

Machinery Directive

Harmonised Standards

Directive 2006/42/EC



Certifico S.r.l.

Headquarters, Op: Via A. De Curtis 28 - 06135 Perugia - ITALY Tel.1 +39 075 599 73 63 Tel.2 +39 075 599 73 43

www.certifico.com info@certifico.com

Machinery Directive & Harmonised Standards

Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) with last comunication references of harmonised standards which have been generated by the HAS (Harmonised standards) database of 19 March 2019.

Edition: Ed. 5.0 - 05 August 2019

ISBN: 978-88-98550-24-1

Machinery Directive & Harmonised Standards

Directive 2006/42/EC(*) of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) with last comunication references of harmonised standards(**) which have been generated by the HAS (Harmonised standards) database.

Directive 2006/42/EC is a revised version of the Machinery Directive, the first version of which was adopted in 1989.

The Directive has the dual aim of harmonising the health and safety requirements applicable to machinery on the basis of a high level of protection of health and safety, while ensuring the free circulation of machinery on the EU market.

The machinery sector is an important part of the engineering industry and is one of the industrial mainstays of the Community economy.

Machinery can be described as "an assembly, fitted with or intended to be fitted with a drive system other than directly applied human or animal effort, consisting of linked parts or components, at least one of which moves, and which are joined together for a specific application".

European Commission Enterprice and Industry

(*)

Amendment:

Directive 2009/127/EC of the European Parliament and of the Council of 21 October 2009 amending Directive 2006/42/EC with regard to machinery for pesticide application.

(**)

Harmonised standards 19.03.2019

Since 1 December 2018 the references of harmonised standards are published in, and withdrawn from the Official Journal of the European Union by means of 'Commission implementing decisions'.

The references published under Directive 2006/42/EC on Machinery are found in the Commission communication published in OJ C 092 of 9 March 2018 and in the Commission Implementing Decision (EU) 2019/436 of 18 March 2019 (OJ L 75, 19 March 2019) listed below. They need to be read together, taking into account that the decision modifies some references published in the Communication.

- Commission Implementing Decision (EU) 2019/436 of 18 March 2019 on the harmonised standards for machinery drafted in support of Directive 2006/42/EC of the European Parliament and of the Council C/2019/1932 OJ L 75, 19 March 2019, p. 108–119
- Commission communication in the framework of the implementation of the Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) OJ C 092 of 9 March 2018

Indice

Machinery Directive & Harmonised Standards	3
License and Conditions of Use	4
Changelog	5
Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast)	6
Introduction	7
Article 1 - Scope	13
Article 3 - Specific Directives	14
Article 4 - Market surveillance	15
Article 5 -Placing on the market and putting into service	16
Article 6 - Freedom of movement	17
Article 7 - Presumption of conformity and harmonised standards	18
Article 8 - Specific measures	19
Article 9 - Specific measures to deal with potentially hazardous machinery	20
Article 10 - Procedure for disputing a harmonised standard	21
Article 11 Safeguard clause	22
Article 12 - Procedures for assessing the conformity of machinery	23
Article 13 - Procedure for partly completed machinery	24
Article 14 - Notified bodies	25
Article 15 - Installation and use of machinery	26
Article 16 - CE marking	27
Article 17 - Non-conformity of marking	28
Article 18 - Confidentiality	29
Article 19 - Cooperation between Member States	30
Article 20 - Legal remedies	31
Article 21 - Dissemination of information	32
Article 22 - Committee	33
Article 23 - Penalties	34
Article 24 - Amendment of Directive 95/16/EC	35
Article 25 - Repeal	36
Article 26 - Transposition	37
Article 27 - Derogation	38
Article 28 - Entry into force	39
Article 29 - Addressees	40
Note	41
ANNEX I	42
1. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS	43
1.1.2. Principles of safety integration	44
1.1.3. Materials and products	45
1.1.4. Lighting	46
1.1.5. Design of machinery to facilitate its handling	47
1.1.6. Ergonomics	48
1.1.7. Operating positions	49
1.1.8. Seating	50
1.2. CONTROL SYSTEMS	51

