Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		guidance from the cable supplier should be sought. It is important to give special attention to the integrity of a circuit having a safety-related function. The insulation of cables and conductors used, shall be suitable for a test voltage: – not less than 2 000 V a.c. for a duration of 5 min for operation at voltages higher than 50 V a.c. or 120 V d.c., or – not less than 500 V a.c. for a duration of 5 min for PELV circuits (see IEC 60364-4-41, class III equipment). The mechanical strength and thickness of the insulation shall be such that the insulation cannot be damaged in operation or during laying, especially for cables pulled into ducts.				
	12.4	**Current-carrying capacity in normal service** 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. NOTE 1 Detailed information and further guidance can be found in IEC 60364-5-52, in some national standards or given by the manufacturer. 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 inTable 6. NOTE 2 For specific applications where the correct cable dimensioning can depend on the relationship between the period of the duty cycle and the thermal time constant of the cable (for example starting against high-inertia load, intermittent duty), the cable manufacturer should be consulted.	☑			
	12.5	**Conductor and cable voltage drop** The voltage drop from the point of supply to the load shall not exceed 5 % of the nominal voltage under normal operating conditions. In order to conform to this requirement, it can be necessary to use conductors having a larger cross-sectional area than that derived from Table 6.	☑			
	12.6 **12.6.1**	**Flexible cables** **General** Flexible cables shall have Class 5 or Class 6 conductors. NOTE 1 Class 6 conductors have smaller diameter strands and are more flexible than Class 5 conductors (see Table D.4). Cables that are subjected to severe duties shall be of adequate construction to protect against:	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		– abrasion due to mechanical handling and dragging across rough surfaces; – kinking due to operation without guides; – stress resulting from guide rollers and forced guiding, being wound and re-wound on cable drums. NOTE 2 Cables for such conditions are specified in relevant national standards. NOTE 3 The operational life of the cable will be reduced where unfavourable operating conditions such as high tensile stress, small radii, bending into another plane and/or where frequent duty cycles coincide.				
	12.6.2	**Mechanical rating** The cable handling system of the machine shall be so designed to keep the tensile stress of the conductors as low as is practicable during machine operations. Where copper conductors are used, the tensile stress applied to the conductors shall not exceed 15 N/mm2 of the copper cross-sectional area. Where the demands of the application exceed the tensile stress limit of 15 N/mm2, cables with special construction features should be used and the allowed maximal tensile stress should be agreed with the cable manufacturer. The maximum stress applied to the conductors of flexible cables with material other than copper shall be within the cable manufacturer's specification. NOTE The following conditions affect the tensile stress on the conductors: – acceleration forces; – speed of motion; – dead (hanging) weight of the cables; – method of guiding; – design of cable drum system.	☑			
	12.6.3	**Current-carrying capacity of cables wound on drums** Cables to be wound on drums shall be selected with conductors having a cross-sectional area such that, when fully wound on the drum and carrying the normal service load, the maximum allowable conductor temperature is not exceeded. For cables of circular cross-sectional area installed on drums, the maximum current-carrying capacity in free air should be derated in accordance with Table 7 (see also Clause 44 of IEC 60621-3). NOTE The current-carrying capacity of cables in free air can be found in manufacturers' specifications or in relevant national standards.			☑	
	12.7 **12.7.1**	**Conductor wires, conductor bars and slip-ring assemblies** **Protection against direct contact**	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	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: – protection by partial insulation of live parts, or where this is not practicable; – protection by enclosures or barriers of at least IP2X (see 412.2 of IEC 60364-4-41). Horizontal top surfaces of barriers or enclosures that are readily accessible shall provide a degree of protection of at least IP4X (see 412.2.2 of IEC 60364-4-41). Where the required degree of protection is not achieved, protection by placing live parts out of reach in combination with emergency switching off in accordance with 9.2.5.4.3 shall be applied. 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; – prevent damage from a swinging load.				
	12.7.2	**Protective conductor circuit** Where conductor wires, conductor bars and slip-ring assemblies are installed as part of the protective bonding circuit, they shall not carry current in normal operation. Therefore, the protective conductor (PE) and the neutral conductor (N) shall each use a separate conductor wire, conductor bar or slip-ring. The continuity of the protective conductor circuit using sliding contacts shall be ensured by taking appropriate measures (for example, duplication of the current collector, continuity monitoring).	☑			
	12.7.3	**Protective conductor current collectors** Protective conductor current collectors shall have a shape or construction so that they are not interchangeable with the other current collectors. Such current collectors shall be of the sliding contact type.			☑	
	12.7.4	**Removable current collectors with a disconnector function** Removable current collectors having a disconnector function shall be so designed that the protective conductor circuit is interrupted only after the live conductors have been disconnected, and the continuity of the protective conductor circuit is re-established before any live conductor is reconnected (see also 8.2.4).			☑	
	12.7.5	**Clearances in air** Clearances between the respective conductors, and between adjacent systems, of conductor wires, conductor bars, slip-ring assemblies and their current collectors shall be suitable for at least a rated impulse voltage of an overvoltage category III in			☑	

