EMC requirements for fixed belt conveyors for bulk materials.
BS EN 1034-1:2000 +A1:2010	Safety of machinery. Safety requirements for the design and construction of paper-making and finishing machines. Common requirements.
BS 4531:1986	Specification for portable and mobile troughed belt conveyors.
BS 5667-1:1979(ISO 1819-1977)	Specification for continuous mechanical handling equipment - safety requirements. General.
BS EN 12417:2001 +A2:2009	Machine tools. Safety. Machining centres.
BS EN 12717:2001 +A1:2009	Safety of machine tools. Drilling machines.
BS EN 13128:2001 +A2:2009	Safety of machine tools. Milling machines (including boring machines).
BS EN 14070:2003 +A1:2009	Safety of machine tools - Transfer and special-purpose machines.
BS EN ISO 10218-1:2011	Robots and robotic devices. Safety requirements for industrial



robots. Robots.

BS EN ISO 10218-2:2011 Robots and robotic devices. Safety requirements for industrial robots. Robots systems and integration.

BS EN ISO 11161:2007+A1:2010 Safety of machinery. Integrated manufacturing systems. Basic requirements.

BS EN ISO 11553-1:2008 Safety of machinery. Laser processing machines. General safety requirements.

