



MD TEST REPORT

For

DIGITAL PRINTING MACHINE & OVAL PRINTER WITH 4/6/8/16/24PCS PLATES

Model No.: P1804, STK1403, STK1808, STK1904, STK1906, STK1912, TE1804, TE2004, TER704, TF1832, TF2012, TF2664, TF2672, TFR703, TFR704, TFR706, TFR707, TFR708, TFR710, TFR906, TFR915, TFR924, TG1808, TG1816, TG2032, TG3216, TGR703, TGR706, TGR708, TGR710, TGR712, TGR715, TGR718, TKR702, TGR915, TK1805, TK1808, TK1816, TK1818, TK1824, TK1830, TK2024, TK2030, TK2040, TK2050, TK2080, TK2054, TK2064, TK2148, TK2150, TK2616, TK2618, TK2624, TKA1304, TKA1403, TKA1416, TKA2616, TKD2016, TKD2032, TKD2632, TKR703, TKR706, TKR709, TKR908, TKR912, STK1908, STK2608, STK3208, TK2048, TKD2024, TGR708CW, TGR706CW, TK100-X1

Applicant : SHENZHEN TEXTALK GRAPHIC TECHNOLOGY CO.,LTD

Building E, Laifu Industrial Zone No. 193, Jingfang Road,
Zhancheng Community, Fuhai Street, Bao'an District,
Shenzhen

Manufacturer : SHENZHEN TEXTALK GRAPHIC TECHNOLOGY CO.,LTD

Building E, Laifu Industrial Zone No. 193, Jingfang Road,
Zhancheng Community, Fuhai Street, Bao'an District,
Shenzhen

Issued By : ShenZhen Anxin Testing Technology Co., Ltd.

101, Building C, Dunfa Industrial Park, Hangcheng road,
Guxing Community, Xixiang Street, Bao'an District,
Shenzhen, Guangdong, China



Tel : +86 0755 23009643

Fax : +86 0755 23009643

Report Number : 00250AX7294S

Issued Date : Jul. 10, 2025

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TEST REPORT		
EN 60204-1		
Safety of machinery —Electrical equipment of machines —		
Part 1: General requirements		
EN ISO 12100		
Safety of machinery —Basic concepts, general principles for design —		
Part 1: Basic terminology, methodology and Part 2: Technical principles		
Report Reference No.....:	00250AX7294S	
Tested by (name + signature).....:	Jet Chen	
Approved by (name + signature).....:	Kevin Liu	
Date of issue.....:	Jul. 10, 2025	
Testing Laboratory.....:	ShenZhen Anxin Testing Technology Co., Ltd.	
Address.....:	101, Building C, Dunfa Industrial Park, Hangcheng road, Guxing Community, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China	
Testing location/address.....:	Same as above	
Applicant's name.....:	SHENZHEN TEXTALK GRAPHIC TECHNOLOGY CO.,LTD	
Address.....:	Building E, Laifu Industrial Zone No. 193, Jingfang Road, Zhancheng Community, Fuhai Street, Bao'an District, Shenzhen	
Test specification:	--	
Standard.....:	EN 60204-1: 2018 EN ISO 12100:2010	
Non-standard test method.....:	N/A	
Test Report Form No.....:	--	
TRF Originator.....:	AnXin	
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Test item description:	DIGITAL PRINTING MACHINE & OVAL PRINTER WITH 4/6/8/16/24PCS PLATES	
Trade Mark.....:	N/A	

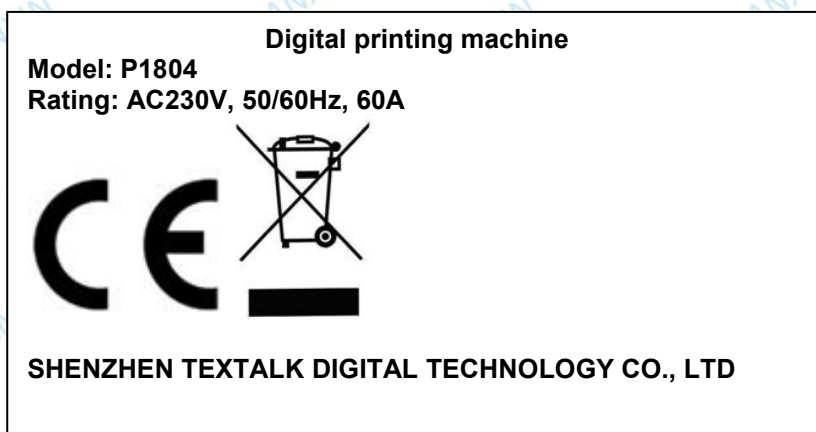


Model and/or type reference.....:	P1804, STK1403, STK1808, STK1904, STK1906, STK1912, TE1804, TE2004, TER704, TF1832, TF2012, TF2664, TF2672, TFR703, TFR704, TFR706, TFR707, TFR708, TFR710, TFR906, TFR915, TFR924, TG1808, TG1816, TG2032, TG3216, TGR703, TGR706, TGR708, TGR710, TGR712, TGR715, TGR718, TKR702, TGR915, TK1805, TK1808, TK1816, TK1818, TK1824, TK1830, TK2024, TK2030, TK2040, TK2050, TK2080, TK2054, TK2064, TK2148, TK2150, TK2616, TK2618, TK2624, TKA1304, TKA1403, TKA1416, TKA2616, TKD2016, TKD2032, TKD2632, TKR703, TKR706, TKR709, TKR908, TKR912, STK1908, STK2608, STK3208, TK2048, TKD2024, TGR708CW, TGR706CW, TK100-X1
Manufacturer	SHENZHEN TEXTALK GRAPHIC TECHNOLOGY CO.,LTD
Address.....:	Building E, Laifu Industrial Zone No. 193, Jingfang Road, Zhancheng Community, Fuhai Street, Bao'an District, Shenzhen
Rating(s).....:	AC230V, 50/60Hz, 86A

Summary of testing:

The products were evaluated under EN 60204-1, EN ISO 12100, 2006/42/EC Annex 1 was as considered.

All tests were conducted and test result was pass.





Test item particulars..... :	Safety equipment
Classification of installation and use..... :	DIGITAL PRINTING MACHINE & OVAL PRINTER WITH 4/6/8/16/24PCS PLATES
Supply Connection..... :	N/A
.....	
.....	
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P(Pass)
- test object does not meet the requirement..... :	F(Fail)
Testing :	
Date of receipt of test item..... :	Jul. 05, 2025
Date (s) of performance of tests..... :	Jul. 05, 2025 to Jul. 10, 2025
General remarks:	
The test results presented in this report relate only to the object tested.	
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"(see Enclosure #)" refers to additional information appended to the report.	
"(see appended table)" refers to a table appended to the report.	
Throughout this report a comma is used as the decimal separator.	

General product information:



General remarks: “(see remark #)” refers to a remark appended to the report. “(see appended table)” refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. The test results presented in this report relate only to the object tested. This report shall not be reproduced except in full without the written approval of the testing laboratory. Until otherwise specified, all tests are done under normal ambient condition $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$, Max RH: 75% and air pressure of 860 mbar to 1060 mbar.	Attached with: Attachment - A. Photo Documentation
Brief description of the test sample:	





EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
4	General requirements		P
4.1	General considerations.		P
4.2	Selection of equipment		P
4.2.1	General		P
	Electrical components and devices shall:		N/A
	– be suitable for their intended use; and		P
	– conform to relevant IEC standards where such exist; and		P
	– be applied in accordance with the supplier's instructions.		P
4.2.2	Electrical equipment in compliance with the EN 60439 series		N/A
4.3	Electrical supply		N/A
4.3.1	The electrical equipment shall be designed to operate correctly with the conditions of the supply:		N/A
	– as specified in 4.3.2 or 4.3.3, or		N/A
	– as otherwise specified by the user (see Annex B), or		N/A
	– as specified by the supplier in the case of a special source of supply such as an on-board generator.		N/A
4.3.2	AC supplies		N/A
4.3.3	DC supplies		N/A
4.3.4	Special supply systems		N/A
4.4	Physical environment and operating conditions		P
4.4.1	General		P
4.4.2	Electromagnetic compatibility (EMC)		N/A
	The equipment shall not generate electromagnetic disturbances above levels that are appropriate for its intended operating environment.		N/A
	In addition, the equipment shall have a level of immunity to electromagnetic disturbances so that it can function in its intended environment.		N/A
4.4.3	Ambient air temperature	+5 °C and +40 °C	P
4.4.4	Humidity		P
4.4.5	Altitude		P
4.4.6	Contaminants		P
4.4.7	Ionizing and non-ionizing radiation		N/A



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
4.4.8	Vibration, shock, and bump		P
4.5	Transportation and storage.		P
4.6	Provisions for handling		P
4.7	Installation		P
5	Incoming supply conductor terminations and devices for disconnecting and switching off		N/A
5.1	Incoming supply conductor terminations		N/A
	It is recommended that, where practicable, the electrical equipment of a machine is connected to a single incoming supply.		N/A
	Where another supply is necessary for certain parts of the equipment		N/A
	Unless a plug is provided with the machine for the connection to the supply (see 5.3.2 e), it is recommended that the supply conductors are terminated at the supply disconnecting device.		N/A
	Where a neutral conductor is used it shall be clearly indicated in the technical documentation of the machine		N/A
	There shall be no connection between the neutral conductor and the protective bonding circuit inside the electrical equipment nor shall a combined PEN terminal be provided.		N/A
	Exception: a connection may be made between the neutral terminal and the PE terminal at the point of the connection of the power supply to the machine for TN-C systems.		N/A
	All terminals for the incoming supply connection shall be clearly identified in accordance with IEC 60445 and 16.1.		N/A
	For the identification of the external protective conductor terminal, see 5.2.		N/A
5.2	Terminal for connection to the external protective earthing system		N/A
	For each incoming supply, a terminal shall be provided in the vicinity of the associated phase conductor terminals for connection of the machine to the external protective earthing system or to the external protective conductor, depending upon the supply distribution system.		N/A
	The terminal shall be of such a size as to enable the connection of an external protective copper conductor with a cross-sectional area in accordance with Table 1.		N/A
	Where an external protective conductor of a material other than copper is used, the terminal size shall be selected accordingly		N/A