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		accordance with IEC 60664-1.				
	12.7.6	**Creepage distances** Creepage distances between the respective conductors, between adjacent systems of conductor wires, conductor bars and slip-ring assemblies, and their current collectors shall be suitable for operation in the intended environment, for example open air (IEC 60664-1), inside buildings, protected by enclosures. In abnormally dusty, moist or corrosive environments, the following creepage distance requirements apply: – unprotected conductor wires, conductor bars, and slip-ring assemblies shall be equipped with insulators with a minimum creepage distance of 60 mm; – enclosed conductor wires, insulated multipole conductor bars and insulated individual conductor bars shall have a minimum creepage distance of 30 mm. The manufacturer's recommendations shall be followed regarding special measures to prevent a gradual reduction in the insulation values due to unfavourable ambient conditions (for example deposits of conductive dust, chemical attack).			☑	
	12.7.7	**Conductor system sectioning** Where conductor wires or conductor bars are arranged so that they can be divided into isolated sections, suitable design measures shall be employed to prevent the energization of adjacent sections by the current collectors themselves.			☑	
	12.7.8	**Construction and installation of conductor wire, conductor bar systems and slip-ring assemblies** Conductor wires, conductor bars and slip-ring assemblies in power circuits shall be grouped separately from those in control circuits. Conductor wires, conductor bars and slip-ring assemblies shall be capable of withstanding, without damage, the mechanical forces and thermal effects of short-circuit currents Removable covers for conductor wire and conductor bar systems laid underground or underfloor shall be so designed that they cannot be opened by one person without the aid of a tool. Where conductor bars are installed in a common metal enclosure, the individual sections of the enclosure shall be bonded together and connected to a protective bonding conductor at several points depending upon their length. Metal covers of conductor bars laid underground or underfloor shall also be bonded together and connected to a protective bonding conductor. The protective bonding circuit shall include the covers or cover plates of metal enclosures or underfloor ducts. Where metal hinges form a part of the bonding circuit, their continuity shall be verified (see Clause 18).			☑	

