

Electrically powered office furniture for the GB market - a guide to the Regulations



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Foreword

This guide has been prepared by FIRA International Ltd on behalf of the Furniture Industry Research Association.

This document is a guide to the application of the Supply of Machinery (Safety) Regulations to office furniture. It does not replace any legislative documents that are available and is simply additional information to help achieve compliance. As such, the Regulations and relevant supporting documentation (details of which can be found at the end of this document) must also be understood.

The dates and titles of Designated Standards and Regulations referenced within this document were current at the time of publication. It is advised that advice be sought on the status of these and any other applicable documentation when assessing product conformity.

All efforts have been made to ensure this document is correct at the time of going to press. The opinions and advice expressed are given in good faith. However, the authors cannot be held responsible for any action resulting from the content of this guide as the ultimate interpretation of the Regulations rests with the courts. Where serious doubt occurs professional legal opinion should be sought.

Version Control

Any amendments or revisions made to this document are recorded here:

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1.0	December 18	B Lovell	First Issue
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1. Introduction

In October 2019 a new guide to the Machinery Directive was published 'Guide to application of the Machinery Directive 2006/42/EC' Edition 2.2. This guidance was transposed into UK regulations after Brexit as part of the Supply of Machinery (Safety) Regulations 2008. The guidance document published in July 2017 (2.1) and October 2019 (2.2) clarifies and consolidates the provisions of the Regulations to provide greater legal certainty. The guidance is particularly clear in identifying the relationship with powered office furniture products such as sit / stand desking and other electrically powered office furniture falling within the scope of the Regulation.

The current industry practice is that the Supply of Machinery (Safety) Regulations (SMR) did not apply to such products probably due to the interpretation of the below exclusion statement given in the original Regulation:-

'Excludes ordinary office machinery'

This statement has over time being misinterpreted to include office furniture products as ordinary office equipment, and compliance has been achieved through compliance to the General Product Safety and Low Voltage Directives. The guidance document that has been published has provided definition and clarity on what is classed as ordinary office equipment.

Taken from the guidance:-

'The exclusion applies to electrical equipment such as, for example, printers, copiers, fax machines, sorters, binders and staplers. The exclusion of ordinary office machinery does not extend to electrically powered office furniture which is subject to the Supply of Machinery (Safety) Regulations.'

The SMR contain detailed requirements for the provision of new machinery. It should be noted that there are other UK Regulations which implement other European Directives which may also be applicable to the supply of office furniture, including the General Product Safety Directive and the supply of electrical equipment (Low Voltage Directive, EMC Directive).

Office furniture manufacturers need to ensure that their furniture products comply with the applicable GB Regulations for UKCA marking. This guide sets out the route to compliance and the processes involved in the final UKCA marking of products. It offers advice and examples of the essential requirements, Standards and testing regimes for some typical furniture products which fall within the UKCA marking boundaries.

Please note for the purposes of this document that the term 'manufacturer' also refers to the 'Authorised Representative' which is defined in section 2.

2. Terms and definitions

The following brief list contains some of the key phrases and their definitions associated with the UKCA marking of products. Further detailed definitions can be found in the Supply of Machinery (Safety) Regulations (SMR).

Manufacturer: a person who designs or manufactures product with a view to it being placed on the market under that person's own name or trademark; or for that person's own use in GB or if there is no such person, the person who first places that product on the GB market or puts it into service.

Authorised Representative: if the manufacturer is not based in GB an 'authorised representative' can be appointed by them to take responsibility for UKCA marking. The authorised representative will often be an importer, distributor or buyer of the products. The definition of an authorised representative is a person established in the GB area who has received a written mandate from the manufacturer to perform, on the manufacturer's behalf, all or part of the obligations and formalities imposed on manufacturers (either as "manufacturers" or "responsible persons") in connection with the applicable Regulations within that area.

Responsible Person: referred to in the Regulations as "manufacturers or their authorised representatives" – see definition above.

CE mark: This is the declaration from the manufacturer or the manufacturer's authorised representative indicating that the product has undergone all necessary evaluation procedures and meets the essential requirements of the applicable CE marking Regulations.

UKCA mark: the UKCA (UK Conformity Assessed) marking is the new UK product marking that will be used for certain goods being placed on the market of Great Britain (England, Scotland and Wales) after leaving the EU.

EU Declaration of Conformity (EU DoC): as well as placing the CE mark on the product and producing Technical Documentation (File), the manufacturer/manufacturer's authorised representative must also produce and sign an EU Declaration of Conformity. This is a document summarising the CE marking process that has been followed.

UK Declaration of Conformity (UK DoC): as well as placing the UKCA mark on the product and producing Technical Documentation (File), the manufacturer/manufacturer's authorised representative must also produce and sign a UK Declaration of Conformity. This is a document summarising the UKCA marking process that has been followed.

Declaration of Incorporation: this is specifically for products under the Supply of Machinery (Safety) Regulations that are sold in a non-complete state, ahead of their incorporation into a complete machine. When the product being sold is part of a larger complete unit, it may not itself have all the required safety features, but will meet the essential safety requirements (ESRs) of the SMR when finally installed.

Directives: these are legal documents published by the European Commission that lay down requirements for Member State governments to include in their National laws. The CE marking Directives can be rather vague and the legislative structure they set up includes specific provision for standards to be written to contain the working detail.

Essential requirements/essential safety requirements/ESRs: ESRs are the main points in the Directives / Regulations that must be met before you can claim compliance with the Directives / Regulation. They are generally expanded in detail in Harmonised / Designated standards, although above all you must always meet the ESRs of the Directives / Regulations.

Harmonised standards: harmonisation is a term commonly used where a European standard has been specifically developed, by a recognised EU standards organisation at the request of the European Commission, to enable the application of EU legislation. Once harmonised and listed in the Official Journal of the EU (OJEU) in regards to a particular CE Regulations, these standards are considered to be sufficient to be used to demonstrate compliance with the essential requirements covered by those standards. As such, these standards offer a “presumption of conformity”

Designated Standards: the UK Government produced a list designated standards which are standards that confer presumption of conformity acceptable for UKCA marking.

Technical documentation: whoever places the CE / UKCA mark on the product shall have the necessary documentation to demonstrate that the essential requirements of the applicable Regulations have been met. This information, including design specifications, test results and assessment history, is compiled to form the ‘technical documentation’, otherwise known as the Technical File.

Statutory Instruments: (SIs) are a form of legislation which allow the provisions of an Act of Parliament to be subsequently brought into force or altered without Parliament having to pass a new Act. They are also referred to as secondary, delegated or subordinate legislation.

EU Notified Body: is an organisation designated by an EU country to assess the conformity of certain products before being placed on the market. These bodies carry out tasks related to conformity assessment procedures set out in the applicable legislation, when a third party is required.

UK Approved Body: From 1st January 2021 UK based EU notified bodies ceased to exist. Conformity assessment bodies in the UK now automatically have their status converted under a new UK framework so that UK based notified bodies will become UK approved bodies.

3. Background

3.1 Introduction

The UK Government issued guidance to GB Manufacturers regarding the placing of products on the GB market now the UK has left the EU, and the transition period after Brexit ended from 1st January 2021. This guidance was for manufacturers of furniture products that currently (up until 1st Jan 2021) fell under one or more of the CE Marking Directives. The UKCA (UK Conformity Assessed) marking is the GB product marking that will be used for certain goods being placed on the market of Great Britain (England, Scotland and Wales) now we have fully left the EU. For GB manufacturers of furniture products, the mark is called up by the “Product Safety and Metrology etc. (Amendment etc.) (EU Exit) regulations 2019”), which amends the current regulations that implement UKCA Marking in Great Britain.

The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) regulations 2019 covers those furniture products that previously required CE Marking under the following EU Directives common to furniture products:

EU legislation	UK legislation
Toy Safety - Directive 2009/48/EC	Toys (Safety) Regulations 2011
Electromagnetic Compatibility - Directive 2014/30/EU	Electromagnetic Compatibility Regulations 2016
Low Voltage Directive 2014/35	Electrical Equipment (Safety) Regulations 2016
Radio equipment - Directive 2014/53/EU	Radio Equipment Regulations 2017
Pressure equipment - Directive 2014/68/EU	Pressure Equipment (Safety) Regulations 2016
Gas appliances - Regulation (EU) 2016/426	Gas Appliances Regulation (Regulation (EU) 2016/426 as brought into GB law and amended) and the Gas Appliances (Enforcement) and Miscellaneous Amendment Regulations 2018
Machinery Directive 2006/42/EC	Supply of Machinery (Safety) Regulations 2008
Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) - Directive 2002/95/EC	The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

And also covers other legislation such as General product safety, ATEX, Cosmetic, Metrology, PPE, Pressure equipment, Recreational craft.

The UKCA mark does not apply to Northern Ireland which will use a new mark called the UKNI mark alongside the UKCA Mark in some circumstances. In Northern Ireland, CE Marking will continue to be used to show goods meet EU rules after 1st Jan 2021.

NOTE THIS GUIDANCE DOCUMENT DOES NOT INCLUDE INFORMATION ON PRODUCTS SOLD INTO THE NI MARKET THAT WILL CARRY ON USING CE MARKING AS PART OF THE NORTHERN IRELAND PROTOCOL.

3.2 Regulatory Territories and Markets

UKCA applies for the island of Great Britain, so England, Scotland and Wales but not Northern Ireland. UKCA Marking applies to the rest of the EU27 states forming the EEA.