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Clause	Requirement+ Test	Result - Remark	Verdict

	At each incoming supply point, the terminal for connection of the external protective earthing system or the external protective conductor shall be marked or labelled with the letters PE		N/A
5.3	Supply disconnecting (isolating) device.		N/A
5.3.1	General		N/A
	A supply disconnecting device shall be provided:		N/A
	– for each incoming source of supply to a machine(s);		N/A
	– for each on-board power supply.		N/A
	The supply disconnecting device shall disconnect (isolate) the electrical equipment of the machine from the supply when required		N/A
	When two or more supply disconnecting devices are provided, protective interlocks for their correct operation shall also be provided in order to prevent a hazardous situation, including damage to the machine or to the work in progress.		N/A
5.3.2	Type		N/A
	The supply disconnecting device shall be one of the following types:		--
	a) switch-disconnector, with or without fuses, in accordance with IEC 60947-3, utilization category AC-23B or DC-23B;		N/A
	b) disconnector, with or without fuses, in accordance with IEC 60947-3, that has an auxiliary contact that in all cases causes switching devices to break the load circuit before the opening of the main contacts of the disconnector		N/A
	c) a circuit-breaker suitable for isolation in accordance with IEC 60947-2;		N/A
	d) any other switching device in accordance with an IEC product standard for that device and which meets the isolation requirements of IEC 60947-1 as well as a utilization category defined in the product standard as appropriate for on-load switching of motors or other inductive loads;		N/A
	e) a plug/socket combination for a flexible cable supply.		N/A
5.3.3	Requirements		P
	When the supply disconnecting device is one of the types specified in 5.3.2 a) to d) it shall fulfil all of the following requirements		--
	– isolate the electrical equipment from the supply and have one OFF (isolated) and one ON position marked with "O" and "I" (symbols IEC 60417-5008 (DB:2002-10) and IEC 60417-5007 (DB:2002-10), see 10.2.2);		N/A



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Clause	Requirement+ Test	Result - Remark	Verdict
	– have a visible contact gap or a position indicator which cannot indicate OFF (isolated) until all contacts are actually open and the requirements for the isolating function have been satisfied;		N/A
	– have an external operating means (for example handle), (exception: power-operated switchgear need not be operable from outside the enclosure where there are other means to open it). Where the external operating means is not intended for emergency operations, it is recommended that it be coloured BLACK or GREY (see 10.7.4 and 10.8.4);		N/A
	– be provided with a means permitting it to be locked in the OFF (isolated) position (for example by padlocks). When so locked, remote as well as local closing shall be prevented;		N/A
	– disconnect all live conductors of its power supply circuit. However, for TN supply systems, the neutral conductor may or may not be disconnected except in countries where disconnection of the neutral conductor (when used) is compulsory;		N/A
	– have a breaking capacity sufficient to interrupt the current of the largest motor when stalled together with the sum of the normal running currents of all other motors and/or loads. The calculated breaking capacity may be reduced by the use of a proven diversity factor.		N/A
	When the supply disconnecting device is a plug/socket combination, it shall fulfil the following requirements:		N/A
	– have the switching capability, or be interlocked with a switching device that has a breaking capacity, sufficient to interrupt the current of the largest motor when stalled together with the sum of the normal running currents of all other motors and/or loads. The calculated breaking capacity may be reduced by the use of a proven diversity factor. When the interlocked switching device is electrically operated (for example a contactor) it shall have an appropriate utilisation category.		N/A
	– a) to f) of 13.4.5.		N/A
	Where the supply disconnecting device is a plug/socket combination, a switching device with an appropriate utilisation category shall be provided for switching the machine on and off. This can be achieved by the use of the interlocked switching device described above.		N/A
5.3.4	Operating means		P



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Clause	Requirement+ Test	Result - Remark	Verdict
	The operating means (for example, a handle) of the supply disconnecting device shall be easily accessible and located between 0,6 m and 1,9 m above the servicing level.		P
5.3.5	Excepted circuits		N/A
	The following circuits need not be disconnected by the supply disconnecting device:		--
	– lighting circuits for lighting needed during maintenance or repair;		N/A
	– plug and socket outlets for the exclusive connection of repair or maintenance tools and equipment (for example hand drills, test equipment);		N/A
	– undervoltage protection circuits that are only provided for automatic tripping in the event of supply failure;		N/A
	circuits supplying equipment that should normally remain energized for correct operation (for example temperature controlled measuring devices, product (work in progress) heaters, program storage devices);		N/A
	– control circuits for interlocking.		N/A
	It is recommended, however, that such circuits be provided with their own disconnecting device.		N/A
	Where such a circuit is not disconnected by the supply disconnecting device:		--
	– permanent warning label(s) in accordance with 16.1 shall be appropriately placed in proximity to the supply disconnecting device;		N/A
	– a corresponding statement shall be included in the maintenance manual, and one or more of the following shall apply;		N/A
	a permanent warning label in accordance with 16.1 is affixed in proximity to each excepted circuit, or		N/A
	- the excepted circuit is separated from other circuits, or		N/A
	- the conductors are identified by colour taking into account the recommendation of 13.2.4.		N/A
5.4	Devices for switching off for prevention of unexpected start-up		N/A
	Devices for switching off for the prevention of unexpected start-up shall be provided		N/A
	Such devices shall be appropriate and convenient for the intended use, shall be suitably placed, and readily identifiable as to their function and purpose		P
	Means shall be provided to prevent inadvertent and/or mistaken closure of these devices either at the controller or from other locations		P



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Clause	Requirement+ Test	Result - Remark	Verdict
	The following devices that fulfil the isolation function may be provided for this purpose		N/A
	– devices described in 5.3.2,		N/A
	– disconnectors, withdrawable fuse links and withdrawable links only if located in an enclosed electrical operating area		N/A
	Devices that do not fulfil the isolation function		N/A
5.5	Devices for disconnecting electrical equipment		P
	Devices shall be provided for disconnecting (isolating) electrical equipment to enable work to be carried out when it is de-energised and isolated.		N/A
	– appropriate and convenient for the intended use;		N/A
	– suitably placed;		N/A
	– readily identifiable as to which part(s) or circuit(s) of the equipment is served		N/A
	Means shall be provided to prevent inadvertent and/or mistaken closure of these devices either at the controller or from other locations		N/A
	In addition to the supply disconnecting device, the following devices that fulfil the isolation function may be provided for this purpose:		N/A
	– devices described in 5.3.2;		N/A
	– disconnectors, withdrawable fuse links and withdrawable links only if located in an electrical operating area (see 3.15) and relevant information is provided with the electrical equipment (see 17.2 b)9) and b)12))		N/A
5.6	Protection against unauthorized, inadvertent and/or mistaken connection.....		P
6	Protection against electric shock		P
6.1	General		P
	The electrical equipment shall provide protection of persons against electric shock from:		P
	– direct contact (see 6.2 and 6.4);		P
	– indirect contact (see 6.3 and 6.4).		N/A
6.2	Protection against direct contact		P
6.2.1	General		P
	For each circuit or part of the electrical equipment, the measures of either 6.2.2 or 6.2.3 and, where applicable, 6.2.4 shall be applied		N/A
	When the equipment is located in places open to all persons, which can include children, measures of either 6.2.2 with a minimum degree of protection against direct contact corresponding to IP4X or IPXXD (see IEC 60529), or 6.2.3 shall be applied		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
6.2.2	Protection by enclosures		N/A
	Live parts shall be located inside enclosures that conform to the relevant requirements of Clauses 4, 11, and 14 and that provide protection against direct contact of at least IP2X or IPXXB		N/A
	Where the top surfaces of the enclosure are readily accessible, the minimum degree of protection against direct contact provided by the top surfaces shall be IP4X or IPXXD		N/A
	Opening an enclosure (i.e. opening doors, lids, covers, and the like) shall be possible only under one of the following conditions:		N/A
	a) The use of a key or tool is necessary for access. For enclosed electrical operating areas, see IEC 60364-4-41, or IEC 60439-1 as appropriate.		N/A
	b) The disconnection of live parts inside the enclosure before the enclosure can be opened.		N/A
6.2.3	Protection by insulation of live parts		P
	Live parts protected by insulation shall be completely covered with insulation that can only be removed by destruction.		N/A
	Such insulation shall be capable of withstanding the mechanical, chemical, electrical, and thermal stresses to which it can be subjected under normal operating conditions.		P
6.2.4	Protection against residual voltages		N/A
6.2.5	Protection by barriers		P
6.2.6	Protection by placing out of reach or protection by obstacles		P
6.3	Protection against indirect contact		N/A
6.3.1	General		N/A
6.3.2	Prevention of the occurrence of a touch voltage		N/A
6.4	Protection by the use of PELV		N/A
6.4.1	General requirements		N/A
6.4.2	Sources for PELV		N/A
7	Protection of equipment		N/A
7.1	General		N/A
7.2	Overcurrent protection		N/A
7.3	Protection of motors against overheating		N/A
7.4	Abnormal temperature protection		N/A
7.5	Protection against supply interruption or voltage reduction and subsequent restoration		N/A
7.6	Motor overspeed protection		N/A



