

CE Marking of Machinery

- Machinery Directive 2006/42/EC -



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New!

Directive 2006/42/EC
of the European
Parliament and the
Council of 17 May 2006
on Machinery and
amending Directive
95/16/EG (Recast)

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Valid from 29.12.2009

Valid!

Directive 98/37/EC
of the European
Parliament and the
Council of 22 June
1998 on the
approximation of the
laws of the Member
States relating to
machinery

(codified version)

published EU Official Journal
No. L 207 of 23.07.1998

No more valid!

Directive 89/392/EEC
of the Council of
14 June 1989 on the
approximation of the
laws of the Member
States relating to
machinery

Amended by

- 91/368/EEC
- 93/44/EEC
- 93/68/EEC

- Manufacturers of Machinery
 - Their representatives in the European Union
 - Importers
 - Trade companies
- ⇒ **The responsible for placing the product on the EU market**

What means “placing on the market”:

A product is placed on the Community market when it is made available for the first time. This is considered to take place when a product is transferred from the stage of manufacture with the intention of distribution or use on the Community market.

What is a Machine ?

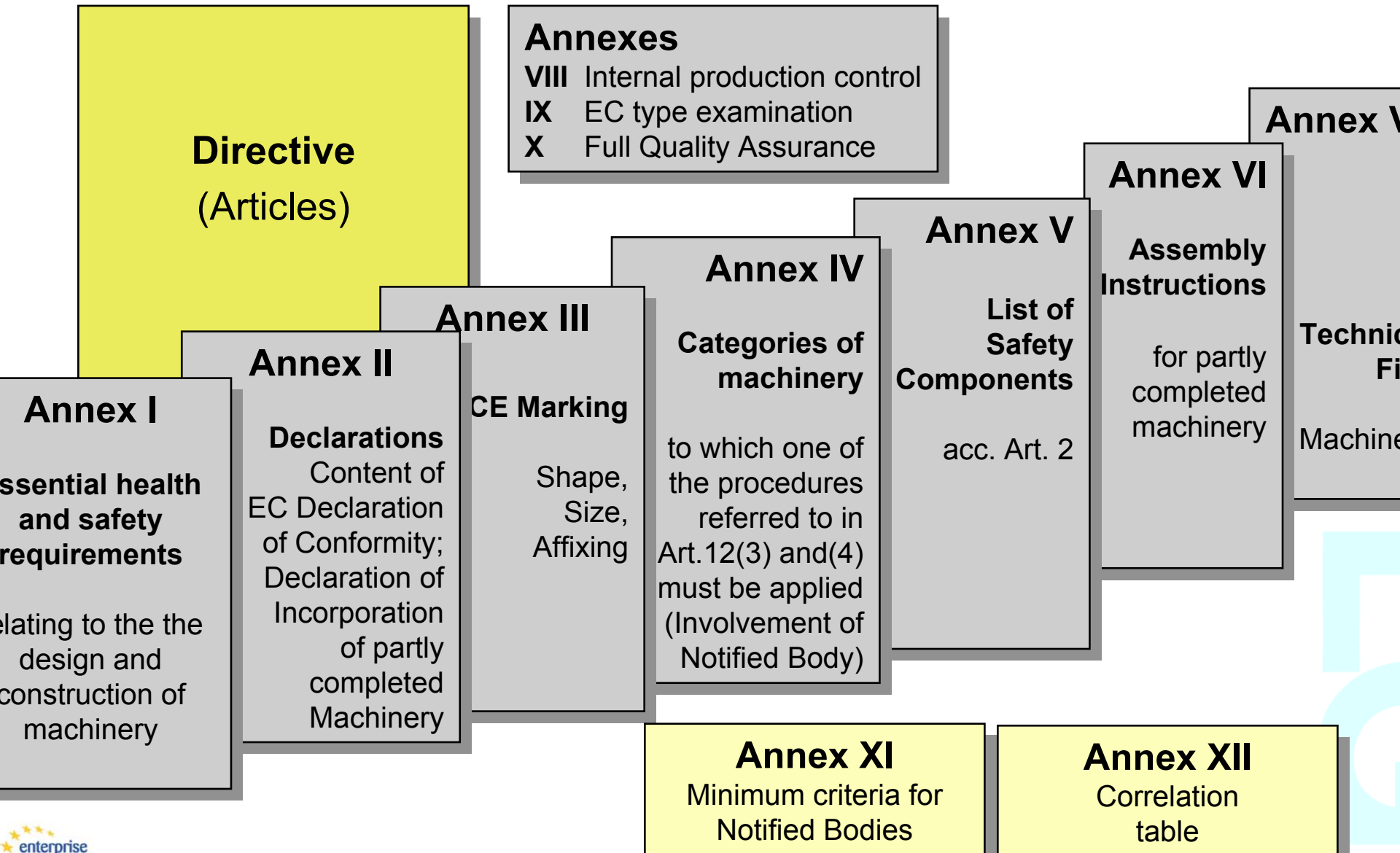
- an assembly, fitted with or intended to be fitted with a drive system
- consisting of linked parts or components, at least one of which moves and which are joined together for a specific application,
- an assembly ready to be installed and able to function as it stands only if mounted on a means of transport, or installed in a building or a structure
- assemblies of machinery which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole (complex plant)
- machinery intended for lifting loads and whose only power source is directly applied human effort
- ‘interchangeable equipment’ changing function or attributing a new function (no spare part, no tool)
- safety components, which are placed on the market separately, e.g. Emergency-Stop-Switches, etc. (List in Annex V)
- lifting accessory not directly attached to the lifting machinery, allowing the load to be held, incl. chains, ropes and webbing
- removable mechanical transmission device
- partly completed machinery