In Northern Ireland there's a separate regime, so three regulatory regimes. England, Scotland and Wales covered by UKCA. For Northern Ireland, the existing rules for CE Marking will continue to apply, because Northern Ireland is staying within a customs territory and the regulatory territory for the EU, and hence CE Marking still applies. This is known as the Northern Ireland Protocol and for as long as it is in force, Northern Ireland will align with relevant EU rules relating to the placing on the market of manufactured goods. As an alternative to applying UKCA marking, a UKNI mark which just applies to Northern Ireland for certain products that use a UK approved body for third party conformity assessments is in place.

NOTE THIS GUIDANCE DOES NOT INCLUDE INFORMATION ON UKNI MARKING.

3.3 UKCA Marking

The UKCA (UK Conformity Assessed) marking is the product marking that will be used for certain goods being placed on the market of Great Britain (England, Scotland and Wales). It covers most goods which previously required CE Marking. The UKCA mark came in force from the 1st January 2021 with transitional arrangements, including a one year transitional acceptance of CE Marking to allow businesses time to adjust to the new requirements. From 1 January 2021, the essential requirements and standards used to demonstrate conformity for UKCA marked goods will be the

same. That means that if products are currently made to the technical requirements necessary for CE Marking then it will be made to the same technical requirements that will exist for UKCA marking.

The UKCA mark is the manufacturer's statement that the product conforms to UK legislation and is placed on the product by the manufacturer or authorised representative. This is in essence the same principle as that of the CE Mark, but for the GB market. Therefore, this means that the UKCA mark is mandatory for certain products sold within the GB market. By affixing UKCA marking to a product, a manufacturer is declaring, at its sole responsibility, conformity with the legal requirements. It is also important to note other legal requirements for consumer products includes compliance with the General Product Safety Regulations (GPSD). The GPSD is not a UKCA Regulation but the scope of it does not exclude products covered by other UKCA marking regulations. The GPSD either applies entirely to a product, if no UKCA marking Regulations apply, or partially, if UKCA marking Regulations are applicable to a product.

3.4 UKCA Timeline

The table below shows the timelines for the different regulatory requirements going forward over the next few years in the GB market.

England, Scotland and Wales	2021	2022	2023
	Yes (transition allows CE)	No (transitional marking)	No
	Yes (transition allows CE)	Yes (transitional marking)	Yes

From the 1st January 2021, CE marking still applies within the whole of the UK, but as an alternative, a transitional arrangement to the UKCA mark is also available. The UKCA started from the 1st January 2021 in England, Scotland and Wales, but you don't have to use it until the end of 2021 when the transition arrangement ends. Businesses are encouraged to be ready for full implementation of the new UK regime as soon as possible after 1 January 2021. However, to allow businesses time to adjust, CE marked goods in the scope of this guidance that meet EU requirements (where these match UK requirements) can continue to be placed on the GB market until 1 January 2022 where EU and UK requirements remain the same (transition allows CE).

From 1st January 2022, you can no longer use CE marking to show compliance with the UK regulations in England, Scotland and Wales with exception:

- (transitional marking) here is a recognition that some manufacturers may not have had the chance to change their marking plates and there is a further 12 months transition where you can put the UKCA mark on a separate piece of paper or packaging supplied with the product to the end of 2022.

3.5 Authorised person, Distributor and Importers GB Market

Authorised representatives and responsible persons based in the EU will no longer be recognised in GB from 1st January 2021. For those manufacturers using an authorised representative they will need to use one that is based in the UK for products been placed on the GB market. UK distributors and suppliers became an 'importer' after 1st January 2021.

You'll become an importer if you're the first one bringing goods from outside the UK and placing them on the market in Great Britain. If someone has already placed a good on the GB or EU market before you sell it in Great Britain, you will remain a distributor and will not have any additional responsibilities. As an importer, make sure that:

- goods are labelled with your company's details, including company's name and a contact address (until 31 December 2022 you can provide these details on the accompanying documentation rather than on the good itself)
- the correct conformity assessment procedures have been carried out and that goods have the correct conformity markings
- the manufacturer has drawn up the correct technical documentation and complied with their labelling requirements
- you maintain a copy of the declaration of conformity for a period of 10 years
- goods conform with the relevant essential requirements

The manufacturer of a product affixes UKCA marking to it but has to take certain obligatory steps before the product can bear a UKCA mark. A manufacturer's obligations relating to each of the applicable Regulations are detailed in the following pages. Many of the obligations are the same for each Regulation and follow a common approach.

There are rules underlying the procedure to affix UKCA marking and specific routes to compliance for different products. This guide will allow a manufacturer to determine if it has fully covered all the design, technical and testing aspects related to specific products.

3.6 UK Legislation Governing UKCA – SI 2019:696

As mentioned in the introduction, the statutory Instrument of legislation that is being used is called UK Statutory Instrument 2019/696 – The Product Safety and Metrology etc. (Amendment etc.) (EU Exit) regulations 2019 (SI 2019:696) and covers those furniture products that previously required CE marking. SI 2019:696 implements the changes to conformity assessment and CE marking for the UK as an Amending Instrument and introduces the UKCA Mark. SI 2019:696 amends 38 product safety and metrology measures to correct deficiencies in UK legislation which will arise after transition. SI 2019:696 amends the existing UK Regulations for CE marking and hence must be read

with these Regulations. There is no set of consolidated regulations for the existing CE marking statutory instruments.

3.7 Designated Standards

The UK Government have produced a list of designated standards which are standards that confer presumption of conformity acceptable for UKCA marking. This list mirrors the citation by the European Commission of harmonised standards in the Official Journal of the EU. BSI have taken all of the harmonised product standards and re-published them as British designated standards. As far as the technical content of BS EN standards are concerned, there will be no change, they will continue to be referred to as BS EN. Only products that comply with the essential requirements may be placed on the GB market or put into service. Products manufactured in compliance with Designated Standards shall, as such, be recognised as conforming to the corresponding essential requirements.

3.8 Electrically powered office furniture and related UKCA Regulations

UKCA marking is required in the GB market if the product is covered by one or more of the UKCA marking Regulations. There is no defined category for electrically powered office furniture but powered office furniture products do fall into one or more of these Regulations by virtue of their design and functionality. With respect to electrically powered office furniture a manufacturer must determine which Regulations are applicable and note that there may be several Regulations that have to be taken into consideration for one product. The product can only be placed on the GB market when it complies with the provisions of all the applicable Regulations.

3.9 Supply of Machinery (Safety) Regulations (SMR) interface with other UK Regulations

For products within the scope of the Supply of Machinery (Safety) Regulations, the provisions of the regulations may be totally or partially superseded by other UK legislation (Regulations) that cover all or parts of the hazards concerned more specifically with the intended use. When there is specific UK legislation that applies instead of the Supply of Machinery (Safety) Regulations to machinery that is in their scope then these Regulations should be applied instead of the Supply of Machinery (Safety) Regulations.

Examples

Toys (Safety) Regulations 2011	The Toys Regulations is a comprehensive health and safety Regulation, dealing more specifically than the SMR with the hazards of machinery intended to be used as toys. The SMR is thus not applicable to machinery that is within the scope of the Toys Regulations.
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Medical Devices Regulations 2002	The MDR is a comprehensive health and safety Regulations, dealing more specifically than the SMR with the hazards of machinery intended for medical use. The supply of machinery regulation thus not applicable to machinery that is within the scope of the MDR.
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In other cases, the overlap between the specific Regulations and the Supply of Machinery (Safety) Regulations is limited to one or a few hazards. In these cases the relevant requirements of the specific Regulations are to be applied instead of the corresponding essential health and safety requirements of the Supply of Machinery (Safety) Regulations.

Examples

Gas Appliances Regulation	The GAR applies to appliances burning gaseous fuels used for cooking, heating, hot water production, refrigeration, lighting or washing, including garden furniture with gas incorporated. The GAR also applies, for the hazards that it covers, to gas appliances within its scope that are incorporated into machinery.
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Besides specific Regulations there are other UK Regulations that may apply in a complementary way to products in the scope of the Supply of Machinery (Safety) Regulations for aspects not covered by the Supply of Machinery (Safety) Regulations, such as electromagnetic compatibility or the protection of the environment.

Examples

Electromagnetic Compatibility Regulations 2016	The EMC Regulations applies to machinery that contains electrical or electronic parts that may generate or be affected by electromagnetic disturbance. The EMC Regulations covers aspects of electromagnetic compatibility related to the functioning of machinery.
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012	The RoHS Regulations sets out restrictions on the use of certain hazardous substances in the electrical and electronic equipment.
Radio Equipment Regulations 2017	The requirements of the RER with respect to the use of the radio frequency spectrum apply to radio equipment within its scope that is incorporated into machinery, such as, for example, certain remote control devices. It should be noted that the safety of remote control systems for machinery is subject to the SMR.

4. UKCA Marking Regulations

4.1 Supply of Machinery (Safety) Regulations 2008

4.1.1 Introduction

As identified in the update to the 'Guide to application of the Machinery Directive 2006/42/EC' Edition 2.2, it has been confirmed this Regulations shall be applied to electrically powered office furniture.

This Regulations applies to all machinery and describes the essential health and safety requirements for machinery to comply with the Regulations, as well as a number of more specific requirements for certain categories of machinery. There are no specific requirements for electrically powered office furniture classed as machinery in the annexes to the Regulations, so the general Regulations applies.

In the context of the Supply of Machinery (Safety) Regulations the definition of 'machinery' is as follows.