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
7.7	Earth fault/residual current protection		N/A
7.8	Phase sequence protection.		N/A
7.9	Protection against overvoltages due to lightning and to switching surges..		N/A
8	Equipotential bonding		N/A
8.1	General		N/A
8.2	Protective bonding circuit		N/A
8.3	Functional bonding		N/A
8.4	Measures to limit the effects of high leakage current		N/A
9	Control circuits and control functions		N/A
9.1	Control circuits		N/A
9.2	Control functions		N/A
9.3	Protective interlocks		N/A
9.4	Control functions in the event of failure		N/A
10	Operator interface and machine-mounted control devices		N/A
10.1	General		N/A
10.2	Push-buttons		N/A
10.3	Indicator lights and displays		P
10.4	Illuminated push-buttons		N/A
10.5	Rotary control devices		N/A
10.6	Start devices		N/A
10.7	Emergency stop devices		N/A
10.8	Emergency switching off devices		N/A
10.9	Enabling control device		N/A
11	Controlgear: location, mounting, and enclosures		N/A
11.1	General requirements		N/A
	All controlgear shall be located and mounted so as to facilitate:		N/A
	– its accessibility and maintenance;		N/A
	– its protection against the external influences or conditions under which it is intended to operate;		N/A
	– operation and maintenance of the machine and its associated equipment		N/A
11.2	Location and mounting		P
11.2.1	Accessibility and maintenance		P
11.2.2	Physical separation or grouping		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
11.2.3	Heating effects		N/A
11.3	Degrees of protection		P
11.4	Enclosures, doors and openings		P
11.5	Access to controlgear		N/A
12	Conductors and cables		N/A
12.1	General requirements		N/A
12.2	Conductors		N/A
12.3	Insulation		N/A
12.4	Current-carrying capacity in normal service		N/A
	The current-carrying capacity depends on several factors, for example insulation material, number of conductors in a cable, design (sheath), methods of installation, grouping and ambient temperature.		N/A
	One typical example of the current-carrying capacities for PVC insulated wiring between enclosures and individual items of equipment under steady-state conditions is given in Table 6.		N/A
12.5	Conductor and cable voltage drop		N/A
12.6	Flexible cables		N/A
12.7	Conductor wires, conductor bars and slip-ring assemblies		N/A
12.7.1	Protection against direct contact		N/A
	Conductor wires, conductor bars and slip-ring assemblies shall be installed or enclosed in such a way that, during normal access to the machine, protection against direct contact is achieved by the application of one of the following protective measures		N/A
	– protection by partial insulation of live parts, or where this is not practicable;		N/A
	– protection by enclosures or barriers of at least IP2X		N/A
	Conductor wires and conductor bars shall be so placed and/or protected as to:		--
	– prevent contact, especially for unprotected conductor wires and conductor bars, with conductive items such as the cords of pull-cord switches, strain-relief devices and drive chains;		N/A
	– prevent damage from a swinging load.		N/A
12.7.2	Protective conductor circuit		N/A
12.7.3	Protective conductor current collectors		N/A
12.7.4	Removable current collectors with a disconnect function		N/A



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
12.7.5	Clearances in air		N/A
12.7.6	Creepage distances		N/A
12.7.7	Conductor system sectioning		N/A
12.7.8	Construction and installation of conductor wire, conductor bar systems and slip-ring assemblies		N/A
13	Wiring practices		N/A
13.1	Connections and routing		N/A
13.1.1	General requirements		N/A
	All connections, especially those of the protective bonding circuit, shall be secured against accidental loosening.		N/A
	The means of connection shall be suitable for the cross-sectional areas and nature of the conductors being terminated.		N/A
	Soldered connections shall only be permitted where terminals are provided that are suitable for soldering.		N/A
	Terminals on terminal blocks shall be plainly marked or labelled to correspond with markings on the diagrams.		N/A
	Where an incorrect electrical connection (for example, arising from replacement of devices) can be a source of risk and it is not practicable to reduce the possibility of incorrect connection by design measures, the conductors and/or terminations shall be identified in accordance with 13.2.1.		N/A
	The installation of flexible conduits and cables shall be such that liquids shall drain away from the fittings.	No water	N/A
	Means of retaining conductor strands shall be provided when terminating conductors at devices or terminals that are not equipped with this facility. Solder shall not be used for that purpose.		N/A
	Shielded conductors shall be so terminated as to prevent fraying of strands and to permit easy disconnection		N/A
	Identification tags shall be legible, permanent, and appropriate for the physical environment.		N/A
	Terminal blocks shall be mounted and wired so that the internal and external wiring does not cross over the terminals		N/A
13.1.2	Conductor and cable runs		N/A
	Conductors and cables shall be run from terminal to terminal without splices or joints.		N/A
	Connections using plug/socket combinations with suitable protection against accidental disconnection are not considered to be joints for the purpose of this Subclause.		N/A



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
13.1.3	Conductors of different circuits		N/A
	Conductors of different circuits may be laid side by side, may occupy the same duct		N/A
13.1.4	Connection between pick-up and pick-up converter of an inductive power supply system		N/A
13.2	Identification of conductors		N/A
13.2.1	General requirements		N/A
	Each conductor shall be identifiable at each termination in accordance with the technical documentation		N/A
13.2.2	Identification of the protective conductor		N/A
13.2.3	Identification of the neutral conductor		N/A
13.2.4	Identification by colour		P
13.3	Wiring inside enclosures		N/A
	Conductors inside enclosures shall be supported where necessary to keep them in place.		N/A
	Non-metallic ducts shall be permitted only when they are made with a flame-retardant insulating material		N/A
	Connections to devices mounted on doors or to other movable parts shall be made using flexible conductors in accordance with 12.2 and 12.6 to allow for the frequent movement of the par		N/A
	The conductors shall be anchored to the fixed part and to the movable part independently of the electrical connection		N/A
	Conductors and cables that do not run in ducts shall be adequately supported.		N/A
	Terminal blocks or plug/socket combinations shall be used for control wiring that extends beyond the enclosure. For plug/socket combinations, see also 13.4.5 and 13.4.6.		N/A
	Power cables and cables of measuring circuits may be directly connected to the terminals of the devices for which the connections were intended.		N/A
13.4	Wiring outside enclosures		N/A
13.4.1	General requirements		N/A
	The means of introduction of cables or ducts with their individual glands, bushings, etc., into an enclosure shall ensure that the degree of protection is not reduced		N/A
13.4.2	External ducts		N/A
13.4.3	Connection to moving elements of the machine		N/A



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Clause	Requirement+ Test	Result - Remark	Verdict
13.4.4	Interconnection of devices on the machine		N/A
13.4.5	Plug/socket combinations		N/A
13.4.6	Dismantling for shipment		N/A
13.4.7	Additional conductors		N/A
13.5	Ducts, connection boxes and other boxes		N/A
13.5.1	General requirements		P
	Ducts shall provide a degree of protection suitable for the application		N/A
	All sharp edges, flash, burrs, rough surfaces, or threads with which the insulation of the conductors can come in contact shall be removed from ducts and fittings.		N/A
	Where necessary, additional protection consisting of a flame-retardant, oil-resistant insulating material shall be provided to protect conductor insulation		N/A
	Drain holes of 6 mm diameter are permitted in cable trunking systems, connection boxes, and other boxes used for wiring purposes that can be subject to accumulations of oil or moisture		N/A
	In order to prevent confusion of conduits with oil, air, or water piping, it is recommended that the conduits be either physically separated or suitably identified.		N/A
	Ducts and cable trays shall be rigidly supported and positioned at a sufficient distance from moving parts and in such a manner so as to minimize the possibility of damage or wear.		N/A
	Ducts shall be provided only for mechanical protection		N/A
	Cable trays that are partially covered should not be considered to be ducts or cable trunking systems		N/A
13.5.2	Percentage fill of ducts		N/A
	Consideration of the percentage fill of ducts should be based on the straightness and length of the duct and the flexibility of the conductors.		N/A
	It is recommended that the dimensions and arrangement of the ducts be such as to facilitate the insertion of the conductors and cables.		N/A
13.5.3	Rigid metal conduit and fittings		N/A
	Rigid metal conduit and fittings shall be of galvanized steel or of a corrosion-resistant material suitable for the conditions		N/A
	The use of dissimilar metals in contact that can cause galvanic action should be avoided.		N/A
	Conduits shall be securely held in place and supported at each end.		N/A
13.5.4	Flexible metal conduit and fittings		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
	A flexible metal conduit shall consist of a flexible metal tubing or woven wire armour. It shall be suitable for the expected physical environment.		P
	Fittings shall be compatible with the conduit and appropriate for the application.		P
13.5.5	Flexible non-metallic conduit and fittings		N/A
	Flexible non-metallic conduit shall be resistant to kinking and shall have physical characteristics similar to those of the sheath of multiconductor cables.		N/A
	The conduit shall be suitable for use in the expected physical environment.		N/A
	Fittings shall be compatible with the conduit and appropriate for the application.		N/A
13.5.6	Cable trunking systems		N/A
13.5.7	Machine compartments and cable trunking systems		N/A
13.5.8	Connection boxes and other boxes		N/A
	Connection boxes and other boxes used for wiring purposes shall be accessible for maintenance.		N/A
	Those boxes shall provide protection against the ingress of solid bodies and liquids, taking into account the external influences under which the machine is intended to operate		N/A
	Those boxes shall not have opened but unused knockouts nor any other openings and shall be so constructed as to exclude materials such as dust, flyings, oil, and coolant.		N/A
13.5.9	Motor connection boxes	Certified motor	N/A
14	Electric motors and associated equipment		N/A
14.1	General requirements		N/A
	Electric motors should conform to the relevant parts of IEC 60034 series.		N/A
	The protection requirements for motors and associated equipment are given in 7.2 for overcurrent protection, in 7.3 for overload protection, and in 7.6 for overspeed protection		N/A
	As many controllers do not switch off the supply to a motor when it is at rest, care shall be taken to ensure compliance with the requirements of 5.3, 5.4, 5.5, 7.5, 7.6 and 9.4.		N/A
	Motor control equipment shall be located and mounted in accordance with Clause 11.		N/A
14.2	Motor enclosures.		N/A
	It is recommended that motor enclosures be chosen from those included in IEC 60034-5.		N/A
14.3	Motor dimensions		N/A