- equipment for use in fairgrounds and/or amusement parks;
- machinery for nuclear purposes;
- weapons, including firearms;
- machinery specially designed and constructed for military or police purposes
- machinery specially designed and constructed for research purposes for temporary use in laboratories
- mine winding gear
- seagoing vessels and mobile offshore units
- machinery intended to move performers during artistic performances

- High-voltage electrical equipment:
 - switch gear and control gear,
 - transformers
- Means of Transport
(agricultural and forestry tractors, vehicles and their trailers, motor bikes, Airplanes, boats, railways)
- electrical and electronic products falling under LVD 2006/95/EC
 - household appliances intended for domestic use,
 - audio and video equipment,
 - information technology equipment,
 - ordinary office machinery,
 - low-voltage switchgear and control gear,
 - electric motors;

(Exact definitions see Art. 1 Abs. 2 of the Directive)

Structure of Machinery Directive



- Machinery under the scope of MD must comply with the essential health and safety requirements of **Annex I** of the Directive
 - concerning **design and construction**
- The manufacturer of machinery or his authorised representative must ensure that a **risk assessment** is carried out in order to determine the health and safety requirements which apply to the machinery. The machinery must then be designed and constructed taking into account the results of the risk assessment.

(Have a look at Annex 1)

Annex IV Machines

1. **Circular saws** (single- or multi-blade) for working with wood and material with similar physical characteristics or for working with meat and material with similar physical characteristics, of the following types:
 - 1.1. sawing machinery with fixed blade(s) during cutting, having a fixed bed or support with manual feed of the work piece or with a demountable power feed;
 - 1.2. sawing machinery with fixed blade(s) during cutting, having a manually operated reciprocating saw-bench or carriage;
 - 1.3. sawing machinery with fixed blade(s) during cutting, having a built-in mechanical feed device for the work pieces, with manual loading and/or unloading;
 - 1.4. sawing machinery with movable blade(s) during cutting, having mechanical movement of the blade, with manual loading and/or unloading.
2. Hand-fed surface planing **machinery for woodworking**.
3. Thicknessers for one-side dressing having a built-in mechanical feed device, with manual loading and/or unloading for woodworking.
4. **Band-saws** with manual loading and/or unloading for working with wood and material with similar physical characteristics or for working with meat and material with similar physical characteristics, of the following types:
 - 4.1. sawing machinery with fixed blade(s) during cutting, having a fixed or reciprocating-movement bed or support for the work piece;
 - 4.2. sawing machinery with blade(s) assembled on a carriage with reciprocating motion.