- An assembly of linked parts or components, at least one of which moves, with the appropriate actuators, control and power circuits etc., joined together for a specific application
- An assembly of machines which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole

There are also some important points laid out in the recitals of the Regulations – the relevant ones to furniture detailed as follows:

- The Supply of Machinery (Safety) Regulations applies both to machinery for use by workers at work **and**
- Machinery for use by consumers, so the design and construction of machinery must take account of the intended use. The Regulations includes a specific requirement relating to the drafting of instructions for machinery intended for use by non-professional operators

The UKCA mark the manufacturer affixes on the product shall be fully recognised as being the only marking which indicates that machinery conforms to the requirements of this Regulation. In order to avoid confusion between any UKCA / CE markings which might appear on certain components and the UKCA marking corresponding to the machinery, it is a requirement that the latter marking be affixed alongside the name of the person who has taken responsibility for it, namely the manufacturer.

The manufacturer shall also ensure that a risk assessment is carried out on the machinery before it is placed on the market to determine which essential health and safety requirements are applicable. The essential health and safety requirements relating to the design and construction of the product are set out in Annex I of the Regulations. The essential health and safety requirements set out in Annex I may be supported by Designated Standards. Most of the essential health and safety requirements concern primarily the protection of the health and safety of persons, including operators and other exposed persons.

4.1.2 Supply of Machinery (Safety) Regulations Annex I - Essential health and safety requirements relating to the design and construction of machinery

The general principles that apply using the process of risk assessment and risk reduction by the manufacturer are as follows:

- 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 the Regulations
- Eliminate the hazards or reduce the risks associated with these hazards by application of protective measures

The list of essential requirements is organised into several sections. The sections of the essential requirements are wide-ranging, and take into account potential dangers to operators and all other persons who may come into contact with the machinery. They are organised into a series of seven sections.

Section 1 is general and includes a list of definitions and a statement on the 'principles of safety integration' which is fundamental to the interpretation of many of the other essential requirements. There is then a series of sub-sections on:

- Control systems
- Protection against mechanical hazards
- Guards and protective devices
- Risks due to other hazards (including electricity, fire and vibration).

4.1.3 Supply of Machinery (Safety) Regulations - Related Designated Standards

The application of any standard for any product safety Regulations like the SMR is optional at the manufacturer's choice, but if the product fully meets the requirements of a standard designated for that Regulation (see section 5.3) then the manufacturer may obtain the 'presumption of conformity' and simplify the conformity assessment process and reduce the burden of the technical file. If a relevant standard exists but the manufacturer chooses not to follow it the manufacturer must show in much more detail, in the technical file how the relevant EHSRs have been met, and the authorities may use the designated standard(s) as a guide in assessing compliance with the EHSRs.

For the Supply of Machinery (Safety) Regulations Designated Standards are categorised into A, B and C type Standards:

A-type Standards (Basic Standard)

A-type Standards specify basic concepts, terminology and design principles applicable to all categories of machinery. Application of such Standards alone, although providing an essential framework for the correct application of the Supply of Machinery (Safety) Regulations, is not

sufficient to ensure conformity with the relevant essential health and safety requirements of the Regulation and therefore does not give a full presumption of conformity.

BS EN ISO 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction

This is the standard for machinery safety and outlines the general principles of machinery safety, risk assessment and management. It aids in identifying and eliminating hazards at different stages of the machinery's lifecycle. BS EN ISO 12100 provides the tools to design and develop safe machinery including hazard checklists and machine schematics.

B-type Standards (Generic Standards)

B-type Standards deal with specific aspects of machinery safety or specific types of safeguard that can be used across a wide range of categories of machinery. Application of the specifications of B-type Standards confers a presumption of conformity with the essential health and safety requirements of the Supply of Machinery (Safety) Regulations that they cover when a C-type Standard or the manufacturer's risk assessment shows that a technical solution specified by the B-type standard is adequate for the particular category or model of machinery concerned.

BS EN 349:1993+A1:2008 Safety of machinery - Minimum gaps to avoid crushing of parts of the human body

This specifies minimum gaps relative to parts of the human body in machinery and is applicable when adequate safety can be achieved by this method. It aims to enable the user to avoid hazards from crushing zones.

BS EN ISO 13857:2008 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs.

Focuses on safety by specifying safety distances to protect the upper and lower limbs of operators. Best practice recommendations include body dimensions, length, machine guards and barriers or holes. The standard looks at various reaching situations when the machinery is used.

C-type Standards (Machinery Standards)

C-type Standards provide specifications for a given category of machinery. The different types of machinery belonging to the category covered by a C-type Standard have a similar intended use and present similar hazards. C-type Standards may refer to A or B-type Standards, indicating which of the specifications of these are applicable to the category of machinery concerned.

NOTE: *There are no C type Standards relating specifically to electrically powered office furniture. Nonetheless there are some specific furniture related Standards that can be used to support the conformity assessment. Such Standards for some of the more common furniture products are in Appendix A of this document.*

4.1.4 Future Standards Developments and Guidance

On 2nd Nov 2020 a project group agreed to initiate a work item for developing a standard to address shear and compression issues in electrically operated furniture (e.g. desks, chairs, beds, kitchen units) by a group of European experts. The task of this project group (PG2) is developing very quickly a European Standard for the entrapment, shear and compression risks posed by electrically actuated furniture. The aim is to create a new standard to be a designated standard under the SMR.

At the moment, there are no standards specifically addressing the entrapment, shear and compression risks posed by electrically operated furniture to the users who under the SMR include adults, children and pets alike. This makes the compliance to the ESHR (essential safety health requirements) of the SMR difficult for manufacturers and importers of electrically actuated furniture. There is an urgent need for a standard developed by experts in the furniture sector. The project group has already started their work by initially looking at body parts at risk and the availability of anthropometric data on body part sizes and forces these body parts can sustain without the risk of serious injury.

Also, at the time of publication of this revised document, HSE is considering clarification of responsibilities for those height adjustable desk manufacturers that purchase the adjustable legs and only affix the desktop component (this does not apply to those manufacturers that modify the original adjustable leg design to complement their own design specifications – full responsibilities would still apply). The proposed changes are that the adjustable leg manufacturer would take on the responsibilities of the manufacturer and issue the Declaration of Conformity rather than the company fitting the desktop. The details of this proposal have not yet been clarified, i.e. who is responsible for final UKCA marking label or completed risk assessment. Manufacturers of these type of products should keep abreast of the changes and keep track of updates to the regulations to clarify their responsibilities.

4.1.5 Gap Analysis on products relating to the Supply of Machinery (Safety) Regulations Annex I clauses

As the Supply of Machinery (Safety) Regulations is quite complex it is advised that manufacturers perform a gap analysis on their products. The gap analysis shall be performed against all the clauses of the Supply of Machinery (Safety) Regulations Annex I and aid in identifying relevant hazard categories in the risk assessment process.

4.1.6 Supply of Machinery (Safety) Regulations Relationship with the Electrical Equipment (Safety) Regulations

The Supply of Machinery (Safety) Regulations is mutually exclusive to the Electrical Equipment safety Regulations, such that only one Regulation will apply to a product, but not both. Annex 1 of the Supply of Machinery (Safety) Regulations contains requirements for electrical safety that are identical to those listed in the Electrical Equipment safety Regulations (EER). As such, it should be noted that a Declaration of Conformity shall refer to the Supply of Machinery (Safety) Regulations only, and not to the EER.

4.1.7 Declaration of Incorporation

The application of a UKCA mark under the Supply of Machinery (Safety) Regulations is a statement which confirms that the machinery fully complies with the requirements of the Regulation. Clearly, this is not appropriate for partly completed machines (PCM's) which are intended to be incorporated into another machine or which cannot function unless they are built into a complete production line. There are very specific circumstances in which a machine is considered to be a PCM defined by the definition given in article 2g of the SMR as below:-

'partly completed machinery' means an assembly which is almost machinery but which cannot in itself perform a specific application. A drive system is partly completed machinery. Partly completed machinery is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which this Regulation applies'

For a PCM, instead of signing a Declaration of Conformity, the manufacturer must demonstrate that it has assessed the product to mitigate any risks to the user, and subsequently sign a Declaration of Incorporation. This states that the machinery is incomplete and must be incorporated as appropriate to fully conform to the requirements of the Regulation before it is brought into service. The manufacturer must provide information on the residual risks which the machine contains and on the assessment work which it has completed. A PCM manufacturer does not need to declare compliance with any EHSRs, only those he has chosen to meet. However, a PCM manufacturer must provide assembly instructions which should include where relevant, for the final machine's control system, the relevant data on safety performance/reliability.

The declaration of incorporation contains similar particulars as required on the Declaration of Conformity (manufacturer / authorised person details, description, date and signature). In addition though the Declaration of Incorporation must also clearly state:

- "that the partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Regulation, where appropriate"
- "an undertaking to transmit, in response to a reasoned request by the national authorities, relevant information on the partly completed machinery."
- "which essential health and safety requirements are applied and fulfilled and where appropriate, a sentence declaring the conformity of the partly completed machinery with other relevant Regulations."

Note that a PCM must not be UKCA marked under SMR, but may have to be UKCA marked under other Regulations, like EER, EMC, RoHS, etc. Therefore the DOC (Declaration of Conformity) and DOI (Declaration of Incorporation) provide crucial information for those manufacturer's buying components which will be incorporated into the final product and may require UKCA marking as a completed product under SMR.