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		Underground and underfloor conductor bar ducts shall have drainage facilities.				
13		**Wiring practices**				
	13.1 **13.1.1**	**Connections and routing** **General requirements** All connections, especially those of the protective bonding circuit, shall be secured against accidental loosening. The means of connection shall be suitable for the cross-sectional areas and nature of the conductors being terminated. The connection of two or more conductors to one terminal is permitted only in those cases where the terminal is designed for that purpose. However, only one protective conductor shall be connected to one terminal connecting point. Soldered connections shall only be permitted where terminals are provided that are suitable for soldering. Terminals on terminal blocks shall be plainly marked or labelled to correspond with markings on the diagrams. 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. The installation of flexible conduits and cables shall be such that liquids shall drain away from the fittings. 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. Shielded conductors shall be so terminated as to prevent fraying of strands and to permit easy disconnection. Identification tags shall be legible, permanent, and appropriate for the physical environment. Terminal blocks shall be mounted and wired so that the internal and external wiring does not cross over the terminals (see IEC 60947-7-1).	☑			Wiring conforms to these requirements.
	13.1.2	**Conductor and cable runs** Conductors and cables shall be run from terminal to terminal without splices or joints. Connections using plug/socket combinations with suitable protection against accidental disconnection are not considered to be joints for the purpose of this Subclause.	☑			Proper connection method is used.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		Exception: Where it is impracticable to provide terminals in a junction box (for example on mobile machines, on machines having long flexible cables; cable connections exceeding a length which is not practical to be supplied by the cable manufacturer on one cable drum; repair of cable due to mechanical stresses during installation and operation), splices or joints may be used. Where it is necessary to connect and disconnect cables and cable assemblies, a sufficient extra length shall be provided for that purpose. The terminations of cables shall be adequately supported to prevent mechanical stresses at the terminations of the conductors. Wherever practicable, the protective conductor shall be placed close to the associated live conductors in order to decrease the impedance of the loop.				
	13.1.3	**Conductors of different circuits** Conductors of different circuits may be laid side by side, may occupy the same duct (for example conduit, cable trunking system), or may be in the same multiconductor cable provided that the arrangement does not impair the proper functioning of the respective circuits. Where those circuits operate at different voltages, the conductors shall be separated by suitable barriers or shall be insulated for the highest voltage to which any conductor within the same duct can be subjected, for example line to line voltage for unearthed systems and phase to earth voltage for earthed systems.	☑			
	13.1.4	**Connection between pick-up and pick-up converter of an inductive power supply system** The cable between the pick-up and the pick-up converter as specified by the manufacturer of the inductive power supply shall be: – as short as practicable; – adequately protected against mechanical damage. NOTE The output of the pick-up can be a current source, therefore damage to the cable can result in a high voltage hazard.			☑	
	13.2 **13.2.1**	**Identification of conductors** **General requirements** Each conductor shall be identifiable at each termination in accordance with the technical documentation (see Clause 17). It is recommended (for example to facilitate maintenance) that conductors be identified by number, alphanumeric, colour (either solid or with one or more stripes), or a combination of colour and numbers or alphanumeric. When numbers are used, they shall be Arabic; letters shall be Roman (either upper or lower case).	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		NOTE Annex B can be used for agreement between supplier and user regarding a preferred method of identification.				
	13.2.2	**Identification of the protective conductor** The protective conductor shall be readily distinguishable by shape, location, marking, or colour. When identification is by colour alone, the bicolour combination GREEN-AND-YELLOW shall be used throughout the length of the conductor. This colour identification is strictly reserved for the protective conductor. For insulated conductors, the bicolour combination GREEN-AND-YELLOW shall be such that on any 15 mm length, one of the colours covers at least 30 % and not more than 70 % of the surface of the conductor, the other colour covering the remainder of the surface. Where the protective conductor can be easily identified by its shape, position, or construction (for example a braided conductor, uninsulated stranded conductor), or where the insulated conductor is not readily accessible, colour coding throughout its length is not necessary but the ends or accessible locations shall be clearly identified by the graphical symbol IEC 60417-5019 (DB:2002-10) or by the bicolour combination GREEN-AND-YELLOW.	☑			GREEN-AND-YELLOW
	13.2.3	**Identification of the neutral conductor** Where a circuit includes a neutral conductor that is identified by colour alone, the colour used for this conductor shall be BLUE. In order to avoid confusion with other colours, it is recommended that an unsaturated blue be used, called here “light blue” (see 3.2.2 of IEC 60446). Where the selected colour is the sole identification of the neutral conductor, that colour shall not be used for identifying any other conductor where confusion is possible. Where identification by colour is used, bare conductors used as neutral conductors shall be either coloured by a stripe, 15 mm to 100 mm wide in each compartment or unit and at each accessible location, or coloured throughout their length.	☑			Blue
	13.2.4	**Identification by colour** Where colour-coding is used for identification of conductors (other than the protective conductor (see 13.2.2) and the neutral conductor (see 13.2.3)), the following colours may be used: BLACK, BROWN, RED, ORANGE, YELLOW, GREEN, BLUE (including LIGHT BLUE), VIOLET, GREY, WHITE, PINK, TURQUOISE. NOTE This list of colours is derived from IEC 60757. It is recommended that, where colour is used for identification, the colour be used throughout the length of the conductor either by the colour of the insulation or by	☑			The recommended color-coded is used.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		colour markers at regular intervals and at the ends or accessible location. For safety reasons, the colour GREEN or the colour YELLOW should not be used where there is a possibility of confusion with the bicolour combination GREEN-AND-YELLOW (see 13.2.2). Colour identification using combinations of those colours listed above may be used provided there can be no confusion and that GREEN or YELLOW is not used except in the bicolour combination GREEN-AND-YELLOW. Where colour-coding is used for identification of conductors, it is recommended that they be colour-coded as follows: – BLACK: a.c. and d.c. power circuits; – RED: a.c. control circuits; – BLUE: d.c. control circuits; – ORANGE: excepted circuits in accordance with 5.3.5. **Exceptions:** to the above are permitted where: – insulation is used that is not available in the colours recommended; or – multiconductor cable is used, but not the bicolour combination GREEN-AND-YELLOW.				
	13.3	**Wiring inside enclosures** Conductors inside enclosures shall be supported where necessary to keep them in place. Non-metallic ducts shall be permitted only when they are made with a flame-retardant insulating material (see the IEC 60332 series). It is recommended that electrical equipment mounted inside enclosures be designed and constructed in such a way as to permit modification of the wiring from the front of the enclosure (see also 11.2.1). Where that is not practicable and control devices are connected from the rear of the enclosure, access doors or swingout panels shall be provided. 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 part. The conductors shall be anchored to the fixed part and to the movable part independently of the electrical connection (see also 8.2.3 and 11.2.1). Conductors and cables that do not run in ducts shall be adequately supported. 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. Power cables and cables of measuring circuits may be directly connected to the terminals of the devices for which the connections were intended.	☑			Wiring inside enclosures meets these requirments.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
	13.4 **13.4.1**	**Wiring outside enclosures** **General requirements** 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 (see 11.3).	☑			
	13.4.2	**External ducts** Conductors and their connections external to the electrical equipment enclosure(s) shall be enclosed in suitable ducts (i.e. conduit or cable trunking systems) as described in 13.5 except for suitably protected cables that may be installed without ducts and with or without the use of open cable trays or cable support means. Where devices such as position switches or proximity switches are supplied with a dedicated cable, their cable need not be enclosed in a duct when the cable is suitable for the purpose, sufficiently short, and so located or protected, that the risk of damage is minimized. Fittings used with ducts or multiconductor cable shall be suitable for the physical environment. Flexible conduit or flexible multiconductor cable shall be used where it is necessary to employ flexible connections to pendant push-button stations. The weight of the pendant stations shall be supported by means other than the flexible conduit or the flexible multiconductor cable, except where the conduit or cable is specifically designed for that purpose.	☑			
	13.4.3	**Connection to moving elements of the machine** Connections to frequently moving parts shall be made using conductors in accordance with 12.2 and 12.6. Flexible cable and flexible conduit shall be so installed as to avoid excessive flexing and straining, particularly at the fittings. Cables subject to movement shall be supported in such a way that there is no mechanical strain on the connection points nor any sharp flexing. When this is achieved by the provision of a loop, it shall have sufficient length to provide for a bending radius of the cable of at least 10 times the diameter of the cable. Flexible cables of machines shall be so installed or protected as to minimize the possibility of external damage due to factors that include the following cable use or potential abuse: – being run over by the machine itself; – being run over by vehicles or other machines; – coming into contact with the machine structure during movements; – running in and out of cable baskets, or on or off cable drums; – acceleration forces and wind forces on festoon systems or suspended cables;			☑	

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		– excessive rubbing by cable collector; – exposure to excessive radiated heat. The cable sheath shall be resistant to the normal wear that can be expected from movement and to the effects of environmental contaminants (for example oil, water, coolants, dust). Where cables subject to movement are close to moving parts, precautions shall be taken to maintain a space of at least 25 mm between the moving parts and the cables. Where that distance is not practicable, fixed barriers shall be provided between the cables and the moving parts. The cable handling system shall be so designed that lateral cable angles do not exceed 5 , avoiding torsion in the cable when: – being wound on and off cable drums; and – approaching and leaving cable guidance devices. Measures shall be taken to ensure that at least two turns of flexible cables always remain on a drum. Devices serving to guide and carry a flexible cable shall be so designed that the inner bending radius at all points where the cable is bent is not less than the values given in Table 8, unless otherwise agreed with the cable manufacturer, taking into account the permissible tension and the expected fatigue life. The straight section between two bends shall be at least 20 times the diameter of the cable. Where flexible conduit is adjacent to moving parts, the construction and supporting means shall prevent damage to the flexible conduit under all conditions of operation. Flexible conduit shall not be used for connections subject to rapid or frequent movements except when specifically designed for that purpose.				
	13.4.4	**Interconnection of devices on the machine** Where several machine-mounted switching devices (for example position sensors, pushbuttons) are connected in series or in parallel, it is recommended that the connections between those devices be made through terminals forming intermediate test points. Such terminals shall be conveniently placed, adequately protected, and shown on the relevant diagram s.	☑			
	13.4.5	**Plug/socket combinations** Where plug/socket combinations are provided, they shall fulfil one or more of the following requirements as applicable:			☑	