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
	As far as is practicable, the dimensions of motors shall conform to those given in the IEC 60072 series		N/A
14.4	Motor mounting and compartments		N/A
14.5	Criteria for motor selection		N/A
14.6	Protective devices for mechanical brakes		N/A
15	Accessories and lighting		N/A
15.1	Accessories		N/A
	Where the machine or its associated equipment is provided with socket-outlets that are intended to be used for accessory equipment		N/A
15.2	Local lighting of the machine and equipment		N/A
15.2.1	General		N/A
	Connections to the protective bonding circuit shall be in accordance with 8.2.2.		N/A
	The ON/OFF switch shall not be incorporated in the lampholder or in the flexible connecting cords.		N/A
	Stroboscopic effects from lights shall be avoided by the selection of appropriate luminaires		N/A
	Where fixed lighting is provided in an enclosure, electromagnetic compatibility should be taken into account using the principles outlined in 4.4.2.		N/A
15.2.2	Supply		N/A
	The nominal voltage of the local lighting circuit shall not exceed 250 V between conductors. A voltage not exceeding 50 V between conductors is recommended.		N/A
	Lighting circuits shall be supplied from one of the following sources		N/A
15.2.3	Protection		N/A
	Local lighting circuits shall be protected in accordance with 7.2.6.		N/A
15.2.4	Fittings		N/A
	Adjustable lighting fittings shall be suitable for the physical environment		N/A
	The lampholders shall be		--
	– in accordance with the relevant IEC standard;	Certified lampholder	N/A
	– constructed with an insulating material protecting the lamp cap so as to prevent unintentional contact		N/A
	Reflectors shall be supported by a bracket and not by the lampholder.		N/A
16	Marking, warning signs and reference designations		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
16.1	General		P
	Warning signs, nameplates, markings, and identification plates shall be of sufficient durability to withstand the physical environment involved.		P
16.2	Warning signs		P
16.2.1	Electric shock hazard		P
	Enclosures that do not otherwise clearly show that they contain electrical equipment that can give rise to a risk of electric shock shall be marked with the graphical symbol IEC 60417-5036		N/A
	The warning sign shall be plainly visible on the enclosure door or cover.		N/A
	The warning sign may be omitted (see also 6.2.2 b)) for:		N/A
16.2.2	Hot surfaces hazard		N/A
16.3	Functional identification		N/A
	Control devices, visual indicators, and displays (particularly those related to safety) shall be clearly and durably marked with regard to their functions either on or adjacent to the item.		N/A
	Such markings may be as agreed between the user and the supplier of the equipment		N/A
16.4	Marking of equipment		P
	Equipment (for example controlgear assemblies) shall be legibly and durably marked in a way that is plainly visible after the equipment is installed.		P
	A nameplate giving the following information shall be attached to the enclosure adjacent to each incoming supply		P
16.5	Reference designations		P
	All enclosures, assemblies, control devices, and components shall be plainly identified with the same reference designation as shown in the technical documentation.		P
17	Technical documentation		P
17.1	General		P
	The information necessary for installation, operation, and maintenance of the electrical equipment of a machine shall be supplied in the appropriate forms		P
	The information provided may vary with the complexity of the electrical equipment. For very simple equipment, the relevant information may be contained in one document, provided that the document shows all the devices of the electrical equipment and enables the connections to the supply network to be made.		N/A
17.2	Information to be provided		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
	The information provided with the electrical equipment shall include:		--
	a) A main document (parts list or list of documents);		P
	b) Complementary documents including:		P
	1) a clear, comprehensive description of the equipment, installation and mounting, and the connection to the electrical supply(ies);		P
	2) electrical supply(ies) requirements;		N/A
	3) information on the physical environment (for example lighting, vibration, atmospheric contaminants) where appropriate;		P
	4) overview (block) diagram(s) where appropriate;		P
	5) circuit diagram(s);		N/A
	6) information (as applicable) on:		P
	programming, as necessary for use of the equipment;		N/A
	sequence of operation(s);		P
	frequency and method of functional testing;		N/A
	guidance on the adjustment, maintenance, and repair, particularly of the protective devices and circuits;		N/A
	recommended spare parts list; and		P
	list of tools supplied.		P
	7) a description (including interconnection diagrams) of the safeguards, interlocking functions, and interlocking of guards against hazards, particularly for machines operating in a co-ordinated manner;		N/A
	8) a description of the safeguarding and of the means provided where it is necessary to suspend the safeguarding (for example for setting or maintenance), (see 9.2.4)		N/A
	9) instructions on the procedures for securing the machine for safe maintenance; (see also 17.8);		N/A
	10) information on handling, transportation and storage;		P
	11) information regarding load currents, peak starting currents and permitted voltage drops, as applicable;		N/A
	12) information on the residual risks due to the protection measures adopted, indication of whether any particular training is required and specification of any necessary personal protective equipment.		N/A
17.3	Requirements applicable to all documentation		P
17.4	Installation documents		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
	In complex cases, it may be necessary to refer to the assembly drawings for details.		P
	The recommended position, type, and cross-sectional areas of the supply cables to be installed on site shall be clearly indicated.		N/A
	The data necessary for choosing the type, characteristics, rated currents, and setting of the overcurrent protective device(s) for the supply conductors to the electrical equipment of the machine shall be stated (see 7.2.2).		N/A
	Where necessary, the size, purpose, and location of any ducts in the foundation that are to be provided by the user shall be detailed		P
	The size, type, and purpose of ducts, cable trays, or cable supports between the machine and the associated equipment that are to be provided by the user shall be detailed		N/A
	Where necessary, the diagram shall indicate where space is required for the removal or servicing of the electrical equipment.		N/A
	In addition, where it is appropriate, an interconnection diagram or table shall be provided		N/A
17.5	Overview diagrams and function diagrams		P
	Function diagrams may be provided as either part of, or in addition to, the overview diagram.		P
17.6	Circuit diagrams		N/A
	A circuit diagram(s) shall be provided.		N/A
	Where appropriate, a diagram showing the terminals for interface connections shall be provided.		N/A
	Switch symbols shall be shown on the electromechanical diagrams with all supplies turned off		N/A
	Conductors shall be identified in accordance with 13.2.		N/A
	Circuits shall be shown in such a way as to facilitate the understanding of their function as well as maintenance and fault location.		N/A
17.7	Operating manual		P
	The technical documentation shall contain an operating manual detailing proper procedures for set-up and use of the electrical equipment.		N/A
	Where the operation of the equipment can be programmed, detailed information on methods of programming, equipment required, program verification, and additional safety procedures (where required) shall be provided.		N/A
17.8	Maintenance manual		P



EN 60204-1			
Clause	Requirement+ Test	Result - Remark	Verdict
	The technical documentation shall contain a maintenance manual detailing proper procedures for adjustment, servicing and preventive inspection, and repair.		P
	Recommendations on maintenance/service intervals and records should be part of that manual.		P
	Where methods for the verification of proper operation are provided (for example software testing programs), the use of those methods shall be detailed.		N/A
17.9	Parts list		P
18	Verification		P
18.1	General		P
	This part of IEC 60204 gives general requirements for the electrical equipment of machines		P
	The extent of verification will be given in the dedicated product standard for a particular machine.		P
	Where there is no dedicated product standard for the machine, the verifications shall always include the items a), b) and f) and may include one or more of the items c) to e):		N/A
	a) verification that the electrical equipment complies with its technical documentation;		N/A
	b) in case of protection against indirect contact by automatic disconnection, conditions for protection by automatic disconnection shall be verified according to 18.2;		N/A
	c) insulation resistance test (see 18.3);		N/A
	d) voltage test (see 18.4);		N/A
	e) protection against residual voltage (see 18.5);		N/A
	f) functional tests (see 18.6).		N/A
	When these tests are performed, it is recommended that they follow the sequence listed above.		P
	When the electrical equipment is modified, the requirements stated in 18.7 shall apply.		N/A
	The results of the verification shall be documented.		P
18.2	Verification of conditions for protection by automatic disconnection of supply		N/A
18.3	Insulation resistance tests		N/A
18.4	Voltage tests		N/A
18.5	Protection against residual voltages		N/A
18.6	Functional tests		P
18.7	Retesting		P



EN ISO 12100			
Clause	Requirement+ Test	Result - Remark	Verdict
4	Hazards to be taken into account when designing machinery		P
4.1	General		P
4.2	Mechanical hazard		P
4.3	Electrical hazard		N/A
4.4	Thermal hazard		N/A
4.5	Hazard generated by noise		N/A
4.6	Hazards generated by vibration		N/A
4.7	Hazards generated by radiation		N/A
4.8	Hazards generated by materials and substances		N/A
4.9	Hazards generated by neglecting ergonomic principles in machine design		N/A
4.10	Slipping, tripping and falling hazards		P
4.11	Hazard combinations		P
4.12	Hazards associated with the environment in which the machine is used		P
5	Strategy for risk reduction		P
5.1	General provisions		P
5.2	Specification of the limits of the machine		P
5.3	Hazard identification, risk estimation and risk evaluation		P
5.4	Elimination of hazards or reduction of risk by protective measures		P
5.5	Achievement of risk reduction objectives		P



4	Inherently safe design measures	P
4.1	General	P
4.2	Consideration of geometrical factors and physical aspects	P
4.3	Taking into account the general technical knowledge regarding machine design	P
4.4	Choice of an appropriate technology	P
4.5	Applying the principle of the positive mechanical action of a component on another component	P
4.6	Provisions for stability	P
4.7	Provisions for maintainability	P
4.8	Observing ergonomic principles	P
4.9	Preventing electrical hazard	N/A
4.10	Preventing hazards from pneumatic and hydraulic equipment	N/A
4.11	Applying inherently safe design measures to control system	P
4.12	Minimizing the probability of failure of safety functions	P
4.13	Limiting exposure to hazards through reliability of equipment	P
4.14	Limiting exposure to hazards through mechanization or automation of loading (feeding) /unloading (removal) operations	N/A
4.15	Limiting exposure to hazards through location of the setting and maintenance points outside of danger zones	P
5	Safeguarding and complementary protective measures	P
5.1	General	P
5.2	Selection and implementation of guards and protective devices	P
5.3	Requirements for the design of guards and protective devices	P
5.4	Safeguarding for reducing emissions	P
5.5	Complementary protective measures	P
6	Information for use	P
6.1	General requirements	P
6.2	Location and nature of the information for use	P
6.3	Signals and warning devices	P
6.4	Markings, signs (pictograms), written warnings	P