4.1.8 Supply of Machinery (Safety) Regulations and UKCA marking requirements

In line with standard UKCA marking practice there are obligations the manufacturer needs to do to satisfy the Regulations. These are similar to the EMC and LVD Regulations but with reinforcement of the risk assessment requirement, and include:

- Produce a Technical File
- Complete a Risk Assessment
- Complete a conformity assessment (often satisfied by testing to the appropriate standards)
- Create and sign a UK Declaration of Conformity
- Affix a UKCA mark

- Manufacture products with Factory Production Control procedures to ensure the products remain in conformity with the Regulations, in particular keeping a register of complaints of non-conforming equipment
- Ensure that equipment placed on the market bears a type, batch or serial number or other element allowing its identification
- Indicate on the equipment the name, registered tradename or registered trademark and the postal address of the manufacturer/authorised representative
- Ensure the product is accompanied by instructions and safety information in the language of the country in which the product is sold. Such instructions and safety information, as well as any labelling, shall be clear, understandable and intelligible

Unlike other Regulations detailed later (EMC, EER) there is no provision for product recall in the SMR. However, UK consumer law imposes requirements if the manufacturer has reason to believe that equipment which they have placed on the market poses a serious risk to the consumer they shall immediately take the corrective measures necessary to bring that equipment into conformity, including withdrawing from sale or initiating a product recall if appropriate.

4.2 Electrical Equipment (Safety) Regulations 2016

The Electrical Equipment (Safety) Regulations (EER) applies to all electrical products and equipment designed for use with a voltage rating of between 50V and 1000V for alternating current (AC) and between 75V and 1500V for direct current (DC) and whose hazards are primarily of an electrical nature (Consumer goods with a voltage below 50V for AC or 75V for direct current are dealt with by the General Product Safety Regulations). This will include the majority of electrically powered office furniture products connected to a domestic power supply.

The essential requirements and obligations for manufacturers outlined by the Regulations are that electrical equipment may be placed on the GB market only if it:

- has been constructed in accordance with good engineering practice and does not endanger the safety of persons or property
- is used in applications for which it is intended

The equipment should be made in such a way to make sure it can be safely assembled and connected and conform to the following H+S requirements:

- Persons and animals should be protected from physical injury
- Dangerous temperatures, arcs and radiation are not produced
- The product must offer protection against non-electrical dangers
- Insulation must be suitable for foreseeable conditions
- The product must provide protection against external hazards
- Meet expected mechanical standards to not cause a hazard

4.2.1 Related Designated Standards – EER

As with the SMR - the application of any standard for any product safety Regulations like the EER is optional at the manufacturer's choice, but if the product fully meets the requirements of a standard harmonised for that Regulation (see section 5.3) then the manufacturer may obtain the 'presumption of conformity' and simplify the conformity assessment process and reduce the burden of the technical file. If a relevant standard exists but the manufacturer chooses not to follow it the manufacturer must show in much more detail, in the technical file how the relevant EHSRs have been met, and the authorities may use the designated standard(s) as a guide in assessing compliance with the EHSRs.

For electrically powered office furniture the associated standards would be:

BS EN 60204-1:2018 Safety of machinery. Electrical equipment of machines. General requirements

BS EN 60204-1 is written for industrial machinery rather than domestic, but if a manufacturer chose to comply with this standard then it would provide full presumption of conformity. BS EN 60204-1 gives safety guidance and recommendations on electrical equipment for machinery, including safety requirements for electrical, electronic and computer controlled equipment and systems for machines. BS EN 60204-1 introduces the standard, explains how to meet the recommendations and outlines terminology for electrical equipment safety. The guidelines also cover control circuits and control functions, wiring practices and protection against electrical shock, how to maintain safety standards and essential requirements for Regulations. BS EN 60204-1 aims to help you protect the people and property from hazards presented by the electrical or electronic equipment for machinery.

BS EN 60335-1:2012+A2:2019 Household and similar electrical appliances. Safety. General requirements

BS EN 60335-1 gives general requirements to ensure the safety of household appliances and similar electrical appliances – providing the rated voltage is not more than 250 V for single-phase and 480 V for other appliances. The scope of the standard relates to 'similar' electrical appliances meaning that this standard also covers appliances used in offices, shops, hotels and other residential type environments. These best practice recommendations for electrical safety looks at common hazards of household equipment or electrically-operated devices that could cause injury to persons in and around the environment it is placed in. The use of appliances by unsupervised children, or young children playing with electrical household equipment, is not covered in this standard. BS EN 60335-1 looks at general requirements and conditions to test the domestic safety of electric household appliances and similar electrical appliances. It also defines the classification and marking of electrical equipment, and demonstrates how to ensure protection against live parts.

4.2.2 Future Designated Standards under Development

There was a new standard developed by the IEC (International Electro-technical Committee) and published 22.11.2019 but was not agreed to become a designated standard. Currently, CENELEC is working on modifying the IEC standard, IEC 60332-116: 2019 Household and similar electrical appliances to bring in line with the EER and become a designated standard to demonstrate full compliance.

IEC 60335-2-116 - Household and similar appliances - Safety - Part 2-116: Particular requirements for furniture with electrically motorised parts.

This part 2 standard would be used in conjunction with BS EN 60335-1 (part 1) in relation to furniture within the scope of its remit. At present the scope of the draft standard includes safety of furniture with electrically motorised parts, their rated voltage being not more than 250 V for single-phase furniture and 480 V for other furniture. Furniture incorporating electrically motorised parts not intended for normal household use but which nevertheless may be a source of danger to the public, such as furniture intended to be used by laymen in shops, offices, hotels, restaurants, hospitals, in light industry and on farms, are within the scope of this standard. This standard deals with the reasonably foreseeable hazards presented by furniture incorporating electrically motorised parts that are encountered by all persons. This standard does not apply to mechanical tests on furniture parts unless they are encapsulating electrically motorised parts. It also covers the risks associated with the movement of the motorized part.

4.2.3 Electrical Equipment Safety Regulations and UKCA marking requirements

Manufacturers have certain UKCA marking obligations to meet the requirements of the Electrical Equipment (Safety) Regulations.

- Produce a Technical File including an adequate analysis and assessment of the risks
- Complete a conformity assessment (often satisfied by testing to the appropriate standards);
- Create and sign a UK Declaration of Conformity
- Affix a UKCA mark
- Manufacture products with Factory Production Control procedures to ensure products remain in conformity with the Regulations, in particular keeping a register of complaints of non-conforming equipment;
- Ensure that product placed on the market bears a type, batch or serial number or other element allowing its identification
- Indicate on the product the name, registered trade name or registered trademark and the postal address of the manufacturer / authorised representative
- Ensure the product is accompanied by instructions and safety information in the language of the country in which the product is sold. Such instructions and safety information, as well as any labelling, shall be clear, understandable and intelligible

In addition, if the manufacturer / authorised representative has reason to believe that equipment which they have placed on the market is not in conformity with the EER it shall immediately take the corrective measures necessary to bring that equipment into conformity, including withdrawing it from sale or initiating a product recall if appropriate.

4.3 Electromagnetic Compatibility (EMC) Regulations 2016

Electromagnetic compatibility (EMC) is the ability of a product to operate within normal conditions in its electromagnetic energy (emissions) and offer protection (immunity) against electromagnetic energy that occurs in the environment of its intended use. This Regulation controls the emissions and immunity characteristics of electrical powered office furniture. All electric devices influence each other when interconnected or close to each other.

The purpose of electromagnetic compatibility (EMC) is to keep all these side effects under reasonable control. The EMC Regulation ensures that electrical and electronic equipment does not generate, or is not affected by, electromagnetic disturbance. The Regulation limits electromagnetic emissions from equipment in order to ensure that, when used as intended, such equipment does not disturb radio and telecommunication, as well as other equipment. The Regulation also governs the immunity of such equipment to interference and seeks to ensure that this equipment is not disturbed by radio emissions when used as intended.

Electrically powered office furniture needs to comply with EMC requirements when it is placed on the market. The objective of the Regulation is to harmonise EMC protection requirements (including emissions and immunity) in order to guarantee the operation of the product in its intended EMC environment. The following two statements, relating to emissions of disturbance and immunity to disturbances, cover the essential requirements of the Regulations.

The product shall have:

- emission limitation to permit other products to operate as intended
- immunity requirements to permit the product concerned to operate as intended

Products, therefore, shall be constructed so that the electromagnetic disturbance generated does not exceed a level allowing radio and telecommunications equipment to operate as intended, and so that the product has an adequate level of immunity to electromagnetic disturbance to enable it to operate as intended.

4.3.1 *Related Designated Standards – EMC*

As with the SMR, EER - the application of any standard for any product safety Regulation like the EMC Regulation is optional at the manufacturer's choice, but if the product fully meets the requirements of a designated standard for that Regulations (see section 5.3) then the manufacturer may obtain the 'presumption of conformity' and simplify the conformity assessment process and reduce the burden of the technical file. If a relevant standard exists but the manufacturer chooses not to follow it the manufacturer must show in much more detail, in the technical file how the relevant EHSRs have been met, and the authorities may use the designated standard(s) as a guide in assessing compliance with the EHSRs.

With regards to electrically powered office furniture the associated standards to be applied would depend on the environment in which the product was intended to be used. There are variations of EMC standards dependant on the emission and immunity requirements based on environment the product are placed in. BS EN 61000 are a suite of EMC testing standards intended for use by all manufacturers, designers and test houses associated with electrical and electronic equipment for use in residential, commercial, industrial and light-industrial environments.