1.2.1. Safety and reliability of control systems	51
1.2.2. Control devices	52
1.2.3. Starting	53
1.2.4. Stopping	54
1.2.4.1. Normal stop	54
1.2.4.2. Operational stop	55
1.2.4.3. Emergency stop	56
1.2.4.4. Assembly of machinery	57
1.2.5. Selection of control or operating modes	58
1.2.6. Failure of the power supply	59
1.3. PROTECTION AGAINST MECHANICAL HAZARDS	60
1.3.1. Risk of loss of stability	60
1.3.2. Risk of break-up during operation	61
1.3.4. Risks due to surfaces, edges or angles	63
1.3.5. Risks related to combined machinery	64
1.3.6. Risks related to variations in operating conditions	65
1.3.7. Risks related to moving parts	66
1.3.8. Choice of protection against risks arising from moving parts	67
1.3.8.1. Moving transmission parts	68
1.3.8.2. Moving parts involved in the process	69
1.3.9. Risks of uncontrolled movements	70
1.4. REQUIRED CHARACTERISTICS OF GUARDS AND PROTECTIVE DEVICES	71
1.4.1. General requirements	71
1.4.2. Special requirements for guards	72
1.4.2.1. Fixed guards	72
1.4.2.2. Interlocking movable guards	73
1.4.2.3. Adjustable guards restricting access	74
1.4.3. Special requirements for protective devices	75
1.5. RISKS DUE TO OTHER HAZARDS	76
1.5.1. Electricity supply	76
1.5.2. Static electricity	77
1.5.3. Energy supply other than electricity	78
1.5.4. Errors of fitting	79
1.5.5. Extreme temperatures	80
1.5.6. Fire	81
1.5.7. Explosion	82
1.5.8. Noise	83
1.5.9. Vibrations	84
1.5.10. Radiation	85
1.5.11. External radiation	86
1.5.12. Laser radiation	87
1.5.13. Emissions of hazardous materials and substances	88
1.5.14. Risk of being trapped in a machine	89
1.5.15. Risk of slipping, tripping or falling	90
1.5.16. Lightning	91
1.6. MAINTENANCE	92
1.6.1. Machinery maintenance	92
1.6.2. Access to operating positions and servicing points	93

1.6.3. Isolation of energy sources	94
1.6.4. Operator intervention	95
1.6.5. Cleaning of internal parts	96
1.7. INFORMATION	97
1.7.1. Information and warnings on the machinery	97
1.7.1.1. Information and information devices	98
1.7.1.2. Warning devices	99
1.7.2. Warning of residual risks	100
1.7.3. Marking of machinery	101
1.7.4. Instructions	102
1.7.4.1. General principles for the drafting of instructions	103
1.7.4.2. Contents of the instructions	104
1.7.4.3. Sales literature	106
2. SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR CERTAIN CATEGORIES OF MACHINERY	107
2.1. FOODSTUFFS MACHINERY AND MACHINERY FOR COSMETICS OR PHARMACEUTICAL PRODUCTS	108
2.1.1. General	108
2.1.2. Instructions	109
2.2. PORTABLE HAND-HELD AND/OR HAND-GUIDED MACHINERY	110
2.2.1. General	110
2.2.1.1. Instructions	111
2.2.2. Portable fixing and other impact machinery	112
2.2.2.1. General	112
2.2.2.2. Instructions	113
2.3. MACHINERY FOR WORKING WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS	114
3. SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS TO OFFSET HAZARDS DUE TO THE MOBILITY OF MACHINERY	115
3.1. GENERAL	116
3.1.1. Definitions	116
3.2. WORK POSITIONS	117
3.2.1. Driving position	117
3.2.2. Seating	118
3.2.3. Positions for other persons	119
3.3. CONTROL SYSTEMS	120
3.3.1. Control devices	121
3.3.2. Starting/moving	122
3.3.3. Travelling function	123
3.3.4. Movement of pedestrian-controlled machinery	124
3.3.5. Control circuit failure	125
3.4. PROTECTION AGAINST MECHANICAL HAZARDS	126
3.4.1. Uncontrolled movements	126
3.4.2. Moving transmission parts	127
3.4.3. Roll-over and tip-over	128
3.4.4. Falling objects	129
3.4.5. Means of access	130
3.4.6. Towing devices	131
3.4.7. Transmission of power between self-propelled machinery (or tractor) and recipient machinery	132
3.5. PROTECTION AGAINST OTHER HAZARDS	133