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		Exception: The following requirements do not apply to components or devices inside an enclosure, terminated by fixed plug/socket combinations (no flexible cable), or components connected to a bus system by a plug/socket combination. a) When installed correctly in accordance with f), plug/socket combinations shall be of such a type as to prevent unintentional contact with live parts at any time, including during insertion or removal of the connectors. The degree of protection shall be at least IPXXB. PELV circuits are excepted from this requirement. b) Have a first make last break protective bonding contact (earthing contact) (see also 6.3, 8.2.4) if used in TN- or TT-systems. c) Plug/socket combinations intended to be connected or disconnected during load conditions shall have sufficient load-breaking capacity. Where the plug/socket combination is rated at 30 A, or greater, it shall be interlocked with a switching device so that the connection and disconnection is possible only when the switching device is in the OFF position. d) Plug/socket combinations that are rated at more than 16 A shall have a retaining means to prevent unintended or accidental disconnection. e) Where an unintended or accidental disconnection of plug/socket combinations can cause a hazardous situation, they shall have a retaining means. The installation of plug/socket combinations shall fulfil the following requirements as applicable: f) The component which remains live after disconnection shall have a degree of protection of at least IP2X or IPXXB, taking into account the required clearance and creepage distances. PELV circuits are excepted from this requirement. g) Metallic housings of plug/socket combinations shall be connected to the protective bonding circuit. PELV circuits are excepted from this requirement. h) Plug/socket combinations intended to carry power loads but not to be disconnected during load conditions shall have a retaining means to prevent unintended or accidental disconnection and shall be clearly marked that they are not intended to be disconnected under load. i) Where more than one plug/socket combination is provided in the same electrical equipment, the associated combinations shall be clearly identifiable. It is recommended that mechanical coding be used to prevent incorrect insertion. j) Plug/socket combinations used in control circuits shall fulfil the applicable requirements of IEC 61984. **Exception:** see item k). k) Plug/socket combinations intended for household and similar general purposes shall not be used for control circuits. In plug/socket combinations in accordance with IEC 60309-1, only those contacts shall be used for control circuits which are				

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		intended for those purposes. **Exception:** The requirements of item k) do not apply to control functions using high frequency signals on the power supply.				
	13.4.6	**Dismantling for shipment** Where it is necessary that wiring be disconnected for shipment, terminals or plug/socket combinations shall be provided at the sectional points. Such terminals shall be suitably enclosed and plug/socket combinations shall be protected from the physical environment during transportation and storage.	☑			
	13.4.7	**Additional conductors** Consideration should be given to providing additional conductors for maintenance or repair. When spare conductors are provided, they shall be connected to spare terminals or isolated in such a manner as to prevent contact with live parts.	☑			
	13.5 **13.5.1**	**Ducts, connection boxes and other boxes** **General requirements** Ducts shall provide a degree of protection suitable for the application (see IEC 60529). 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. Where necessary, additional protection consisting of a flame-retardant, oil-resistant insulating material shall be provided to protect conductor insulation. 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. 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. 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. In areas where human passage is required, the ducts and cable trays shall be mounted at least 2 m above the working surface. Ducts shall be provided only for mechanical protection (see 8.2.3 for requirements for connection to the protective bonding circuit). Cable trays that are partially covered should not be considered to be ducts or cable trunking systems (see 13.5.6), and the cables used shall be of a type suitable for installation with or without the use of open cable trays or cable support means.	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
	13.5.2	**Percentage fill of ducts** Consideration of the percentage fill of ducts should be based on the straightness and length of the duct and the flexibility of the conductors. It is recommended that the dimensions and arrangement of the ducts be such as to facilitate the insertion of the conductors and cables.	☑			
	13.5.3	**Rigid metal conduit and fittings** Rigid metal conduit and fittings shall be of galvanized steel or of a corrosion-resistant material suitable for the conditions. The use of dissimilar metals in contact that can cause galvanic action should be avoided. Conduits shall be securely held in place and supported at each end. Fittings shall be compatible with the conduit and appropriate for the application. Fittings shall be threaded unless structural difficulties prevent assembly. Where threadless fittings are used, the conduit shall be securely fastened to the equipment. Conduit bends shall be made in such a manner that the conduit shall not be damaged and the internal diameter of the conduit shall not be effectively reduced.			☑	
	13.5.4	**Flexible metal conduit and fittings** A flexible metal conduit shall consist of a flexible metal tubing or woven wire armour. It shall be suitable for the expected physical environment. Fittings shall be compatible with the conduit and appropriate for the application.			☑	
	13.5.5	**Flexible non-metallic conduit and fittings** Flexible non-metallic conduit shall be resistant to kinking and shall have physical characteristics similar to those of the sheath of multiconductor cables. The conduit shall be suitable for use in the expected physical environment. Fittings shall be compatible with the conduit and appropriate for the application.	☑			
	13.5.6	**Cable trunking systems** Cable trunking systems external to enclosures shall be rigidly supported and clear of all moving or contaminating portions of the machine. Covers shall be shaped to overlap the sides; gaskets shall be permitted. Covers shall be attached to cable trunking systems by suitable means. On horizontal cable trunking systems, the cover shall not be on the bottom unless specifically designed for such installation. NOTE Requirements for cable trunking and ducting systems for electrical installations are given in the IEC 61084 series. Where the cable trunking system is furnished in sections, the joints between sections shall fit tightly but need not be gasketed. The only openings permitted shall be those required for wiring or for drainage. Cable trunking systems shall not have opened but unused knockouts.			☑	