6.5	Accompanying documents (in particular, instruction handbook)		P
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Annex I of 2006/42/EC Essential health and safety requirements relating to the design and construction of machine			
Clause	Requirement+ Test	Result - Remark	Verdict

GENERAL PRINCIPLES			P
	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. By the iterative process of risk assessment and risk reduction referred to above, the manufacturer or his authorised representative shall: - determine the limits of the machinery, which include the intended use and any reasonably foreseeable misuse thereof, - identify the hazards that can be generated by the machinery and the associated hazardous situations, - estimate the risks, taking into account the severity of the possible injury or damage to health and the probability of its occurrence, - evaluate the risks, with a view to determining whether risk reduction is required, in accordance with the objective of this Directive, - eliminate the hazards or reduce the risks associated with these hazards by application of protective measures, in the order of priority established in section 1.1.2(b).	Risk assessment performed	P
	The obligations laid down by the essential health and safety requirements only apply when the corresponding hazard exists for the machinery in question when it is used under the conditions foreseen by the manufacturer or his authorised representative or in foreseeable abnormal situations. In any event, the principles of safety integration referred to in section 1.1.2 and the obligations concerning marking of machinery and instructions referred to in sections 1.7.3 and 1.7.4 apply.		P
	The essential health and safety requirements laid down in this Annex are mandatory; However, taking into account the state of the art, it may not be possible to meet the objectives set by them. In that event, the machinery must, as far as possible, be designed and constructed with the purpose of approaching these objectives.		P



	This Annex is organised in several parts. The first one has a general scope and is applicable to all kinds of machinery. The other parts refer to certain kinds of more specific hazards. Nevertheless, it is essential to examine the whole of this Annex in order to be sure of meeting all the relevant essential requirements. When machinery is being designed, the requirements of the general part and the requirements of one or more of the other parts shall be taken into account, depending on the results of the risk assessment carried out in accordance with point 1 of these General Principles.		P
	ESSENTIAL HEALTH AND SAFETY REQUIREMENTS		P
	GENERAL REMARKS		P
	Definitions For the purpose of this Annex: (a) 'hazard' means a potential source of injury or damage to health; (b) 'danger zone' means any zone within and/or around machinery in which a person is subject to a risk to his health or safety; (c) 'exposed person' means any person wholly or partially in a danger zone; (d) 'operator' means the person or persons installing, operating, adjusting, maintaining, cleaning, repairing or moving machinery; (e) 'risk' means a combination of the probability and the degree of an injury or damage to health that can arise in a hazardous situation; (f) 'guard' means a part of the machinery used specifically to provide protection by means of a physical barrier; (g) 'protective device' means a device (other than a guard) which reduces the risk, either alone or in conjunction with a guard; (h) 'intended use' means the use of machinery in accordance with the information provided in the instructions for use; (i) 'reasonably foreseeable misuse' means the use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behaviour.		P
1.1.2.	Principles of safety integration		P
	(a) Machinery must be designed and constructed so that it is fitted for its function, and can be operated, adjusted and maintained without putting persons at risk when these operations are carried out under the conditions foreseen but also taking into account any reasonably foreseeable misuse thereof. The aim of measures taken must be to eliminate any risk throughout the foreseeable lifetime of the machinery including the phases of transport, assembly, dismantling, disabling and scrapping.		P



	(b) In selecting the most appropriate methods, the manufacturer or his authorised representative must apply the following principles, in the order given: - elimination and reduction of risks as far as possible (inherently safe machinery design and construction), - the necessary protection measures are taken in relation to risks that cannot be eliminated, - information for users of the residual risks due to any shortcomings of the protection measures adopted, indication whether any particular training is required and specification of any need to provide personal protection equipment.		P
	(c) When designing and constructing machinery and when drafting the instructions, the manufacturer or his authorised representative must envisage not only the intended use of the machinery but also any reasonably foreseeable misuse thereof. The machinery must be designed and constructed in such a way as to prevent abnormal use if such use would engender a risk. Where appropriate, the instructions must draw the user's attention to ways - which experience has shown might occur - in which the machinery should not be used.		P
	(d) Machinery must be designed and constructed to take account of the constraints to which the operator is subject as a result of the necessary or foreseeable use of personal protective equipment.		P
	(e) Machinery must be supplied with all the special equipment and accessories essential to enable it to be adjusted, maintained and used safely.		P
1.1.3.	Materials and products		
	The materials used to construct machinery or products used or created during its use must not endanger persons' safety or health. In particular, where fluids are used, machinery must be designed and constructed to prevent risks due to filling, use, recovery or draining.		P
1.1.4.	Lighting		P
	Machinery must be supplied with integral lighting suitable for the operations concerned where the absence thereof is likely to cause a risk despite ambient lighting of normal intensity.		P
	Machinery must be designed and constructed so that there is no area of shadow likely to cause nuisance, that there is no irritating dazzle and that there are no dangerous stroboscopic effects on moving parts due to the lighting.		P
	Internal parts requiring frequent inspection and adjustment, and maintenance areas must be provided with appropriate lighting.		P
1.1.5.	Design of machinery to facilitate its handling		P



	Machinery, or each component part thereof, must: - be capable of being handled and transported safely, - be packaged or designed so that it can be stored safely and without damage.		P
	During the transportation of the machinery and/or its component parts, there must be no possibility of sudden movements or of hazards due to instability as long as the machinery and/or its component parts are handled in accordance with the instructions.		P
	Where the weight, size or shape of machinery or its various component parts prevents them from being moved by hand, the machinery or each component part must: - either be fitted with attachments for lifting gear, or - be designed so that it can be fitted with such attachments, or - be shaped in such a way that standard lifting gear can easily be attached		P
	Special arrangements must be made for the handling of tools and/or machinery parts which, even if lightweight, could be hazardous.		N/A
1.1.6.	Ergonomics		P
	Under the intended conditions of use, the discomfort, fatigue and physical and psychological stress faced by the operator must be reduced to the minimum possible, taking into account ergonomic principles such as: - allowing for the variability of the operator's physical dimensions, strength and stamina, - providing enough space for movements of the parts of the operator's body, - avoiding a machine-determined work rate, - avoiding monitoring that requires lengthy concentration, - adapting the man/machinery interface to the foreseeable characteristics of the operators.		P
1.1.7.	Operating positions		P
	The operating position must be designed and constructed in such a way as to avoid any risk due to exhaust gases and/or lack of oxygen.		P
	If the machinery is intended to be used in a hazardous environment presenting risks to the health and safety of the operator or if the machinery		P
	itself gives rise to a hazardous environment, adequate means must be provided to ensure that the operator has good working conditions and is protected against any foreseeable hazards.		P
	Where appropriate, the operating position must be fitted with an adequate cabin designed, constructed and/or equipped to fulfil the above requirements. The exit must allow rapid evacuation. Moreover, when applicable, an emergency exit must be provided in a direction which is different from the usual exit.		P
1.1.8.	Seating		N/A



	Where appropriate and where the working conditions so permit, work stations constituting an integral part of the machinery must be designed for the installation of seats.		N/A
	If the operator is intended to sit during operation and the operating position is an integral part of the machinery, the seat must be provided with the machinery.		N/A
	The operator's seat must enable him to maintain a stable position. Furthermore, the seat and its distance from the control devices must be capable of being adapted to the operator.		N/A
	If the machinery is subject to vibrations, the seat must be designed and constructed in such a way as to reduce the vibrations transmitted to the operator to the lowest level that is reasonably possible. The seat mountings must withstand all stresses to which they can be subjected. Where there is no floor beneath the feet of the operator, footrests covered with a slipresistant material must be provided.		N/A
1.2.	CONTROL SYSTEM		P
1.2.1.	Safety and reliability of control systems		P
	Control systems must be designed and constructed in such a way as to prevent hazardous situations from arising. Above all, they must be designed and constructed in such a way that: - they can withstand the intended operating stresses and external influences, - a fault in the hardware or the software of the control system does not lead to hazardous situations, - errors in the control system logic do not lead to hazardous situations, - reasonably foreseeable human error during operation does not lead to hazardous situations.		P
	Particular attention must be given to the following points: - the machinery must not start unexpectedly, - the parameters of the machinery must not change in an uncontrolled way, where such change may lead to hazardous situations, - the machinery must not be prevented from stopping if the stop command has already been given, - no moving part of the machinery or piece held by the machinery must fall or be ejected, - automatic or manual stopping of the moving parts, whatever they may be, must be unimpeded, - the protective devices must remain fully effective or give a stop command, - the safety-related parts of the control system must apply in a coherent way to the whole of an assembly of machinery and/or partly completed machinery.		P
	For cable-less control, an automatic stop must be activated when correct control signals are not received, including loss of communication.		N/A



1.2.2.	Control devices		P
	Control devices must be: - clearly visible and identifiable, using pictograms where appropriate, - positioned in such a way as to be safely operated without hesitation or loss of time and without ambiguity, - designed in such a way that the movement of the control device is consistent with its effect, - located outside the danger zones, except where necessary for certain control devices such as an emergency stop or a teach pendant, - positioned in such a way that their operation cannot cause additional risk, - designed or protected in such a way that the desired effect, where a hazard is involved, can only be achieved by a deliberate action, - made in such a way as to withstand foreseeable forces; particular attention must be paid to emergency stop devices liable to be subjected to considerable forces.		P
	Where a control device is designed and constructed to perform several different actions, namely where there is no one-to-one correspondence, the action to be performed must be clearly displayed and subject to confirmation, where necessary.		P
	Control devices must be so arranged that their layout, travel and resistance to operation are compatible with the action to be performed, taking account of ergonomic principles.		P
	Machinery must be fitted with indicators as required for safe operation. The operator must be able to read them from the control position.	Temperaturer:-10~+40℃; height above sea level:land 1000meter	P
	From each control position, the operator must be able to ensure that no-one is in the danger zones, or the control system must be designed and constructed in such a way that starting is prevented while someone is in the danger zone.		P
	If neither of these possibilities is applicable, before the machinery starts, an acoustic and/or visual warning signal must be given. The exposed persons must have time to leave the danger zone or prevent the machinery starting up.		P
	If necessary, means must be provided to ensure that the machinery can be controlled only from control positions located in one or more predetermined zones or locations.		P
	Where there is more than one control position, the control system must be designed in such a way that the use of one of them precludes the use of the others, except for stop controls and emergency stops.		P
	When machinery has two or more operating positions, each position must be provided with all the required control devices without the operators hindering or putting each other into a hazardous situation.		N/A