3.5.1. Batteries 3.5.2. Fire	133 134
3.5.3. Emissions of hazardous substances	135
3.6. INFORMATION AND INDICATIONS	136
3.6.1. Signs, signals and warnings	136
3.6.2. Marking	137
3.6.3. Instructions	138
3.6.3.1. Vibrations	138
3.6.3.2. Multiple uses	139
4. SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS TO OFFSET HAZARDS DUE TO LIFTING OPERATIONS	140
4.1. GENERAL	141
4.1.1. Definitions	141
4.1.2. Protection against mechanical hazards	142
4.1.2.1. Risks due to lack of stability	142
4.1.2.2. Machinery running on guide rails and rail tracks	143
4.1.2.3. Mechanical strength	144
4.1.2.4. Pulleys, drums, wheels, ropes and chains	145
4.1.2.5. Lifting accessories and their components	146
4.1.2.6. Control of movements	147
4.1.2.7. Movements of loads during handling	148
4.1.2.8. Machinery serving fixed landings	149
4.1.2.8.1. Movements of the carrier	149
4.1.2.8.2. Access to the carrier	150
4.1.2.8.3. Risks due to contact with the moving carrier	151
4.1.2.8.4. Risk due to the load falling off the carrier	152
4.1.2.8.5. Landings	153
4.1.3. Fitness for purpose	154
4.2. REQUIREMENTS FOR MACHINERY WHOSE POWER SOURCE IS OTHER THAN MANUAL EFFORT	155
4.2.1. Control of movements	155
4.2.2. Loading control	156
4.3. INFORMATION AND MARKINGS	157
4.3.1. Chains, ropes and webbing	157
4.3.2. Lifting accessories	158
4.3.3. Lifting machinery	159
4.4. INSTRUCTIONS	160
4.4.1. Lifting accessories	160
4.4.2. Lifting machinery	161
5. SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR MACHINERY INTENDED FOR UNDERGROUND WORK	162
5.1. RISKS DUE TO LACK OF STABILITY	163
5.2. MOVEMENT	164
5.3. CONTROL DEVICES	165
5.4. STOPPING	166
5.5. FIRE	167
5.6. EXHAUST EMISSIONS	168
6. SUPPLEMENTARY ESSENTIAL HEALTH AND SAFETY REQUIREMENTS FOR MACHINERY PRESENTING PARTICULAR HAZARDS DUE TO THE LIFTING OF PERSONS	169

6.1. GENERAL	170
6.1.1. Mechanical strength	170
6.1.2. Loading control for machinery moved by power other than human strength	171
6.2. CONTROL DEVICES	172
6.3. RISKS TO PERSONS IN OR ON THE CARRIER	173
6.3.1. Risks due to movements of the carrier	173
6.3.2. Risk of persons falling from the carrier	174
6.3.3. Risk due to objects falling on the carrier	175
6.4. MACHINERY SERVING FIXED LANDINGS	176
6.4.1. Risks to persons in or on the carrier	176
6.4.2. Controls at landings	177
6.4.3. Access to the carrier	178
6.5. MARKINGS	179
ANNEX II	180
ANNEX III	182
ANNEX IV	183
ANNEX V	184
ANNEX VI	185
ANNEX VII	186
ANNEX VIII	188
ANNEX IX	189
ANNEX X	191
ANNEX XI	193
ANNEX XII	194
Harmonised standards March 2019	201
Harmonised standards March 2019	202

License and Conditions of Use

Copyright development and update ebook: Certifico S.r.l

Official source of information: European Commission - Official Journal of the European Union (OJEU).

Important Note

Every care has been taken in the collection and verification of information contained in this ebook.

However Certifico S.r.l. assumes no responsibility for the actual accuracy of the information contained in the eBook or resulting from its use.

The user using the shell to the information under its responsibility.

The only official source is the European Commission - Enterprise and Industry, through the publication of the Directive in the Official Journal of the European Union (OJEU).

Certifico S.r.l. reserves sales revenues for the development and update of the ebook.

The copying, disclosure, etc. are prohibited unless specifically authorized by Certifico S.r.l.

©Certifico S.r.l. - IT eng. Marco Maccarelli Headquarters, Op: via A. de Curtis n. 28 - 06135 Perugia - ITALY Tel. +39 075 599 73 63 Fax. +39 075 599 73 43

www.certifico.com info@certifico.com

Edition: Ed.5.0 - 05 August 2019 **ISBN**: 978-88-98550-24-1

Changelog

Ed. 5.0 August 2019

Ed. 4.0 April 2018

Ed. 3.0 June 2017

Ed. 2.0 March 2015

Ed. 1.0 April 2014