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
	13.5.7	**Machine compartments and cable trunking systems** The use of compartments or cable trunking systems within the column or base of a machine to enclose conductors is permitted provided the compartments or cable trunking systems are isolated from coolant or oil reservoirs and are entirely enclosed. Conductors run in enclosed compartments and cable trunking systems shall be so secured and arranged that they are not subject to damage.	☑			
	13.5.8	**Connection boxes and other boxes** Connection boxes and other boxes used for wiring purposes shall be accessible for maintenance. 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 (see 11.3). 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.	☑			
	13.5.9	**Motor connection boxes** Motor connection boxes shall enclose only connections to the motor and motor-mounted devices (for example brakes, temperature sensors, plugging switches, tachometer generators).	☑			
14		**Electric motors and associated equipment**				
	14.1	**General requirements** Electric motors should conform to the relevant parts of IEC 60034 series. 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. 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. Motor control equipment shall be located and mounted in accordance with Clause 11.	☑			
	14.2	**Motor enclosures** It is recommended that motor enclosures be chosen from those included in IEC 60034-5. The degree of protection shall be at least IP23 (see IEC 60529) for all motors. More stringent requirements can be needed depending on the application and the physical environment (see 4.4). Motors incorporated as an integral part of the machine shall be so mounted that they are adequately protected from mechanical damage.	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
	14.3	**Motor dimensions** As far as is practicable, the dimensions of motors shall conform to those given in the IEC 60072 series.	☑			
	14.4	**Motor mounting and compartments** Each motor and its associated couplings, belts, pulleys, or chains, shall be so mounted that they are adequately protected and are easily accessible for inspection, maintenance, adjustment and alignment, lubrication, and replacement. The motor mounting arrangement shall be such that all motor hold-down means can be removed and all terminal boxes are accessible. Motors shall be so mounted that proper cooling is ensured and the temperature rise remains within the limits of the insulation class (see IEC 60034-1). Where practicable, motor compartments should be clean and dry, and when required, shall be ventilated directly to the exterior of the machine. The vents shall be such that ingress of swarf, dust, or water spray is at an acceptable level. There shall be no opening between the motor compartment and any other compartment that does not meet the motor compartment requirements. Where a conduit or pipe is run into the motor compartment from another compartment not meeting the motor compartment requirements, any clearance around the conduit or pipe shall be sealed.	☑			
	14.5	**Criteria for motor selection** The characteristics of motors and associated equipment shall be selected in accordance with the anticipated service and physical environmental conditions (see 4.4). In this respect, the points that shall be considered include: – type of motor; – type of duty cycle (see IEC 60034-1); – fixed speed or variable speed operation, (and the consequent variable influence of the ventilation); – mechanical vibration; – type of motor control; – influence of the harmonic spectrum of the voltage and/or current feeding the motor (particularly when it is supplied from a static convertor) on the temperature rise; – method of starting and the possible influence of the inrush current on the operation of other users of the same power supply, taking also into account possible special considerations stipulated by the supply authority; – variation of counter-torque load with time and speed;	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		– influence of loads with large inertia; – influence of constant torque or constant power operation; – possible need of inductive reactors between motor and converter.				
	14.6	**Protective devices for mechanical brakes** Operation of the overload and overcurrent protective devices for mechanical brake actuators shall initiate the simultaneous de-energization (release) of the associated machine actuators. NOTE Associated machine actuators are those associated with the same motion, for example cable drums and long-travel drives.	☑			
15		**Accessories and lighting**				
	15.1	**Accessories** Where the machine or its associated equipment is provided with socket-outlets that are intended to be used for accessory equipment (for example hand-held power tools, test equipment), the following apply: – the socket-outlets should conform to IEC 60309-1. Where that is not practicable, they should be clearly marked with the voltage and current ratings; – the continuity of the protective bonding circuit to the socket-outlet shall be ensured except where protection is provided by PELV; – all unearthed conductors connected to the socket-outlet shall be protected against overcurrent and, when required, against overload in accordance with 7.2 and 7.3 separately from the protection of other circuits; – where the power supply to the socket-outlet is not disconnected by the supply disconnecting device for the machine or the section of the machine, the requirements of 5.3.5 apply. NOTE 1 See also Annex B. NOTE 2 Circuits for socket-outlets can be provided with residual current protective devices (RCDs).			☑	
	15.2 **15.2.1**	**Local lighting of the machine and equipment** **General** Connections to the protective bonding circuit shall be in accordance with 8.2.2. The ON/OFF switch shall not be incorporated in the lampholder or in the flexible connecting cords. Stroboscopic effects from lights shall be avoided by the selection of appropriate luminaires. Where fixed lighting is provided in an enclosure, electromagnetic compatibility	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		should be taken into account using the principles outlined in 4.4.2.				
	15.2.2	**Supply** 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. Lighting circuits shall be supplied from one of the following sources (see also 7.2.6): – a dedicated isolating transformer connected to the load side of the supply disconnecting device. Overcurrent protection shall be provided in the secondary circuit; – a dedicated isolating transformer connected to the line side of the supply disconnecting device. That source shall be permitted for maintenance lighting circuits in control enclosures only. Overcurrent protection shall be provided in the secondary circuit (see also 5.3.5 and 13.1.3); – a machine circuit with dedicated overcurrent protection; – an isolating transformer connected to the line side of the supply disconnecting device, provided with a dedicated primary disconnecting means (see 5.3.5) and secondary overcurrent protection, and mounted within the control enclosure adjacent to the supply disconnecting device (see also 13.1.3); – an externally supplied lighting circuit (for example factory lighting supply). This shall be permitted in control enclosures only, and for the machine work light(s) where their total power rating is not more than 3 kW. **Exception:** where fixed lighting is out of reach of operators during normal operations, the provisions of this Subclause do not apply.	☑			
	15.2.3	**Protection** Local lighting circuits shall be protected in accordance with 7.2.6.	☑			
	15.2.4	**Fittings** Adjustable lighting fittings shall be suitable for the physical environment. The lampholders shall be: – in accordance with the relevant IEC standard; – constructed with an insulating material protecting the lamp cap so as to prevent unintentional contact. Reflectors shall be supported by a bracket and not by the lampholder. **Exception:** where fixed lighting is out of reach of operators during normal operation, the provisions of this Subclause do not apply.			☑	
16		**Marking, warning signs and reference designations**				