1.2.3.	Starting		P
	It must be possible to start machinery only by voluntary actuation of a control device provided for the purpose.		P
	The same requirement applies: - when restarting the machinery after a stoppage, whatever the cause,		P
	However, the restarting of the machinery or a change in operating conditions may be effected by voluntary actuation of a device other than the control device provided for the purpose, on condition that this does not lead to a hazardous situation.		P
	For machinery functioning in automatic mode, the starting of the machinery, restarting after a stoppage, or a change in operating conditions may be possible without intervention, provided this does not lead to a hazardous situation.		P
	Where machinery has several starting control devices and the operators can therefore put each other in danger, additional devices must be fitted to rule out such risks. If safety requires that starting and/or stopping must be performed in a specific sequence, there must be devices which ensure that these operations are performed in the correct order.		N/A
1.2.4.	Stopping		P
1.2.4.1.	Normal stop		P
	Machinery must be fitted with a control device whereby the machinery can be brought safely to a complete stop.		P
	Each workstation must be fitted with a control device to stop some or all of the functions of the machinery, depending on the existing hazards, so that the machinery is rendered safe.		P
	The machinery's stop control must have priority over the start controls.		P
	Once the machinery or its hazardous functions have stopped, the energy supply to the actuators concerned must be cut off.		P
1.2.4.2.	Operational stop		P
	Where, for operational reasons, a stop control that does not cut off the energy supply to the actuators is required, the stop condition must be monitored and maintained.		P
1.2.4.3.	Emergency stop		P
	Machinery must be fitted with one or more emergency stop devices to enable actual or impending danger to be averted.		P



	The following exceptions apply: - machinery in which an emergency stop device would not lessen the risk, either because it would not reduce the stopping time or because it would not enable the special measures required to deal with the risk to be taken, - portable hand-held and/or hand-guided machinery.		N/A
	The device must: - have clearly identifiable, clearly visible and quickly accessible control devices, - stop the hazardous process as quickly as possible, without creating additional risks, - where necessary, trigger or permit the triggering of certain safeguard movements.		P
	Once active operation of the emergency stop device has ceased following a stop command, that command must be sustained by engagement of the emergency stop device until that engagement is specifically overridden; it must not be possible to engage the device without triggering a stop command; it must be possible to disengage the device only by an		P
	appropriate operation, and disengaging the device must not restart the machinery but only permit restarting.		P
	The emergency stop function must be available and operational at all times, regardless of the operating mode.		P
	Emergency stop devices must be a back-up to other safeguarding measures and not a substitute for them.		P
1.2.4.4.	Assembly of machinery		P
	In the case of machinery or parts of machinery designed to work together, the machinery must be designed and constructed in such a way that the stop controls, including the emergency stop devices, can stop not only the machinery itself but also all related equipment, if its continued operation may be dangerous.		P
1.2.5.	Selection of control or operating modes		P
	The control or operating mode selected must override all other control or operating modes, with the exception of the emergency stop.		P
	If machinery has been designed and constructed to allow its use in several control or operating modes requiring different protective measures and/or work procedures, it must be fitted with a mode selector which can be locked in each position.		P
	Each position of the selector must be clearly identifiable and must correspond to a single operating or control mode.		P
	The selector may be replaced by another selection method which restricts the use of certain functions of the machinery to certain categories of operator.		N/A



	If, for certain operations, the machinery must be able to operate with a guard displaced or removed and/or a protective device disabled, the control or operating mode selector must simultaneously: - disable all other control or operating modes, - permit operation of hazardous functions only by control devices requiring sustained action, - permit the operation of hazardous functions only in reduced risk conditions while preventing hazards from linked sequences, - prevent any operation of hazardous functions by voluntary or involuntary action on the machine's sensors.		N/A
	If these four conditions cannot be fulfilled simultaneously, the control or operating mode selector must activate other protective measures designed and constructed to ensure a safe intervention zone.		N/A
	In addition, the operator must be able to control operation of the parts he is working on from the adjustment point.		N/A
1.2.6	Failure of the power supply		P
	The interruption, the re-establishment after an interruption or the fluctuation in whatever manner of the power supply to the machinery must not lead to dangerous situations.		P
	Particular attention must be given to the following points: - the machinery must not start unexpectedly, - the parameters of the machinery must not change in an uncontrolled way when such change can lead to hazardous situations, - the machinery must not be prevented from stopping if the command has already been given, - no moving part of the machinery or piece held by the machinery must fall or be ejected, - automatic or manual stopping of the moving parts, whatever they may be, must be unimpeded, - the protective devices must remain fully effective or give a stop command.		P
1.3.	PROTECTION AGAINST MECHANICAL HAZARDS		P
1.3.1.	Loss of stability		P
	Machinery and its components and fittings must be stable enough to avoid overturning, falling or uncontrolled movements during transportation, assembly, dismantling and any other action involving the machinery.		P
	If the shape of the machinery itself or its intended installation does not offer sufficient stability, appropriate means of anchorage must be incorporated and indicated in the instructions.		P
1.3.2.	Risk of break-up during operation		P
	The various parts of machinery and their linkages must be able to withstand the stresses to which they are subject when used.		P



	The durability of the materials used must be adequate for the nature of the working environment foreseen by the manufacturer or his authorised representative, in particular as regards the phenomena of fatigue, ageing, corrosion and abrasion.		P
	The instructions must indicate the type and frequency of inspections and maintenance required for safety reasons. They must, where appropriate, indicate the parts subject to wear and the criteria for replacement.		P
	Where a risk of rupture or disintegration remains despite the measures taken, the parts concerned must be mounted, positioned and/or guarded in such a way that any fragments will be contained, preventing hazardous situations.		N/A
	Both rigid and flexible pipes carrying fluids, particularly those under high pressure, must be able to withstand the foreseen internal and external stresses and must be firmly attached and/or protected to ensure that no risk is posed by a rupture.		P
	Where the material to be processed is fed to the tool automatically, the following conditions must be fulfilled to avoid risks to persons: - when the workpiece comes into contact with the tool, the latter must have attained its normal working condition, - when the tool starts and/or stops (intentionally or accidentally), the feed movement and the tool movement must be coordinated.		P
1.3.3.	Risks due to falling or ejected objects		P
	Precautions must be taken to prevent risks from falling or ejected objects.		P
1.3.4.	Risks due to surfaces, edges or angles		P
	Insofar as their purpose allows, accessible parts of the machinery must have no sharp edges, no sharp angles and no rough surfaces likely to cause injury.		P
1.3.5.	Risks related to combined machinery		N
	Where the machinery is intended to carry out several different operations with manual removal of the piece between each operation (combined machinery), it must be designed and constructed in such a way as to enable each element to be used separately without the other elements constituting a risk for exposed persons.		N
	For this purpose, it must be possible to start and stop separately any elements that are not protected.		N
1.3.6.	Risks related to variations in operating conditions		P



	Where the machinery performs operations under different conditions of use, it must be designed and constructed in such a way that selection and adjustment of these conditions can be carried out safely and reliably.		P
1.3.7.	Risks related to moving parts		P
	The moving parts of machinery must be designed and constructed in such a way as to prevent risks of contact which could lead to accidents or must, where risks persist, be fitted with guards or protective devices.		P
	All necessary steps must be taken to prevent accidental blockage of moving parts involved in the work. In cases where, despite the precautions taken, a blockage is likely to occur, the necessary specific protective devices and tools must, when appropriate, be provided to enable the equipment to be safely unblocked.		P
	The instructions and, where possible, a sign on the machinery shall identify these specific protective devices and how they are to be used.		P
1.3.8.	Choice of protection against risks arising from moving parts		P
	Guards or protective devices designed to protect against risks arising from moving parts must be selected on the basis of the type of risk. The following guidelines must be used to help to make the choice.		P
1.3.8.1.	Moving transmission parts		N/A
	Guards designed to protect persons against the hazards generated by moving transmission parts must be: - either fixed guards as referred to in section 1.4.2.1, or - interlocking movable guards as referred to in section 1.4.2.2.		N/A
	Interlocking movable guards should be used where frequent access is envisaged.		N/A
1.3.8.2.	Moving parts involved in the process		P
	Guards or protective devices designed to protect persons against the hazards generated by moving parts involved in the process must be: - either fixed guards as referred to in section 1.4.2.1, or - interlocking movable guards as referred to in section 1.4.2.2, or - protective devices as referred to in section 1.4.3, Or - a combination of the above.		P