5. Combined machinery of the types referred to in points 1 to 4 and in point 7 for working with wood and material with similar physical characteristics.
6. Hand-fed tenoning machinery with several tool holders for woodworking.
7. Hand-fed vertical spindle moulding machinery for working with wood and material with similar physical characteristics.
8. Portable chainsaws for woodworking.
9. Presses, including press-brakes, for the cold working of metals, with manual loading and/or unloading, whose movable working parts may have a travel exceeding 6 mm and a speed exceeding 30 mm/s.
10. Injection or compression plastics-moulding machinery with manual loading or unloading.
11. Injection or compression rubber-moulding machinery with manual loading or unloading.
12. Machinery for underground working of the following types:
 - 12.1. locomotives and brake-vans;
 - 12.2. hydraulic-powered roof supports.

Annex IV Machines

13. Manually loaded trucks for the collection of household refuse incorporating a compression mechanism.
14. Removable mechanical transmission devices including their guards.
15. Guards for removable mechanical transmission devices.
16. Vehicle servicing lifts.
17. Devices for the lifting of persons or of persons and goods involving a hazard of falling from a vertical height of more than three metres.
18. Portable cartridge-operated fixing and other impact machinery.
19. Protective devices designed to detect the presence of persons.
20. Power-operated interlocking movable guards designed to be used as safeguards in machinery referred to in points 9, 10 and 11.
21. Logic units to ensure safety functions.
22. Roll-over protective structures (ROPS).
23. Falling-object protective structures (FOPS)

1. Guards for removable mechanical transmission devices.
2. Protective devices designed to detect the presence of persons.
3. Power-operated interlocking movable guards designed to be used as safeguards in machinery referred to in items 9, 10 and 11 of Annex IV.
4. Logic units to ensure safety functions.
5. Valves with additional means for failure detection intended for the control of dangerous movements on machinery.
6. Extraction systems for machinery emissions.
7. Guards and protective devices designed to protect persons against moving parts involved in the process on the machinery.
8. Monitoring devices for loading and movement control in lifting machinery.
9. Restraint systems to keep persons on their seats.
10. Emergency stop devices.

11. Discharging systems to prevent the build-up of potentially dangerous electrostatic charges.
12. Energy limiters and relief devices referred to in sections 1.5.7, 3.4.7 and 4.1.2.6 of Annex I.
13. Systems and devices to reduce the emission of noise and vibrations.
14. Roll-over protective structures (ROPS).
15. Falling-object protective structures (FOPS).
16. Two-hand control devices.
17. Components for machinery designed for lifting and/or lowering persons between different landings and included in the following list:
 - (a) devices for locking landing doors;
 - (b) devices to prevent the load-carrying unit from falling or unchecked upwards movement;
 - (c) overspeed limitation devices;
 - (d) energy-accumulating shock absorbers,
 - (e) energy-dissipating shock absorbers;
 - (f) safety devices fitted to jacks of hydraulic power circuits where these are used as devices to prevent falls;
 - (g) electric safety devices in the form of safety switches containing electronic components

Different categories of Standards

Type A - Standards

Basic standards (all machinery)

Basic concepts, general principles
for design

e.g. EN ISO 12100 Part 1 and 2;