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
	16.1	**General** Warning signs, nameplates, markings, and identification plates shall be of sufficient durability to withstand the physical environment involved.	☑			
	16.2 **16.2.1**	**Warning signs** **Electric shock hazard** 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 (DB:2002-10).  The warning sign shall be plainly visible on the enclosure door or cover. The warning sign may be omitted (see also 6.2.2 b)) for: – an enclosure equipped with a supply disconnecting device; – an operator-machine interface or control station; – a single device with its own enclosure (for example position sensor).	☑			
	16.2.2	**Hot surfaces hazard** Where the risk assessment shows the need to warn against the possibility of hazardous surface temperatures of the electrical equipment, the graphical symbol IEC 60417-5041 (DB:2002-10) shall be used. 	☑			
	16.3	**Functional identification** Control devices, visual indicators, and displays (particularly those related to safety)	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		shall be clearly and durably marked with regard to their functions either on or adjacent to the item. Such markings may be as agreed between the user and the supplier of the equipment (see Annex B). Preference should be given to the use of standard symbols given in IEC 60417- DB:2002 and ISO 7000.				
	16.4	**Marking of equipment** Equipment (for example controlgear assemblies) shall be legibly and durably marked in a way that is plainly visible after the equipment is installed. A nameplate giving the following information shall be attached to the enclosure adjacent to each incoming supply: – name or trade mark of supplier; – certification mark, when required; – serial number, where applicable; – rated voltage, number of phases and frequency (if a.c.), and full-load current for each supply; – short-circuit rating of the equipment; – main document number (see IEC 62023). The full-load current shown on the nameplate shall be not less than the running currents for all motors and other equipment that can be in operation at the same time under normal conditions. Where only a single motor controller is used, that information may instead be provided on the machine nameplate where it is plainly visible.	☑			
	16.5	**Reference designations** All enclosures, assemblies, control devices, and components shall be plainly identified with the same reference designation as shown in the technical documentation.	☑			
17		**Technical documentation**				
	17.1	**General** The information necessary for installation, operation, and maintenance of the electrical equipment of a machine shall be supplied in the appropriate forms, for example, drawings, diagrams, charts, tables, instructions. The information shall be in an agreed language (see also Annex B). 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.	☑			The information necessary is supplied in the appropriate forms in english.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		NOTE 1 The technical documentation provided with items of electrical equipment can form part of the documentation of the electrical equipment of the machine. NOTE 2 In some countries, the requirement to use specific language(s) is covered by legal requirements.				
	17.2	**Information to be provided** The information provided with the electrical equipment shall include: a) A main document (parts list or list of documents); b) Complementary documents including: 1) a clear, comprehensive description of the equipment, installation and mounting, and the connection to the electrical supply(ies); 2) electrical supply(ies) requirements; 3) information on the physical environment (for example lighting, vibration,atmospheric contaminants) where appropriate; 4) overview (block) diagram(s) where appropriate; 5) circuit diagram(s); 6) information (as applicable) on: programming, as necessary for use of the equipment; sequence of operation(s); frequency of inspection; frequency and method of functional testing; guidance on the adjustment, maintenance, and repair, particularly of the protective devices and circuits; recommended spare parts list; and list of tools supplied. 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; 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); 9) instructions on the procedures for securing the machine for safe maintenance; (see also 17.8); 10) information on handling, transportation and storage; 11) information regarding load currents, peak starting currents and permitted voltage drops, as applicable; 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.	☑			Circuit diagram; user's manual and so on.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
	17.3	**Requirements applicable to all documentation** Unless otherwise agreed between manufacturer and user: – the documentation shall be in accordance with relevant parts of IEC 61082; – reference designations shall be in accordance with relevant parts of IEC 61346; – instructions/manuals shall be in accordance with IEC 62079. – parts lists where provided shall be in accordance with IEC 62027, class B. NOTE See item 13 of Annex B. For referencing of the different documents, the supplier shall select one of the following methods: – where the documentation consists of a small number of documents (for example less than 5) each of the documents shall carry as a cross-reference the document numbers of all other documents belonging to the electrical equipment; or – for single level main documents only (see IEC 62023), all documents shall be listed with document numbers and titles in a drawing or document list; or – all documents of a certain level (see IEC 62023) of the document structure shall be listed, with document numbers and titles, in a parts list belonging to the same level.	☑			Documentation meets these requirements.
	17.4	**Installation documents** The installation documents shall give all information necessary for the preliminary work of setting up the machine (including commissioning). In complex cases, it may be necessary to refer to the assembly drawings for details. The recommended position, type, and cross-sectional areas of the supply cables to be installed on site shall be clearly indicated. 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). Where necessary, the size, purpose, and location of any ducts in the foundation that are to be provided by the user shall be detailed (see Annex B). 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 (see Annex B). Where necessary, the diagram shall indicate where space is required for the removal or servicing of the electrical equipment. NOTE 1 Examples of installation diagrams can be found in IEC 61082-4. In addition, where it is appropriate, an interconnection diagram or table shall be provided. That diagram or table shall give full information about all external connections.	☑			