The following two standards:

BS EN 61000-6-3:2007+A1:2011 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments

BS EN 61000-6-1:2019 Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments

Apply to office furniture intended to be directly connected to a low-voltage public mains network or connected to a dedicated DC source which is intended to interface between the apparatus and the low-voltage public mains network (240V). This standard would also apply also to office furniture powered by a non-public, but non-industrial, low voltage power distribution system if the furniture is intended to be used in the locations described below. The environments encompassed by these two standards are residential, commercial and light industrial.

- Residential properties e.g. houses, apartments
- Retail outlets e.g. shops, supermarkets
- Business premises e.g. offices, banks
- Areas of public entertainment e.g. cinemas, public bars, dance halls
- Outdoor locations e.g. petrol stations, car parks, amusement and sports centres.

There may be a requirement for the office furniture to be installed in an industrial environment. In this case the following standards would be apply:

BS EN IEC 61000-6-2:2019 Generic Standards Immunity for Industrial Environments

BS EN IEC 61000-6-4:2019 Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments

These standards apply to office furniture connected to a power network supplied from a high or medium voltage transformer dedicated to the supply of an installation feeding manufacturing or similar plant, and intended to operate in or in proximity to industrial locations. The environments encompassed by these standards are industrial. Industrial locations are characterized by the existence of one or more of the following:

- industrial, scientific and medical apparatus;
- heavy inductive or capacitive loads are frequently switched;
- currents and associated magnetic fields are high.

There are a further two other Harmonised Standards used to demonstrate compliance with the EMC Directive:

BS EN IEC 61000-3-2:2019 Electromagnetic compatibility (EMC). Limits for harmonic current emissions (equipment input current $\leq 16\text{A}$ per phase).

BS EN 61000-3-3:2013+A1:2019 Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low voltage supply systems, for equipment with rated current $\leq 16\text{A}$ per phase and not subject to conditional connection.

These two EMC standards deal with the limitation of harmonic currents and voltage fluctuations injected into public low voltage mains electricity supply systems by EEE. It is applicable for electrical equipment supplied from mains network with voltage not less than 220V and current up to 16A intended for use by both the general public and professionals.

Manufacturers shall look to test products to the relevant standards shown above based on environment of use in order to determine whether or not they meet the essential requirements of the Directive.

4.3.2 EMC Regulations and UKCA marking requirements

Manufacturers have certain UKCA marking obligations to meet the requirements of the Electrical Equipment (Safety) Regulations.

- Produce a Technical File including an adequate analysis and assessment of the risks
- Complete a conformity assessment (often satisfied by testing to the appropriate standards)
- Create and sign a UK Declaration of Conformity
- Affix a UKCA mark
- Manufacture products with Factory Production Control procedures to ensure products remain in conformity with the Regulations, in particular keeping a register of complaints of non-conforming equipment
- Ensure that product placed on the market bears a type, batch or serial number or other element allowing its identification
- Indicate on the product the name, registered tradename or registered trademark and the postal address of the manufacturer / authorised representative
- Ensure the product is accompanied by instructions and safety information in the language of the country in which the product is sold. Such instructions and safety information, as well as any labelling, shall be clear, understandable and intelligible.

In addition, if the manufacturer / authorised representative has reason to believe that equipment which they have placed on the market is not in conformity with the Regulation it shall immediately take the corrective measures necessary to bring that equipment into conformity, including withdrawing it from sale or initiating a product recall if appropriate.

4.4 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (RoHS)

4.4.1 Introduction

Restriction of the Use of Certain Hazardous Substances in Electronic and Electrical Equipment, as indicated by the title, restricts the amount of hazardous substances that can be used in the manufacture of electrical and electronic equipment (EEE). Such hazardous substances can be difficult to manage at the end of the product life cycle, when electrical and electronic products are being disposed of or recycled. Therefore, the Regulation focus on restricting them at the design and production stage in order to keep them out of the waste stream. The definition of a piece of EEE equipment falling under the scope of the Regulations is as follows:

- with a voltage rating not exceeding 1,000V for AC and 1,500V for DC that requires electric currents or electromagnetic fields to work, or equipment used for the generation, transfer and measurement of electric currents and fields. EEE can be a component or assembly used in a finished product. Cables and spare parts for repairing, reusing, updating or upgrading a product are all EEE
- All equipment that has at least one intended function which is dependent on electric current or electromagnetic fields is EEE. Even if the electric function is only a minor element of the equipment, the definition still applies
- In EEE furniture products the electric function is an intended and integral part of the product's functionality, and the full functionality of the equipment is at least impaired (i.e. it does not work properly) if that electrical function fails. In order for products to be EEE, their electricity dependent functions must in principle be integrated. With a sit stand desk, for example, the motion package unit is an integrated part of the product and cannot be separated so the desk and motion package cannot be used as fully functioning separate products.

The Regulations bans anyone from placing on the EU market EEE in which any homogeneous material contains more than the tolerated maximum concentration values (MCVs) of six substances:

- lead (Pb)
- mercury (Hg)
- hexavalent chromium (Cr(VI))
- cadmium (Cd)
- polybrominated biphenyls (PBB)
- polybrominated diphenyl ether (PBDE)

Responsibility for compliance is shared by the manufacturer and distributor placing the EEE on the UK market and are obligated to ensure that the design and manufacture of the product complies with RoHS, this includes each homogeneous material within the EEE.

4.4.2 Related designated Standards – RoHS

Electrically powered office furniture conforms to the safety objectives of RoHS where the equipment has been manufactured in accordance with applicable Designated Standards. With regards to electrically powered office furniture these Standards would be:

BS EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances. This standard describes three kinds of documents that may be used to demonstrate conformity with the RoHS requirements:

- Supplier declarations and/or signed contractual agreements
- Materials declarations
- Analytical test results (Requires the use of EN 62321)

EN 62321: 2009 Electro-technical products Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers).

4.4.3 RoHS Regulations and UKCA marking requirements

In line with standard UKCE marking practice there are obligations the manufacturer needs to do to satisfy the Regulation:

- Produce technical documentation demonstrating compliance
- Complete a conformity assessment (often satisfied by testing to the appropriate)
- Create and sign a UK Declaration of Conformity
- Affix UKCA marking
- Manufacture the product with Factory Production Control procedures to ensure the products remain in conformity with the Regulation, in particular keeping a register of complaints of non-conforming equipment
- Ensure that equipment placed on the market bears a type, batch or serial number or other element allowing its identification
- Indicate on the equipment their name, registered trade name or registered trademark and the postal address of the manufacturer / authorised representative

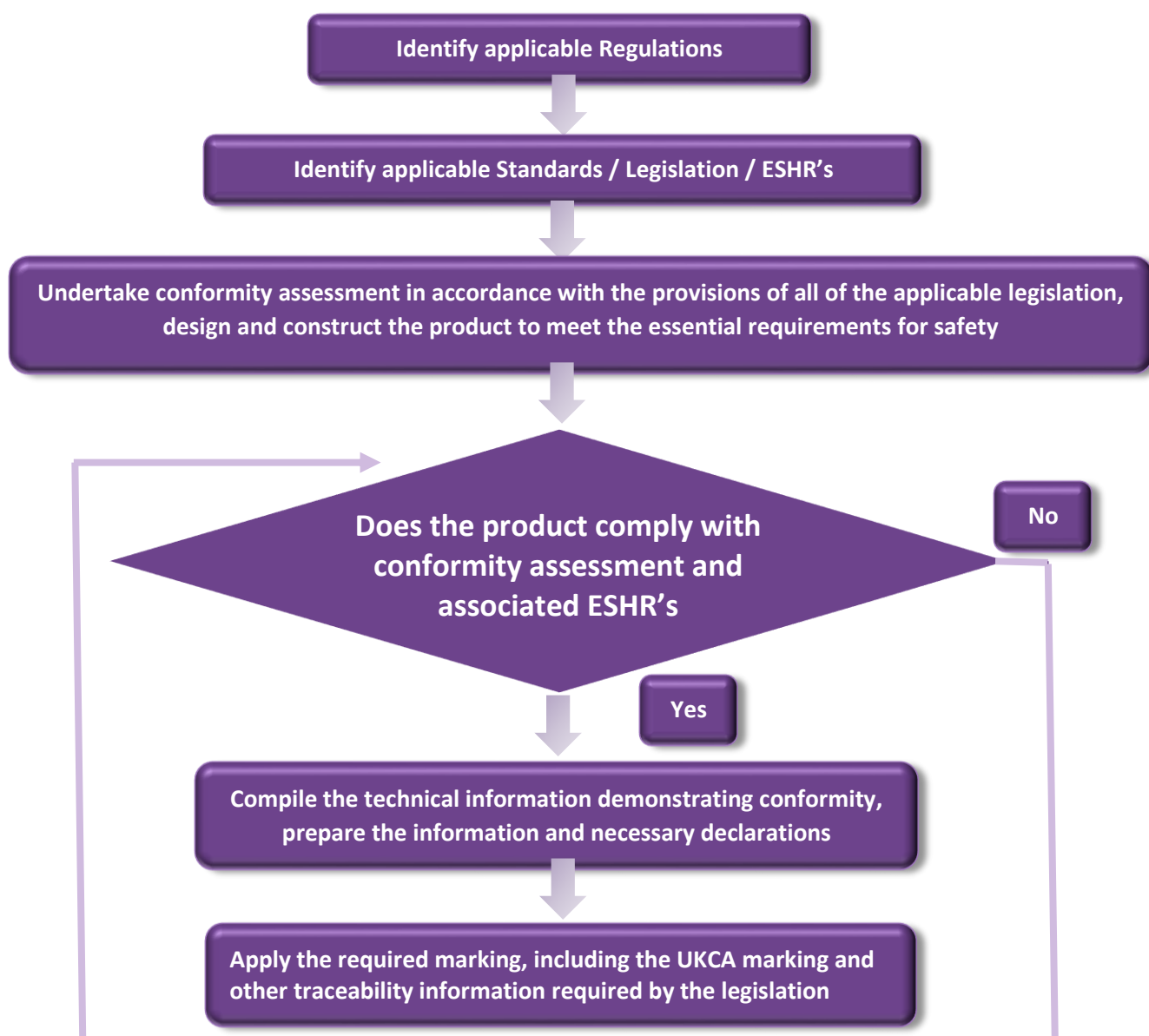
In addition, if the manufacturer/ authorised representative has reason to believe that equipment which they have placed on the market is not in conformity with this Regulation they shall immediately take the corrective measures necessary to bring that equipment into conformity, including to withdraw from sale or initiating a product recall if appropriate.