Type B - Standards

Group standards

Type B1

Safety aspects

e.g. EN 294

EN 349

Type B2

Safety equipment / guards

e.g. EN ISO 13850

EN 574

Type C - Standards

Sectorial or Product standards

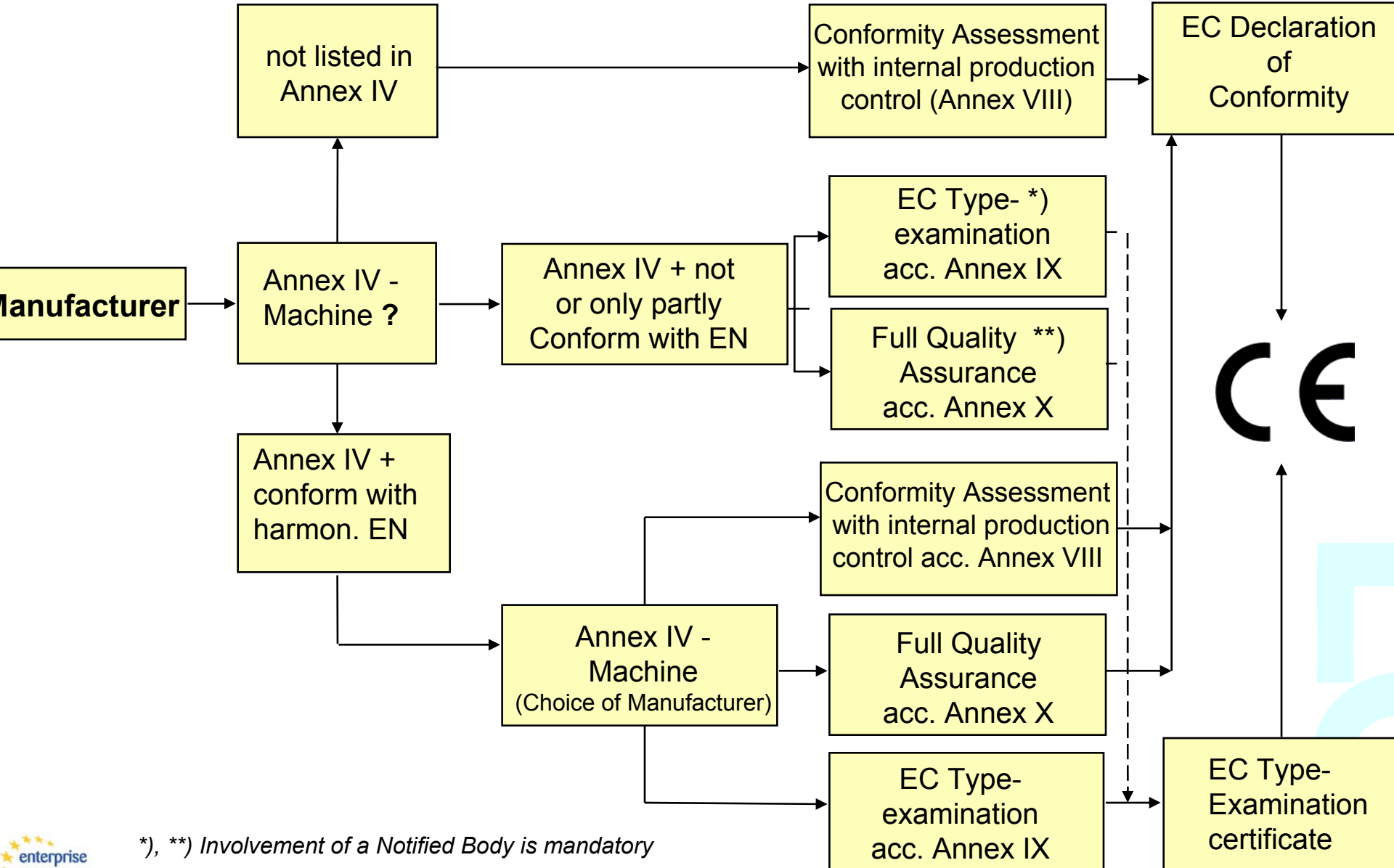
**Detailed requirements and protection
measures**

- Reference to general safety rules
- Reference to Type A - and Type B - Standards
- Specific requirements