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		Where the electrical equipment is intended to be operated from more than one source of electrical supply, the interconnection diagram or table shall indicate the modifications or interconnections required for the use of each supply. NOTE 2 Examples of interconnection diagrams/tables can be found in IEC 61082-3				
	17.5	**Overview diagrams and function diagrams** Where it is necessary to facilitate the understanding of the principles of operation, an overview diagram shall be provided. An overview diagram symbolically represents the electrical equipment together with its functional interrelationships without necessarily showing all of the interconnections. NOTE 1 Examples of overview diagrams can be found in IEC 61082 series. Function diagrams may be provided as either part of, or in addition to, the overview diagram. NOTE 2 Examples of function diagrams can be found in IEC 61082-2.	☑			
	17.6	**Circuit diagrams** A circuit diagram(s) shall be provided. This diagram(s) shall show the electrical circuits on the machine and its associated electrical equipment. Any graphical symbol not shown in IEC 60617-DB:2001 shall be separately shown and described on the diagrams or supporting documents. The symbols and identification of components and devices shall be consistent throughout all documents and on the machine. Where appropriate, a diagram showing the terminals for interface connections shall be provided. That diagram may be used in conjunction with the circuit diagram(s) for simplification. The diagram should contain a reference to the detailed circuit diagram of each unit shown. Switch symbols shall be shown on the electromechanical diagrams with all supplies turned off (for example electricity, air, water, lubricant) and with the machine and its electrical equipment ready for a normal start. Conductors shall be identified in accordance with 13.2. Circuits shall be shown in such a way as to facilitate the understanding of their function as well as maintenance and fault location. Characteristics relating to the function of the control devices and components which are not evident from their symbolic representation shall be included on the diagrams adjacent to the symbol or referenced to a footnote.	☑			
	17.7	**Operating manual** The technical documentation shall contain an operating manual detailing proper	☑			Operating manual meets this requirement.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		procedures for set-up and use of the electrical equipment. Particular attention should be given to the safety measures provided. 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.				
	17.8	**Maintenance manual** The technical documentation shall contain a maintenance manual detailing proper procedures for adjustment, servicing and preventive inspection, and repair. Recommendations on maintenance/service intervals and records should be part of that manual. Where methods for the verification of proper operation are provided (for example software testing programs), the use of those methods shall be detailed.	☑			Maintenance manual is provided.
	17.9	**Parts list** The parts list, where provided, shall comprise, as a minimum, information necessary for ordering spare or replacement parts (for example components, devices, software, test equipment, technical documentation) required for preventive or corrective maintenance including those that are recommended to be carried in stock by the user of the equipment.	☑			The parts lists conform to this requirement.
18		**Verification**				
	18.1	**General** This part of IEC 60204 gives general requirements for the electrical equipment of machines. The extent of verification will be given in the dedicated product standard for a particular machine. 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): a) verification that the electrical equipment complies with its technical documentation; b) in case of protection against indirect contact by automatic disconnection, conditions for protection by automatic disconnection shall be verified according to 18.2; c) insulation resistance test (see 18.3); d) voltage test (see 18.4); e) protection against residual voltage (see 18.5); f) functional tests (see 18.6).	☑			Verification is done.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		When these tests are performed, it is recommended that they follow the sequence listed above. When the electrical equipment is modified, the requirements stated in 18.7 shall apply. For tests in accordance with 18.2 and 18.3, measuring equipment in accordance with the EN 61557 series is applicable. NOTE For other tests as required by this standard measuring equipment in accordance with relevant IEC or European Standards should be used. The results of the verification shall be documented.				
	18.2 **18.2.1**	**Verification of conditions for protection by automatic disconnection of supply** **General** The conditions for automatic disconnection of supply (see 6.3.3) shall be verified by tests. For TN-systems, those test methods are described in 18.2.2; their application for different conditions of supply are specified in 18.2.3. For TT and IT systems, see IEC 60364-6-61.	☑			TN-system
	18.2.2	**Test methods in TN-systems** Test 1 verifies the continuity of the protective bonding circuit. Test 2 verifies the conditions for protection by automatic disconnection of the supply. **Test 1 – Verification of the continuity of the protective bonding circuit** The resistance of each protective bonding circuit between the PE terminal (see 5.2 and Figure 2) and relevant points that are part of each protective bonding circuit shall be measured with a current between at least 0,2 A and approximately 10 A derived from an electrically separated supply source (for example SELV, see 413.1 of IEC 60364-4-41) having a maximum no-load voltage of 24 V a.c. or d.c.. It is recommended not to use a PELV supply since such supplies can produce misleading results in this test. The resistance measured shall be in the expected range according to the length, the cross sectional area and the material of the related protective bonding conductor(s). NOTE 1 Larger currents used for the continuity test increases the accuracy of the test result, especially with low resistance values, i.e. larger cross sectional areas and/or lower conductor length. **Test 2 – Fault loop impedance verification and suitability of the associated overcurrent protective device** The connections of the power supply and of the incoming external protective conductor to the PE terminal of the machine, shall be verified by inspection. The conditions for the protection by automatic disconnection of supply in	☑			Test 1 is done.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		accordance with 6.3.3 and Annex A shall be verified by both: 1) verification of the fault loop impedance by: – calculation, or – measurement in accordance with A.4, and 2) confirmation that the setting and characteristics of the associated overcurrent protectivedevice are in accordance with the requirements of Annex A. NOTE 2 A fault loop impedance measurement can be carried out for circuits where the conditions of protection by automatic disconnection requires a current *I*a up to about 1 kA (*I*a is the current causing the automatic operation of the disconnecting device within the time specified in Annex A).				
	18.2.3	**Application of the test methods for TN-systems** Test 1 of 18.2.2 shall be carried out on each protective bonding circuit of a machine. When Test 2 of 18.2.2 is carried out by measurement, it shall always be preceded by Test 1. NOTE A discontinuity of the protective bonding circuit can cause a hazardous situation for the tester or other persons, or damage to the electrical equipment during the loop impedance test. The tests that are necessary for machines of different status are specified in Table 9. Table 10 can be used to enable determination of the machine status.	☑			Testing method is carried out according to the Procedure A in Table 9.
	18.3	**Insulation resistance tests** When insulation resistance tests are performed, the insulation resistance measured at 500 V d.c. between the power circuit conductors and the protective bonding circuit shall be not less than 1 MΩ. The test may be made on individual sections of the complete electrical installation. **Exception:** for certain parts of electrical equipment, incorporating for example busbars, conductor wire or conductor bar systems or slip-ring assemblies, a lower minimum value is permitted, but that value shall not be less than 50 kΩ. If the electrical equipment of the machine contains surge protection devices which are likely to operate during the test, it is permitted to either: – disconnect these devices, or – reduce the test voltage to a value lower than the voltage protection level of the surge protection devices, but not lower than the peak value of the upper limit of the supply (phase to neutral) voltage.	☑			Insulation resistance tests are performed.
	18.4	**Voltage tests** When voltage tests are performed, test equipment in accordance with IEC 61180-2 should be used.	☑			Voltage tests are performed.