5. Proof of conformity for UKCA marking

5.1 Introduction

Once the appropriate Regulations and EHSR's relating to a product have been identified then it is time to establish proof of conformity and apply the UKCA mark. The various elements to this route are detailed in the following process, including explanations of Technical File requirements, risk management, Factory Production Control, marking and traceability, critical components and user information requirements; all of which lead to the final UK Declaration of Conformity.

Process diagram for self-certifying and UKCA marking electrically powered office furniture for the GB market



5.2 Identify applicable Regulations

The applicable Regulations can be derived from the technical description of the product. Manufacturers may need to refer to the exact definition within the Regulations to determine if their product falls within the scope of the Regulations. Descriptions of each Regulation are provided in the previous sections of this document.

See Appendix A for a summary of typical Regulations applicable to common types of electrically powered office furniture.

5.3 Identify applicable Designated Standards

Regulations do not tend to state how their requirements are to be specifically and quantifiably achieved. This is the role of Designated Standards which help to define more closely what is meant for a particular hazard. Various multinational committees meet to produce and update Standards relating to the safety, marking, design etc. of products within their fields. When Brexit transition finished on 1st January 2021 the national body for standards in the UK took all the current EU harmonised product standards and re-published them as British designated standards. Designated standards can be found at the link below for the different regulations.

www.gov.uk/guidance/designated-standards

Businesses can use these designated standards to provide presumption of conformity with GB law. Manufacturers can use the referenced Designated Standards to demonstrate that a product complies with the relevant UK Regulation. Designated standards are viewed as compulsory as there isn't often any other method to prove an item is 'safe' or meets a particular Regulation. Compliance with a designated standard also has the benefit of offering "presumption of conformity" with the Regulation under which it is designated, a manufacturer not taking this approach would have to prove how their method of compliance meets all of the relevant requirements of the Regulations. In effect the burden of proof would be reversed. A designated standard is a standard, developed by consensus, which may be recognised by government in part or in full by publishing the reference on GOV.UK. Depending on the product, it can be a standard published by any of the following recognised standardisation bodies:

- British Standards Institution (BSI)
- European Committee for Standardisation (CEN)
- European Committee for Electrotechnical Standardisation (Cenelec)
- European Telecommunications Standards Institute (ETSI)
- International Organization for Standardization (ISO)
- International Electrotechnical Commission (IEC)
- International Telecommunication Union (ITU)

The content of the standard is the responsibility of the recognised standardisation bodies, with BSI as the UK's National Standards Body representing the interests of UK stakeholders. From 1 January 2021, when deciding if a standard is appropriate for designation, the government will check how far the standard covers the various essential requirements set out in the relevant legislation. The government may decide not to designate or to designate with restriction.

See Appendix A for description of typical standards related to some common electrically powered office furniture.

5.4 Third Party Conformity Assessment and Self Certification

Most of the Regulations incorporate a self-certification option, leaving the responsibility for applying the test standards and certifying that the products comply with the Regulations to the manufacturer. Generally, most furniture manufacturers will be able to self-certify their products. Whilst this means there are no mandatory requirements for third party involvement, many manufacturers subcontract aspects of the assessment procedure to an independent testing facility.

A declaration (accompanied by the relevant technical examinations and documentation) by the manufacturer is enough to ensure the conformity of the product in question against the relevant legislative requirements. In this case, the manufacturer themselves carries out all required controls and checks, establishes the technical documentation and ensures the conformity of the production process. Where self-declaration of conformity was permitted for CE marking this will also be the case for UKCA marking.

Where mandatory third-party conformity assessment was required for CE marked goods, it will also be required for UKCA marked goods. This conformity assessment would need to be carried out by a UK approved body in order to be marked with the UKCA marking. The type of conformity assessment procedures will be the same that were required for CE marking.

5.5 Technical documentation – The Technical File

5.5.1 Introduction

All UKCA marking Regulations require the manufacturer of the product to create a Technical File. The Technical File is a mandatory document containing technical information supporting the claim of conformity to the requirements of applicable Regulations. The manufacturer has to determine what information is needed to complete the Technical File and must also implement internal measures to ensure the product remains in conformity.

As a general guide, the following items shall be included in the Technical File:

- Description of the furniture and intended use
- Wiring and circuit diagrams
- General arrangement drawings
- Full detailed drawings accompanied by calculations, if applicable
- List of Standards applied
- Records of risk assessments and assessments to Standards
- Description of control philosophy/logic
- Datasheets for critical sub-assemblies
- Parts list

- Copies of any markings and labels
- Copy of instructions (user, maintenance, installation)
- Test reports
- Quality control and commissioning procedures – e.g. Factory Production Control (FPC)
- Declaration of Conformity

There is nothing to stop the file containing a great deal more information than listed. For instance copies of the engineering drawings for any bespoke parts could also be included. These should not, however, be used to fill out the file at the expense of the more relevant information on how the equipment operates and how it meets the safety objectives of the Regulations. If the product has been the subject of third party testing then the test reports confirming compliance to an appropriate Designated Standards shall also be included in the Technical File.

The importance of including a basic general description of the appliance along with its intended use cannot be overstated.

5.5.2 Access to, and delivery of, the Technical File

It is important to understand that only the authorities given power to enforce the Regulations have a right to see the Technical File. It does not need to be published or given to customers. The purpose of the Technical File is to provide evidence to an enforcement authority that the product has correctly undergone and completed an assessment to comply with the relevant Regulations. Enforcement authorities have the right to demand a copy of the file for up to 10 years after the last date on which the products described in the file were produced. This is a significant, often overlooked, requirement. Changes in personnel, company administrative and managerial facilities and resources present challenges in ensuring the availability of the required information and this needs to be considered carefully.

The technical file must be made available to the market surveillance authorities of the UK. The relevant elements of the technical file must be made available in response to a reasoned request from the competent authorities. The technical file does not have to be permanently available in material form. The term 'technical file' thus refers to a body of information which can be stored on paper or in electronic form in one or several places. There is no need to duplicate documents that are common to different types of machinery. However, the information must be organised, classified and stored so that the manufacturer can, without delay, communicate the relevant elements of the technical file in response to a duly reasoned request addressed by the market surveillance authorities to the person designated in the UK Declaration of Conformity for that purpose.

5.6 Internal checks on the manufacturing process to Assess Conformity

5.6.1 Introduction

For electrically powered office furniture that is produced in volume, the manufacturer must ensure that each piece of furniture remains in conformity with the provisions of the Regulations. The manufacturer must carry out necessary research and tests on components, fittings and / or the completed product to determine whether, by its design or construction, it is capable of being

assembled and put into service safely. If changes are made to the design, for example where materials or components from different suppliers are incorporated, or where improvements are made to the design, the conformity of the aspects of the design that have been modified must be reassessed and the Technical File updated accordingly.

The internal checks on the manufacture of the product referred to in the Regulations refer to the manufacturing process being robust enough to ensure consistency of production so that all product complies with the Technical File and with the applicable essential health and safety requirements (EHSRs). Quality Control is very important to ensure the 'nth' product is in conformity and safe as well as the first product manufactured.

The Regulations also state that there shall be a customer complaints procedure keeping a register of complaints and also a non-conformance management procedure to apply corrective measures to bring the product back into conformity with the Regulations. Implementing a Factory Production Control system within the manufacturing environment is one such way to satisfy these requirements.

5.6.2 Factory Production Control (FPC)

The Regulations require the Technical File to contain information relating to the internal production control or Factory Production Control (FPC) system which would include any in-process or final quality control and commissioning procedures.

A formal quality management system (QMS) such as ISO 9001 would satisfy such a requirement and a Technical File will reference such a system. Those manufacturers that do not have formal ISO 9001 systems in place will need to implement auditable FPC procedures.

The following elements demonstrate the requirements of a typical FPC:

Scope and policy - Covers the scope of the products covered by the FPC system and includes statements related to the inspection of incoming materials, products and components. A policy statement related to the company's commitment to maintain a proactive FPC system is aimed at ensuring the understanding and ongoing implementation of procedures and ensures compliance with technical and performance characteristics of the product to meet the essential requirements of the Regulations.

FPC system review - There shall be a formal procedure for annual review meetings to evaluate the functioning and performance of the FPC system and its associated procedures. The outputs of the meeting, including the minutes, shall be clearly communicated and reference all decisions taken and actions agreed.