e.g. EN 201 Plastic injection moulding machines

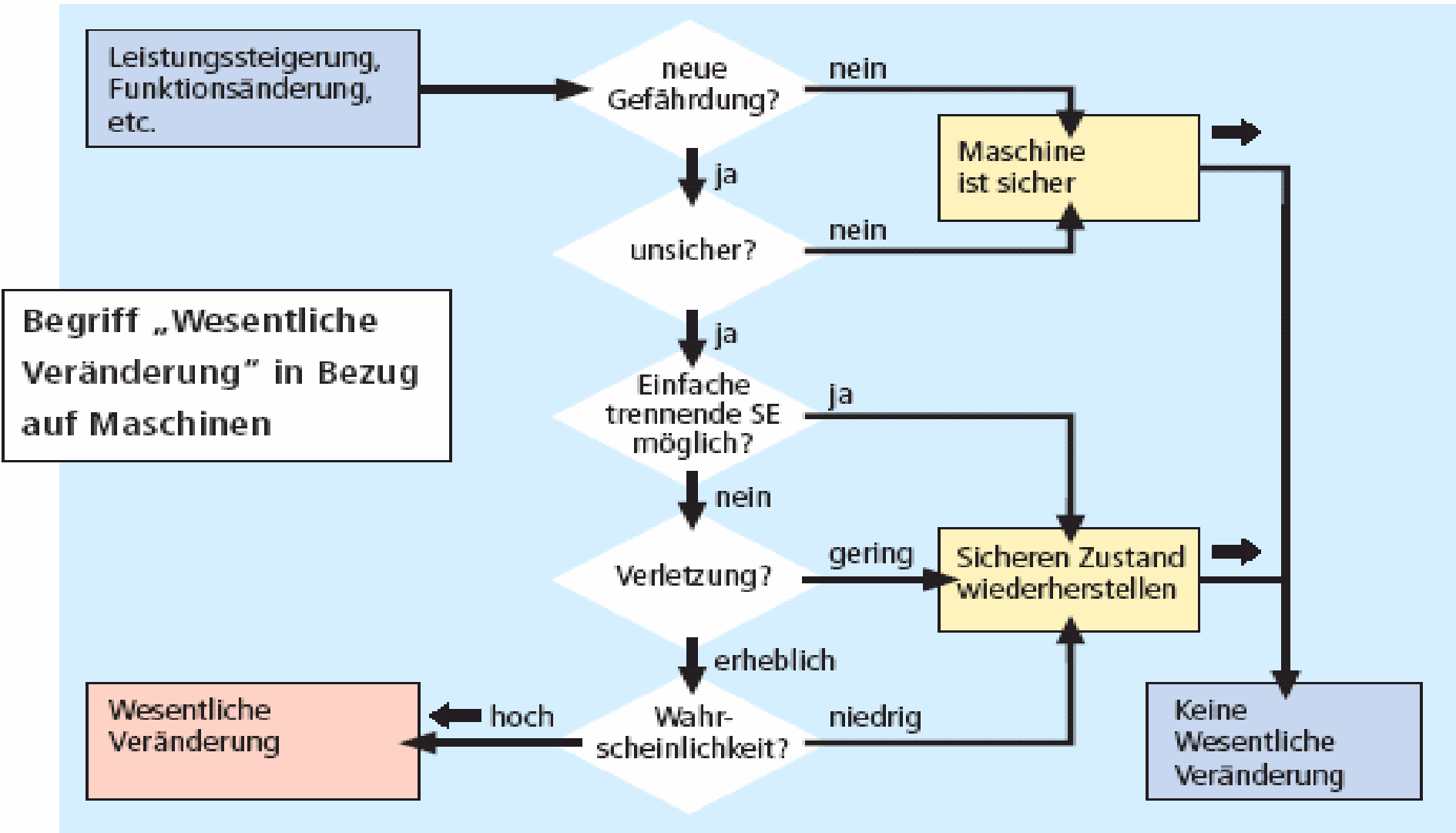
List of Harmonised Standards

Conformity Assessment Procedure



*) , **) Involvement of a Notified Body is mandatory

New CE marking ? Essential Modification?



Begriff „Wesentliche Veränderung“ in Bezug auf Maschinen

Leistungssteigerung, Funktionsänderung, etc.

Wesentliche Veränderung

Keine Wesentliche Veränderung

Electricity supply (Annex I, 1.5.1)

Where machinery has an electricity supply, it must be designed, constructed and equipped in such a way that all hazards of an electrical nature are or can be prevented.

The safety objectives set out in Directive 2006/95/EC shall apply to machinery. However, the obligations concerning conformity assessment and the placing on the market and/or putting into service of machinery with regard to electrical hazards are governed solely by this Directive.

■ Machinery Directive Annex I, 1.5.10: Radiation

Undesirable radiation emissions from the machinery must be eliminated or be reduced to levels that do not have adverse effects on persons.

Any functional ionising radiation emissions must be limited to the lowest level which is sufficient for the proper functioning of the machinery during setting, operation and cleaning. Where a risk exists, the necessary protective measures must be taken.

Any functional non-ionising radiation emissions during setting, operation and cleaning must be limited to levels that do not have adverse effects on persons.

■ Machinery Directive Annex I, 1.5.11: External Radiation

Machinery must be designed and constructed in such a way that external radiation does not interfere with its operation

⇒ Application of EMC Directive [2004/108/EC](#)