	However, when certain moving parts directly involved in the process cannot be made completely inaccessible during operation owing to operations requiring operator intervention, such parts must be fitted with: - fixed guards or interlocking movable guards preventing access to those sections of the parts that are not used in the work, and - adjustable guards as referred to in section 1.4.2.3 restricting access to those sections of the moving parts where access is necessary.		P
1.3.9	Risks of uncontrolled movements		N/A
	When a part of the machinery has been stopped, any drift away from the stopping position, for whatever reason other than action on the control devices, must be prevented or must be such that it does not present a hazard.		N/A
1.4.	REQUIRED CHARACTERISTICS OF GUARDS AND PROTECTIVE DEVICES		P
1.4.1.	General requirement		P
	Guards and protective devices must: - be of robust construction, - be securely held in place, - not give rise to any additional hazard, - not be easy to by-pass or render non-operational, - be located at an adequate distance from the danger zone, - cause minimum obstruction to the view of the production process, and - enable essential work to be carried out on the installation and/or replacement of tools and for maintenance purposes by restricting access exclusively to the area where the work has to be done, if possible without the guard having to be removed or the protective device having to be disabled.		P
	In addition, guards must, where possible, protect against the ejection or falling of materials or objects and against emissions generated by the machinery.		P
1.4.2.	Special requirements for guards		P
1.4.2.1.	Fixed guards		P
	Fixed guards must be fixed by systems that can be opened or removed only with tools.		P
	Their fixing systems must remain attached to the guards or to the machinery when the guards are removed.		P
	Where possible, guards must be incapable of remaining in place without their fixings.		P
1.4.2.2.	Interlocking moveable guards		N/A
	Interlocking movable guards must: - as far as possible remain attached to the machinery when open, - be designed and constructed in such a way that they can be adjusted only by means of an intentional action.		N/A



	Interlocking movable guards must be associated with an interlocking device that: - prevents the start of hazardous machinery functions until they are closed and - gives a stop command whenever they are no longer closed.		N/A
	Where it is possible for an operator to reach the danger zone before the risk due to the hazardous machinery functions has ceased, movable guards must be associated with a guard locking device in addition to an interlocking device that: - prevents the start of hazardous machinery functions until the guard is closed and locked, and - keeps the guard closed and locked until the risk of injury from the hazardous machinery functions has ceased.		N/A
	Interlocking movable guards must be designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous machinery functions.		N/A
1.4.2.3.	Adjustable guards restricting access		P
	Adjustable guards restricting access to those areas of the moving parts strictly necessary for the work must be: - adjustable manually or automatically, depending on the type of work involved, and - readily adjustable without the use of tools.		P
1.4.3.	Special requirements for protection devices		N/A
	Protective devices must be designed and incorporated into the control system in such a way that: - moving parts cannot start up while they are within the operator's reach, - persons cannot reach moving parts while the parts are moving, and - the absence or failure of one of their components prevents starting or stops the moving parts.		N/A
	Protective devices must be adjustable only by means of an intentional action.		N/A
1.5.	RISK DUE TO OTHER HAZARDS		P
1.5.1.	Electricity supply		P
	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.		P
	The safety objectives set out in Directive 73/23/EEC(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.		P
1.5.2.	Static electricity		P



	Machinery must be designed and constructed to prevent or limit the build-up of potentially dangerous electrostatic charges and/or be fitted with a discharging system.		P
1.5.3.	Energy supply other than electricity		P
	Where machinery is powered by source of energy other than electricity, it must be so designed, constructed and equipped as to avoid all potential risks associated with such sources of energy.		P
1.5.4.	Errors of fitting		P
	Errors likely to be made when fitting or refitting certain parts which could be a source of risk must be made impossible by the design and construction of such parts or, failing this, by information given on the parts themselves		P
	and/or their housings. The same information must be given on moving parts and/or their housings where the direction of movement needs to be known in order to avoid a risk.		P
	Where necessary, the instructions must give further information on these risks.		P
	Where a faulty connection can be the source of risk, incorrect connections must be made impossible by design or, failing this, by information given on the elements to be connected and, where appropriate, on the means of connection.		P
1.5.5.	Extreme temperatures		P
	Steps must be taken to eliminate any risk of injury arising from contact with or proximity to machinery parts or materials at high or very low temperatures.		N/A
	The necessary steps must also be taken to avoid or protect against the risk of hot or very cold material being ejected.		N/A
1.5.6.	Fire		N/A
	Machinery must be designed and constructed in such a way as to avoid any risk of fire or overheating posed by the machinery itself or by gases, liquids, dust, vapours or other substances produced or used by the machinery.		P
1.5.7.	Explosion		P
	Machinery must be designed and constructed in such a way as to avoid any risk of explosion posed by the machinery itself or by gases, liquids, dust, vapours or other substances produced or used by the machinery.		P
	Machinery must comply, as far as the risk of explosion due to its use in a potentially explosive atmosphere is concerned, with the provisions of the specific Community Directives.		P
1.5.8.	Noise		P
	Machinery is so designed and constructed that risks resulting from the emission of airborne noise are reduced to the lowest level taking account of technical progress and the availability of means of reducing noise, in particular at source.		P



	The level of noise emission may be assessed with reference to comparative emission data for similar machinery.		P
1.5.9.	Vibrations		P
	Machinery must be designed and constructed in such a way that risks resulting from vibrations produced by the machinery are reduced to the lowest level, taking account of technical progress and the availability of means of reducing vibration, in particular at source.		P
	The level of vibration emission may be assessed with reference to comparative emission data for similar machinery.		P
1.5.10.	Radiation		P
	Undesirable radiation emissions from the machinery must be eliminated or be reduced to levels that do not have adverse effects on persons.		P
	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.		P
	Any functional non-ionising radiation emissions during setting, operation and cleaning must be limited to levels that do not have adverse effects on persons.		P
1.5.11.	External radiation		P
	Machinery must be designed and constructed in such a way that external radiation does not interfere with its operation.		P
1.5.12.	Laser radiation		N/A
	Where laser equipment is used, the following should be taken into account: - laser equipment on machinery must be designed and constructed in such a way as to prevent any accidental radiation, - laser equipment on machinery must be protected in such a way that effective radiation, radiation produced by reflection or diffusion and secondary radiation do not damage health, - optical equipment for the observation or adjustment of laser equipment on machinery must be such that no health risk is created by laser radiation.		N/A
1.5.13.	Emission of hazardous materials and substances		P
	Machinery must be designed and constructed in such a way that risks of inhalation, ingestion, contact with the skin, eyes and mucous membranes and penetration through the skin of hazardous materials and substances which it produces can be avoided.		P



	Where a hazard cannot be eliminated, the machinery must be so equipped that hazardous materials and substances can be contained, evacuated, precipitated by water spraying, filtered or treated by another equally effective method.		N/A
	Where the process is not totally enclosed during normal operation of the machinery, the devices for containment and/or evacuation must be situated in such a way as to have the maximum effect.		N/A
1.5.14.	Risk of being trapped in a machine		P
	Machinery must be designed, constructed or fitted with a means of preventing a person from being enclosed within it or, if that is impossible, with a means of summoning help.		P
1.5.15.	Risk of slipping, tripping or falling		N/A
	Parts of the machinery where persons are liable to move about or stand must be designed and constructed in such a way as to prevent persons slipping, tripping or falling on or off these parts.		N/A
	Where appropriate, these parts must be fitted with handholds that are fixed relative to the user and that enable them to maintain their stability.		N/A
1.5.16.	Lightning		P
	Machinery in need of protection against the effects of lightning while being used must be fitted with a system for conducting the resultant electrical charge to earth.		P
1.6.	MAINTENANCE		P
1.6.1.	Machinery maintenance		P
	Adjustment and maintenance points must be located outside danger zones. It must be possible to carry out adjustment, maintenance, repair, cleaning and servicing operations while machinery is at a standstill.		P
	If one or more of the above conditions cannot be satisfied for technical reasons, measures must be taken to ensure that these operations can be carried out safely (see section 1.2.5).		P
	In the case of automated machinery and, where necessary, other machinery, a connecting device for mounting diagnostic fault-finding equipment must be provided.		N/A
	Automated machinery components which have to be changed frequently must be capable of being removed and replaced easily and safely. Access to the components must enable these tasks to be carried out with the necessary technical means in accordance with a specified operating method.		N/A
1.6.2.	Access to operating position and serving points		P
	Machinery must be designed and constructed in such a way as to allow access in safety to all areas where intervention is necessary during operation, adjustment and maintenance of the machinery.		P
1.6.3.	Isolation of energy sources		P



	Machinery must be fitted with means to isolate it from all energy sources. Such isolators must be clearly identified. They must be capable of being locked if reconnection could endanger persons. Isolators must also be capable of being locked where an operator is unable, from any of the points to which he has access, to check that the energy is still cut off.		P
	In the case of machinery capable of being plugged into an electricity supply, removal of the plug is sufficient, provided that the operator can check from any of the points to which he has access that the plug remains removed.		P
	After the energy is cut off, it must be possible to dissipate normally any energy remaining or stored in the circuits of the machinery without risk to persons.		P
	As an exception to the requirement laid down in the previous paragraphs, certain circuits may remain connected to their energy sources in order, for example, to hold parts, to protect information, to light interiors, etc. In this case, special steps must be taken to ensure operator safety.		N/A
1.6.4.	Operator intervention		P
	Machinery must be so designed, constructed and equipped that the need for operator intervention is limited. If operator intervention cannot be avoided, it must be possible to carry it out easily and safely.		P
1.6.5.	Cleaning of internal parts		P
	The machinery must be designed and constructed in such a way that it is possible to clean internal parts which have contained dangerous substances or preparations without entering them; any necessary unblocking must also be possible from the outside. If it is impossible to avoid entering the machinery, it must be designed and constructed in such a way as to allow cleaning to take place safely.		P
1.7.	INFORMATION		P
1.7.1.	Information and warnings on the machinery		P
	Information and warnings on the machinery should preferably be provided in the form of readily understandable symbols or pictograms. Any written or verbal information and warnings must be expressed in an official Community language or languages, which may be determined in accordance with the Treaty by the Member State in which the machinery is placed on the market and/or put into service and may be accompanied, on request, by versions in any other official Community language or languages understood by the operators.		P
1.7.1.1.	Information and information devices		P



