

C Standards-overview

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The following information applies only to the European machinery directive. The main requirement of the European machinery directive is, that there is no risk for persons (and, where appropriate, pets and goods) health and safety if the machine is properly installed, maintained and used according to the regulations. Machines have to be conform with their machine type corresponding basic-, safety- and health requirement, according to the 1st appendix of the European machinery directive. The term "used according to the regulations" is defined in DIN EN ISO 12100 part 1. The complete 1st appendix of the European machinery directive is attached to DIN EN ISO 12100 as appendix A.

The 1st appendix of the European machinery directive contains the requirements for a machine safety concept. For the not abolished dangers have to be made the necessary protection measures.

Only for the not abolished residual risks, a fallback on specialized training and protective equipment are allowed.



1.1 Standards-types

The European safety standards are hierarchically structured. There are the standards type A, B1, B2 and C.

Type A - Standards (basic safety standards)

They include basic ideas, design principles and general aspects for devices and systems.

Examples:

DIN EN ISO 12100 1/2	Safety of machines – basic ideas, general design principles
EN 1050	Safety of machines – risk evaluation principles no longer valid, replaced by EN ISO 14121-1
EN ISO 14121-1	Safety of machines – part 1: Principles, replacement for EN 1050
EN/IEC 61508	Functional safety of safety-related electrical, electronical and programmable electronical systems.

Type B - Standards (safety group standards)

Type B standards refer to safety aspects or safety-critical setups. They can be used for a whole series of machines, devices and systems.

Type B1 - Standards

Type B1 standards refer to specific safety aspects (e.g. safety distance, surface temperature, noise).

Examples:

EN ISO 13849-1	Safety of machines – safety-related parts of controls, part 1: General design principles
EN 954	Safety-related parts of control systems, transitional period: Valid until November 2009
EN 62061	Safety of machines – functional safety of safety-related electrical, electronical and programmable electronical control systems
EN 60204-1	Electrical equipment of machines

Type B2 - Standards

They treat safety-critical set-ups (e.g. two-hand controls, interlocks, safety mats, break safety setups)

Examples:

EN 61496-1	Electro-sensitive protective equipment
EN 574	Two-hand control systems
EN 13850	E-stop setups
EN 1088	Interlock setups in connection with interlocking safety door systems
EN 1760-1/2	Safety mats

Type C – Standards (Machine safety standards)

They include detailed safety requirements for a single machine or a group of machines.

Examples:

EN 415-4	Palletizing machines, packaging machines
EN 201	Plastic- and injection die moulding machines
EN 775	Industrial robots
EN 81-1	Elevators
EN 81-3	Elevators for small-sized goods
EN 115	Escalators and moving walkways
EN 692	Mechanical presses
EN 693	Hydraulical presses
EN12415	Automatic lathe

Other examples of product standards:

EN 8901	Safety technological requirements for cooling devices and heat pumps
EN 474-1	Earth-moving machines
EN 1889-1	Mobile machines, locomotives
EN 791	Drilling machines

EN 815	Tunnel drilling machines
EN ISO 11111	Textile machines
EN 60204-31	Electrical equipment, industrial machines

Standards for field bus systems

They include requirements and standards for field bus systems.

Examples:

EN 61158	"Field bus for industrial guide-systems" Interbus
EN 50170	"Universal field communication systems" Profibus
EN 50295	"Low voltage switching devices– control– and device-interface-systems-Actuator Sensor Interface (AS-i)"
EN 50254	Communication subsystem with a high efficiency for small data packages
DIN EN 61158-2	Field bus for industrial guide-systems

At the following publishing companies the standards can be ordered:

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