Documentation and records - Document issue and control must be in place and must contain appropriate references, including an index, approval and dates of issue. In addition, any revisions or amendments shall be recorded.

Training/awareness - The organisation must be proactive in identifying ongoing training and awareness needs for individuals employed in the management of the system as well as wider quality management aspects.

Purchasing process - The company must have a recorded supplier evaluation and approval process whereby vendors of materials, products, services and components are scrutinised for suitability and performance.

Customer order process - There shall be a documented order entry process following the initial receipt of a customer enquiry. Following receipt of customer order details, these shall be recorded, collated and verified before acceptance to ensure that the specification is within the capabilities of the manufacturer.

Manufacture/assembly, inspection, testing - A procedure shall exist detailing the manufacturing process together with the quality control points and employees responsible for inspection. Any non-conformities shall also be recorded along with details of corrective actions.

Measurement and testing - The FPC shall define which measurement, test equipment and machines used for manufacture, inspection and verification purposes are subject to internal calibration control and ensure records are maintained.

Non-conformity management - The manufacturer must have a process for the identification, and recording, of non-conformities. Details of the non-conformity must be recorded and discussed with concerned parties in order to determine the root causes (which may be internal or external), and for agreed corrective action to be taken in order to resolve the non-conformity or complaint at the earliest opportunity.

5.7 Risk Assessment

5.7.1 Introduction

Regulations can cover a wide range of products and risks which both overlap and complement each other. Several Regulations might have to be taken into consideration for one product. For example, the Supply of Machinery (Safety) Regulations covers mechanical hazards, the Electrical Equipment (Safety) Regulations covers electrical hazards and the Electromagnetic Compatibility Regulations covers electromagnetic disturbance and immunity. The basis of these Regulations is that only products in compliance with legislation and / or applicable designated standards shall be placed on the UK market. Authorities will take appropriate measures if non-conforming products are identified after the 'conformity assessment'.

Often, conformity assessments are performed using an applicable designated standards which details safety requirements. The advantage of Standards is that they present very detailed definitions of the requirements given in the Regulations. This eases the risk assessment for the manufacturer by changing it from an open and broad analysis to a simple checking of fulfilment of a number of requirements.

Where the designated standard is exactly related to the product type then it can be assumed that all essential health and safety requirements (EHSRs) are met by applying the test methods in the Standard. However, as seen in the previous section, for many of the electrically powered office furniture products referred to in this guide the related Standards may only partially cover all the EHSR requirements.

The Supply of Machinery (Safety) Regulations states that:

- 'The manufacturer of machinery must perform a risk assessment 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'

- To carry out this risk assessment on machinery related electrically powered office furniture products manufacturers must ensure that risk assessments are carried out in accordance with BS EN ISO 12100:2010 (Safety of machinery. General principles for design. Risk assessment and risk reduction).

5.7.2 BS EN ISO 12100 Methodology

BS EN ISO 12100:2010 specifies basic terminology, principles, and a methodology for achieving safety in the design of machinery. It specifies principles of risk assessment and risk reduction to help designers achieve this objective. These principles are based on knowledge and experience of the design, use, incidents, accidents, and risks associated with machinery. Within the standard, procedures are described for identifying hazards, estimating and evaluating risks during relevant phases of the machine life cycle, and for the elimination of hazards or sufficient risk reduction.

The risk assessment guidelines are presented as a series of logical steps helping designers to systematically determine the limits of the machinery; identify risks of hazards such as crushing, cutting, electric shock, or fatigue; and estimate potential dangers ranging from machine failure to human error. The logical steps laid down by the standard include documenting the following:

- Definition of machine limits along with intended use and foreseeable misuse
- Environment of use – domestic or non-domestic
- User groups – non-professional users, children, elderly, disabled
- Materials – hazardous substances used in construction
- Life cycle – transport, installation, assembly, maintenance and decommissioning hazards have to be identified in each life cycle
- Operating mode – manual or automatic

Creating a matrix of information aids this process – see example on page 34:

Assessment reference:	A Company 001	Number of operatives:	1
Type of machine:	Sit / Stand Powered Desk	Number of shifts per week:	5
Machine location:	Office	Usage (mins per day):	10 mins per day
Machine description:	A Type	Operating manuals:	Yes – English
Machine manufacturer:	A Company	Standard operating procedures:	Non-professional operator
Machine model:	AC0001	Operatives' training record:	Non-professional operator
Machine serial number:	if applicable	Warning signs:	No warning signs
Modifications from 'as-supplied':	None	Raw materials:	List materials
Energy sources:	Electricity	Maintenance manual:	None
Energy source ratings:	240V AC	Maintenance training record:	None
Safety measures:	Hold to Run Switch, Collision Sensor	Intended use exemptions	None
Assessment carried out by:	A Person		
Assessment date:	A Date		
Assessment checked by:	A Person		
Assessment approved by:	A responsible company representative		

After documenting the basic machine categories that are applicable then the process of identifying hazards takes place. Typical hazard types for machines defined in the standard include:

- Mechanical
- Electrical
- Thermal
- Noise
- Vibration
- Radiation
- Materials / Substances
- Ergonomic
- Hazards associated with the environment in which the machine is used
- Combination of hazards

An example of one mechanical hazard for a machine and the related characterisation of the hazard is shown below, along with potential consequences.

Type of hazard	Origin	Potential consequences	Comments	Initial assessment					
				LO	FE	DPH	NP	HRN	Risk level
Mechanical hazards	Approach of a moving element to a fixed part	Being run over	N/A					0	Negligible
		Being thrown	N/A					0	Negligible
		Crushing		2	1	2	1	4	Negligible
		Cutting or severing		1	1	0.5	1	0.5	Negligible
		Drawing-in or trapping		2	0.5	0.5	1	0.5	Negligible
		Entanglement		1	0.5	0.5	1	0.25	Negligible
		Friction or abrasion	N/A					0	Negligible
		Impact		2	1	0.5	1	1	Negligible
		Injection	N/A					0	Negligible
		Shearing		2	2	2	1	8	Low, significant
		Slipping, tripping or falling	N/A					0	Negligible
		Stabbing or puncturing	N/A					0	Negligible
		Suffocation	N/A					0	Negligible

LO (Likelihood of Occurrence)		
0.033	Almost impossible	Only in extreme circumstances
1	Highly unlikely	Though conceivable
1.5	Unlikely	But could occur
2	Possible	But unusual
5	Even chance	Could happen
8	Probable	Not surprising
10	Likely	To be expected
15	Certain	No doubt

FE (Frequency of Exposure)	
0.5	5 mins (5mins)
1	Hourly (60mins)
1.5	2 Hours (120mins)
2.5	4 Hours (240mins)
4	½ Day (720mins)
5	Constantly (1440 mins)

DPH (Degree of Possible Harm)	
0.1	Scratch or bruise
0.5	Laceration or mild ill-effect
2	Break of minor bone or minor illness (temporary)
4	Break of major bone or major illness (temporary)
6	Loss of one limb, eye, hearing (permanent)
10	Loss of two limbs or eyes (permanent)
15	Fatality

NP (Number of Persons at risk)	
1	1-2 persons
2	3-7 persons
4	8-15 persons
8	16-50 persons
12	50+ persons

After identifying the hazards, risks are estimated from the likelihood of the hazardous situations or harmful events. Risk is a combined measure of the incident probability and the severity. In the above example the Hazard Rating Number (HRN) is calculated ($LO \times FE \times DPH \times NP$) and colour-coded.

HRN	Risk
0-5	Negligible
5-50	Low, significant
50-500	High
Over 500	Unacceptable

$$HRN = LO \times FE \times DPH \times NP$$

Using the table above the corresponding Risk Level can be calculated so that the designer can decide if action is required. A risk is 'Negligible' if there is very little risk to health and safety; a risk is 'Low, significant' if hazards exist that require control measures; a risk is 'High' if there are potentially dangerous hazards that require control measures to be implemented urgently; and a risk is 'Unacceptable' if continued operation in this state is unacceptable.

The risk assessment will identify the hazards taken into consideration and describe how these might harm the user in relation to injury type and severity. This risk level leads into further risk management processes and a decision on proportionate and adequate measures. Relevant product safety Standards can be an important source of guidance. However, sometimes detailed guidance is not available on every aspect of a specific product's design and intended range of use. Ultimately, the manufacturer will need to make judgements based on risk. It is important that manufacturers use a formal process for evaluating risk, as demonstrated above.

5.7.3 After the risk assessment has been performed

Once the assessment has been performed, designers shall analyse the issues identified to determine the level of risk they pose to the consumer. Some issues will need to be addressed because they put the consumer at unacceptable risk, while others may need to be addressed because they cause the product to be out of compliance with the Regulations. With a list of items and their risk levels documented the manufacturer then creates action plans to address the vulnerabilities. BS EN ISO12100 advocates risk reduction according to the 3 – step method. There is a hierarchy in the 3 – step method in which all of step 1 should be attempted before moving to step 2 and only resorting to step 3 when all has been done to meet steps 1 and 2 first.

Step 1 - Elimination of the hazard on the basis of design measures (inherently safe design measures)

- Geometry (e.g. minimum distances between movable parts, no sharp edges, angular parts)
- Physical aspects (e.g. limitation of the actuating force, speed or emission of noise)
- General technical design (e.g. stress, materials)

- Selection of suitable technology
- Stability
- Ergonomics for reduction of stress
- Electrical safety

Step 2: Risk reduction through application of technical and complementary protective measures (guards or protective devices)

- Guards are used as access prevention or for the containment of materials, workpieces, or liquids: Stationary (only removable with tools) or movable versions
- Protective devices permit access and are always used in connection with a control (safety function).