	The information needed to control machinery must be provided in a form that is unambiguous and easily understood. It must not be excessive to the extent of overloading the operator.		P
	Visual display units or any other interactive means of communication between the operator and the machine must be easily understood and easy to use.		P
1.7.1.2.	Warning devices		P
	Where the health and safety of persons may be endangered by a fault in the operation of unsupervised machinery, the machinery must be equipped in such a way as to give an appropriate acoustic or light signal as a warning.		P
	Where machinery is equipped with warning devices these must be unambiguous and easily perceived. The operator must have facilities to check the operation of such warning devices at all times.		P
	The requirements of the specific Community Directives concerning colours and safety signals must be complied with.		N/A
1.7.2.	Warning of residual risks		P
	Where risks remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted, the necessary warnings, including warning devices, must be provided.		P
1.7.3.	Marking of machinery		P
	All machinery must be marked visibly, legibly and indelibly with the following minimum particulars: - the business name and full address of the manufacturer and, where applicable, his authorised representative, - designation of the machinery, - the CE Marking (see Annex III), - designation of series or type, - serial number, if any, - the year of construction, that is the year in which the manufacturing process is completed.		P
	It is prohibited to pre-date or post-date the machinery when affixing the CE marking.		P
	Furthermore, machinery designed and constructed for use in a potentially explosive atmosphere must be marked accordingly.		N/A
	Machinery must also bear full information relevant to its type and essential for safe use. Such information is subject to the requirements set out in section 1.7.1.		P
	Where a machine part must be handled during use with lifting equipment, its mass must be indicated legibly, indelibly and unambiguously.		P
1.7.4.	Instructions		P
	All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market and/or put into service.		P



	The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions.		P
	By way of exception, the maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand.		P
	The instructions must be drafted in accordance with the principles set out below.		P
1.7.4.1.	General principles for the drafting of instructions		P
	(a) The instructions must be drafted in one or more official Community languages. The words 'Original instructions' must appear on the language version(s) verified by the manufacturer or his authorized representative.		P
	(b) Where no 'Original instructions' exist in the official language(s) of the country where the machinery is to be used, a translation into that/those language(s) must be provided by the manufacturer or his authorized representative or by the person bringing the machinery into the language area in question. The translations must bear the words 'Translation of the original instructions'.		P
	(c) The contents of the instructions must cover not only the intended use of the machinery but also take into account any reasonably foreseeable misuse thereof.		P
	(d) In the case of machinery intended for use by non-professional operators, the wording and layout of the instructions for use must take into account the level of general education and acumen that can reasonably be expected from such operators.		P
1.7.4.2	Contents of the instructions		P
	Each instruction manual must contain, where applicable, at least the following information:		P
	(a) the business name and full address of the manufacturer and of his authorised representative;		P
	(b) the designation of the machinery as marked on the machinery itself, except for the serial number (see section 1.7.3);		P
	(c) the EC declaration of conformity, or a document setting out the contents of the EC declaration of conformity, showing the particulars of the machinery, not necessarily including the serial number and the signature;		P
	(d) a general description of the machinery;		P
	(e) the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning;		P



	(f) a description of the workstation(s) likely to be occupied by operators;		P
	(g) a description of the intended use of the machinery;		P
	(h) warnings concerning ways in which the machinery must not be used that experience has shown might occur;		P
	(i) assembly, installation and connection instructions, including drawings, diagrams and the means of attachment and the designation of the chassis or installation on which the machinery is to be mounted;		P
	(j) instructions relating to installation and assembly for reducing noise or vibration;		P
	(k) instructions for the putting into service and use of the machinery and, if necessary, instructions for the training of operators;		P
	(l) information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted;		P
	(m) instructions on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided;		P
	(n) the essential characteristics of tools which may be fitted to the machinery;		P
	(o) the conditions in which the machinery meets the requirement of stability during use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns;		P
	(p) instructions with a view to ensuring that transport, handling and storage operations can be made safely, giving the mass of the machinery and of its various parts where these are regularly to be transported separately;		P
	(q) the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur, the operating method to be followed so as to enable the equipment to be safely unblocked;		P
	(r) the description of the adjustment and maintenance operations that should be carried out by the user and the preventive maintenance measures that should be observed;		P
	(s) instructions designed to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations;		P
	(t) the specifications of the spare parts to be used, when these affect the health and safety of operators;		P
	(u) the following information on airborne noise emissions: - the A-weighted emission sound pressure level at workstations, where this exceeds 70 dB(A); where this level does not exceed 70 dB(A), this fact must be indicated,		P



	- the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 µPa),		P
	— the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A).		N/A
	These values must be either those actually measured for the machinery in question or those established on the basis of measurements taken for technically comparable machinery which is representative of the machinery to be produced.		N/A
	In the case of very large machinery, instead of the A-weighted sound power level, the A-weighted emission sound pressure levels at specified positions around the machinery may be indicated.		N/A
	Where the harmonised standards are not applied, sound levels must be measured using the most appropriate method for the machinery. Whenever sound emission values are indicated the uncertainties surrounding these values must be specified. The operating conditions of the machinery during measurement and the measuring methods used must be described.		P
	Where the workstation(s) are undefined or cannot be defined, A-weighted sound pressure levels must be measured at a distance of 1 metre from the surface of the machinery and at a height of 1,6 metres from the floor or access platform. The position and value of the maximum sound pressure must be indicated.		P
	Where specific Community Directives lay down other requirements for the measurement of sound pressure levels or sound power levels, those Directives must be applied and the corresponding provisions of this section shall not apply;		N/A
	(v) where machinery is likely to emit non-ionising radiation which may cause harm to persons, in particular persons with active or non-active implantable medical devices, information concerning the radiation emitted for the operator and exposed persons.		N/A
1.7.4.3.	Sales literature		N/A
	Sales literature describing the machinery must not contradict the instructions as regards health and safety aspects. Sales literature describing the performance characteristics of machinery must contain the same information on emissions as is contained in the instructions.		N/A
1.8	Test methods		P
1.8.1	General		P
	Compliance with the requirements specified in tables 1 and 2 is checked according to the following methods as appropriate.		P
1.8.2	Pouring		N/A



	A cup with a mouth opening of between 6cm and 8 cm diameter is above a sheet of white paper of 200mm x 200mm. When black tea or coffee is poured out of an insulated container from a height of 5 cm , measured from the pouring edge to the rim at the approximate centre of the cup, no stains caused by spluttering shall appear on the paper		N/A
1.8.3	Stability		N/A
	The insulated container shall not overbalance when placed on its base on a plane inclined at 10°to the horizontal in any orientation and at any level of filling from empty up to, and including,its nominal capacity.		P
1.8.4	Heat loss		P
	Pre-heat the container for (5±1) min by filling it to its nominal capacity with hot water at ≥95°C. Apply the stopper. After leaving the container for 6h ± 5min at a temperature of (20±2)°C,check the temperature of the water.		P
1.8.5	Thermal shock		P
	Fill the insulated container to its nominal capacity with water at(15±1)°C.Leave for 5 min, empty, and re-fill to its nominal capacity with water at(95±2)°C for 5min. Empty, and check if the filler is still intact.		P
1.9	Stopper leakage		P
1.9.1	Stopper leakage for flasks		P
	Fill the container to 75% of its nominal capacity with boiling water containing 0,5% of a surfactant. Close stopper with a torque of 2 Nm or, if not fitted with a screwed stopper,push in the stopper to its furthest extent. Put the container in an upside-down position for at least 10 minutes. No drops shall appear on the stopper, spout or casing.		P



Photo Documents

Photo 1

View:

- ☒ Front
- ☐ Rear
- ☐ Right side
- ☐ Left side
- ☐ Top
- ☐ Bottom
- ☐ Internal



Photo 2

View:

- ☒ Front
- ☐ Rear
- ☐ Right side
- ☐ Left side
- ☐ Top
- ☐ Bottom
- ☐ Internal





Photo 3

View:

- ☒ Front
- ☐ Rear
- ☐ Right side
- ☐ Left side
- ☐ Top
- ☐ Bottom
- ☐ Internal



Photo 4

View:

- ☒ Front
- ☐ Rear
- ☐ Right side
- ☐ Left side
- ☐ Top
- ☐ Bottom
- ☐ Internal





Photo 5

View:

- ☒ Front
- ☐ Rear
- ☐ Right side
- ☐ Left side
- ☐ Top
- ☐ Bottom
- ☐ Internal

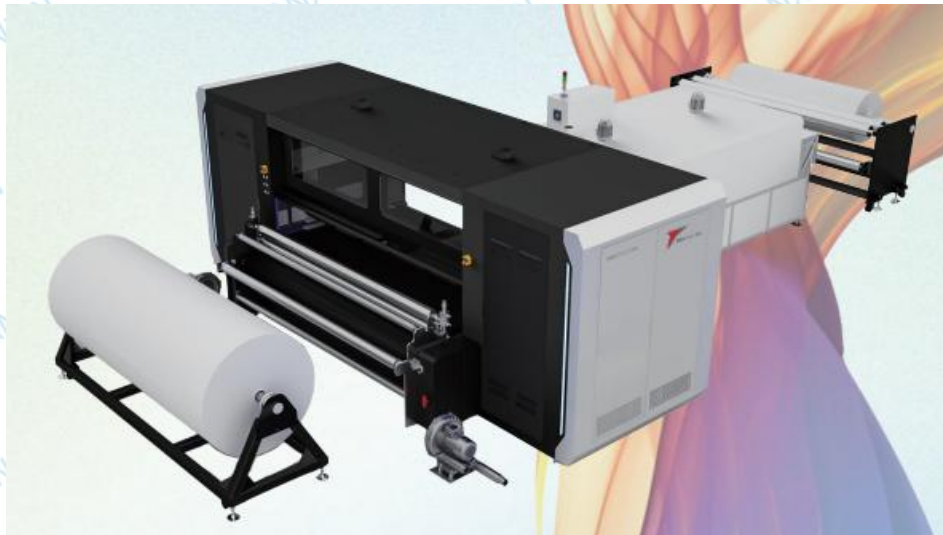


Photo 6

View:

- ☒ Front
- ☐ Rear
- ☐ Right side
- ☐ Left side
- ☐ Top
- ☐ Bottom
- ☐ Internal



--END--