Article	Sub-article	Requirement	Fullfilment			Remark
			Y	N	N/A	
		The test voltage shall be at a nominal frequency of 50 Hz or 60 Hz. The maximum test voltage shall have a value of twice the rated supply voltage of the equipment or 1 000 V, whichever is the greater. The maximum test voltage shall be applied between the power circuit conductors and the protective bonding circuit for a period of approximately 1 s. The requirements are satisfied if no disruptive discharge occurs. Components and devices that are not rated to withstand the test voltage shall be disconnected during testing. Components and devices that have been voltage tested in accordance with their product standards may be disconnected during testing.				
	18.5	**Protection against residual voltages** Where appropriate, tests shall be performed to ensure compliance with 6.2.4			☑	
	18.6	**Functional tests** The functions of electrical equipment shall be tested. The function of circuits for electrical safety (for example earth fault detection) shall be tested.	☑			
	18.7	**Retesting** Where a portion of the machine and its associated equipment is changed or modified, that portion shall be reverified and retested, as appropriate (see 18.1). Particular attention should be given to the possible adverse effects that retesting can have on the equipment (for example overstressing of insulation, disconnection/reconnection of devices).			☑	

3.3 Earthing continuity test report

Manufacturer：Zhejiang Shengtian Machinery Co., Ltd

EUT：IRONING TABLE

Test model：TDZG-Q3

Ratings：220V；50/60Hz

Test Equipment：Aino Electronics

Model：AN9640

Test conditions：10A

Date：2017-05-18

Test Point	Test Result-Voltage Drop (V)
Electrical cabinet	5.83
Motor	5.73

3.4 Insulation resistance test report

Manufacturer：Zhejiang Shengtian Machinery Co., Ltd
EUT：IRONING TABLE
Test model：TDZG-Q3
Ratings：220V；50/60Hz
Test Equipment：Aino Electronics
Model：AN9640
Test conditions：500VDC
Date：2017-05-18

Test Point	Test Result (MΩ)
Motor	413

3.5 Airborne noise test report

Applicable standards

1. EN ISO 3746：Acoustics-Determination of sound power levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane.
2. EN ISO 11202：Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at the work station and at other specified positions - Survey method in situ.
3. ISO/TR 11688-1：Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1 ：Planning.

I. Test instrument

The sound level meter used in the noise measurement is TES1350A manufactured by TES Electrical Electronic Corp. with the following features：

- Portable with light weight ＆ easy operation.
- Measurement range from 35 to 130 dB（A）.
- Type 1 precision.
- With “F” ＆ ”S” detect mode in accordance with IEC 651 type 1.
- Built in A-weighting network.
- Equipped with a high prepolarized condenser microphone.
- With automatic ＆ manual display.
- DC output for level recorder.

II. Measurement method

The measurements of this test have been carried out by a hand-held sound level meter, and readings are taken by A-frequency weighting at working position.
For operator positions in process of measurement, the measuring instrument is to be set at a distance of 1 m from the machine and 1.5 m above the floor.

III. Test environment

The test was carried out in the location of machine inside the factory, and the background noise has been ensured that its measuring value is lower than that of machine.

IV. Test result

Background

Reading value: 50dB(A)

Test position / Reading value	1
Reading value 1 (dB (A))	65.6
Reading value 2 (dB (A))	65.8
Reading value 3 (dB (A))	65.5

Annex：Technical Information

A.1 Company profile
A.2 Product information
A.3 Specification
A.4 DoC
A.5 Overall drawing
A.6 Electrical circuit diagram and parts list
A.7 Instruction manual
A.8 Warning label and nameplate
A.9 CE Certificates of key components