Step 3: Warning against residual risks (information for use)

On the machine (warning signs, warnings, warning devices);

- In the handbooks (commissioning handbook, transport handbook, instruction handbook, service and maintenance handbook).

An organisation can demonstrate to an enforcement authority that it has addressed risk by documenting the above as part of its risk assessment. Performing a risk assessment demonstrates to an enforcement authority a good understanding of the risks affecting the consumer.

5.8 UK Declaration of Conformity

Like the UKCA logo, the UK Declaration of Conformity is one of the common aspects throughout all the UKCA marking Regulations. Essentially, the Declaration is a signed document completed by a responsible individual declaring compliance with the relevant requirements of the Regulations. It also allows an enforcement authority to identify who is responsible for a product and what that person claims to have done to ensure compliance. A properly issued UK Declaration of Conformity is always issued by the product's manufacturer (or by the person responsible for selling the product in the UK, and never by a test house.)

The Declaration must be signed by someone who has the power to make binding commitments on behalf of the manufacturer, but for the Declaration to be truly meaningful the signatory shall also be someone who has the authority to commit the resources required to ensure that the UKCA marking process is properly completed. The effect of the Declaration is to identify an individual in the company who can be held responsible if the UKCA marking on a product turns out to be invalid.

A UK Declaration of Conformity document is required to list the UK Regulations and a designated standard. Each Regulations has slightly different requirements for the content of its Declaration but some features are common to all:

- name/address of manufacturer (and of responsible person where applicable)
- model and/or serial number of equipment
- list of relevant Regulations

- list of Standards used – *NOTE: if listing a standard on the declaration you are declaring that you **fully** meet all the requirements of that standard, if only compliant with specific clauses of a standard then this must be identified.*
- declaration statement
- name and position of person signing
- signature
- date

5.9 UKCA marking the product

The UKCA mark must be applied to the product itself or to the packaging. There may be some cases where it can be placed in instruction manuals or other supporting literature depending on the specific regulations that apply to the product – check the details of the regulations that are applicable.

The following general rules apply:

- UKCA markings must only be placed on a product by you as the manufacturer or your authorised representative (where allowed for in the relevant legislation)
- When attaching the UKCA marking, you take full responsibility for your products conformity with the requirements of the relevant legislation
- You must only use the UKCA marking to show product conformity with the relevant UK legislation
- You must only place any marking or sign that may misconstrue the meaning or form of the UKCA marking to third parties.
- You must not attach other markings on the product which affect the visibility, legibility or meaning of the UKCA marking
- The UKCA marking cannot be placed on products unless there is a specific requirement to do so in the legislation

Using the UKCA image you must make sure that:

- UKCA marking must consist of the initials 'UKCA' in the standard recognised form.



- If the size of the marking is reduced or enlarged, the letters forming the UKCA marking as shown above, must be in proportion to the standard version.

- UKCA marking must be at least 5mm in height – unless a larger minimum dimension is specified in the relevant legislation
- UKCA marking must be easily visible, legible and from 1st January 2023 must be permanently attached

5.10 Traceability marking of electrically powered office furniture

As well as the UKCA mark being placed on the product the applicable Regulations also describe traceability requirements allowing identification with a manufacturer's contact details. Electrically powered office furniture must be marked visibly, legibly and indelibly with the following minimum particulars:

- **Business name and full address of the manufacturer**

The purpose of the requirement is to enable the user or the market surveillance authorities to contact the manufacturer. The term 'business name' refers to the name under which the company concerned is registered. The term 'full address' means a postal address that is sufficient to enable a letter to reach the manufacturer.

- **Designation of the machinery**

The term 'designation of the machinery' refers to the usual name of the category of machinery to which the specific model of machinery belongs.

- **UKCA Marking**

See previous section for rules of UKCA marking.

- **Designation of series or type**

The designation of the series or type is the name, code or number given by the manufacturer to the model of machinery concerned that has been subject to the relevant conformity assessment procedure.

- **Serial number, if any**

There is no requirement for products to bear a serial number, but where a serial number has been attributed by the manufacturer, it must be indicated after the designation of the series or type.

- **The year of construction**

The year in which the manufacturing process was completed.

NOTE: Standards used in the conformity assessment may also require additional markings e.g. 60335-1 requires markings related to rated voltage, frequency, power etc.

5.11 User Instructions and safety information

5.11.1 Introduction

A manufacturer's instructions must accompany the furniture until it reaches the user. As a general rule, all health and safety related instructions must be supplied in English. Original instructions must

be used; defined as a version of the instructions verified by the manufacturer. As the machinery is intended for general public, non- professional operators, the layout and content of the instructions must be adapted to the layperson and avoid specialist terminology.

5.11.2 Contents of the user instructions required by Supply of Machinery (Safety) Regulations

Each instruction manual must contain, where applicable, at least the following information:

- Business name and full address of the manufacturer
- Designation of the product as marked on the product itself
- UK Declaration of Conformity, or a document setting out the contents of the UK Declaration of Conformity, showing the particulars of the product
- General description of the product
- Drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the product and for checking its correct functioning
- Description of the intended use of the product
- Warnings concerning ways in which the product must not be used
- Assembly, installation and connection instructions
- Instructions for the putting into service and use of the product
- Information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted
- Instructions on the protective measures to be taken by the user
- Conditions in which the product meets the requirement of stability during use
- Operating method to be followed in the event of accident or breakdown
- Description of the adjustment and maintenance operations that should be carried out by the user and the preventive maintenance measures that should be observed
- Specifications of the spare parts to be used

NOTE: *Standards used in the conformity assessment may also require additional specific information to be placed in the instructions for use e.g. 60335-1 refers to including the substance of the following in the instructions for use*

‘This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision’

5.12 Component parts incorporated into completed product

5.12.1 Introduction

Components not sold 'over the counter' are typically not required to be UKCA marked. The finished products that use these components must meet all applicable Regulations as previously identified. Compliance of the finished product is highly dependent on compliance of critical components used in the completed assembly. Many Regulations / Standards such as safety standards under the Electrical Equipment (Safety) Regulations and Supply of Machinery (Safety) Regulations require all critical components to comply with the appropriate component safety standard. Other Regulations like the EMC Regulations involves testing on the finished product that will conclude with 'failing results' if EMC critical components do not comply.

5.12.2 Component suppliers of critical components

It is recommended that manufacturers of critical components comply with all applicable Regulations and Standards or they may be 'selling their customers a problem'. Leaving it to the finished product manufacturer to verify that the component meets the applicable component standards would require important design and materials details to be supplied to the final manufacturer and increase testing / prototyping costs.

The process diagram on page 27 is the same for components as it is for products – identify the applicable Regulations then verify the component meets the appropriate standards with the applicable Regulations. Component suppliers should review component construction and perform appropriate tests in accordance with standards for typical critical components in powered furniture including motors, transformers, power supplies and relays.

5.12.3 Manufacturers using critical components in final product

Manufacturers sourcing critical components should ensure that they comply with applicable Regulations and Standards. Requesting a copy of the D.O.C (Declaration of Conformity) from suppliers for all critical components is advised. The D.O.C must show the Regulations to which the components comply. Manufacturers should check that Regulations applied to the finished product are present on the component D.O.C. For safety Regulations (SMR, EER, EMC), manufacturers should check if the applicable component safety standard is on the component D.O.C. The Supply of Machinery (Safety) Regulations contain a special exception for machinery components and subassemblies that are unable to be evaluated until they are incorporated into the final product – see section 4.1.7 Declaration of Incorporation.

If the product is required to meet the RoHS Regulations – make sure that ALL components and materials meet the RoHS Regulations. If a component or material is not declared compliant with RoHS on its D.O.C you will have to test the component to verify compliance.

The best solution for manufacturers of the final product is to utilize the fewest number of critical components that are not UKCA compliant. Selecting a non UKCA marked component based on cost saving is a bad idea. The cost savings will be more than offset by the added cost and time necessary to have the component evaluated for UKCA compliance – or worse the non UKCA marked part could cause failure to EMC or ROHS testing for the completed product.

Appendix A

Applicable Regulations and Standards for common examples of electrically powered office furniture

Finding applicable Standards can be challenging. If in doubt expert advice should be sought from an organisation such as FIRA International Ltd. Once applicable Standards have been identified, an independent third party test facility, such as FIRA International, can provide the necessary testing services.

In this section there are some examples and detailed information relating to applicable Regulations and Standards for electrically powered office furniture. To assist with determining which Regulations apply to a product, it is helpful to understand the product's intended use as well as its construction and technical aspects. It is advisable for a manufacturer to write a brief summary, including:

- Technical description
- Intended use
- Environment in which it is to be used

It is important to note that the examples within this document may not match an organisation's specific product and, as such, care is needed when working towards compliance with the Regulations.

Common product ranges requiring UKCA marking

- Electrically operated / height adjustable office desks
- Electrically operated / adjustable stand for PC monitor(s)

A1 Electrically operated / height adjustable office desking (sit / stand desks)

NOTE: At the time of publication of this revised document (January 2021), HSE is considering clarification of responsibilities for those height adjustable desk manufacturers that purchase the adjustable legs and only affix the desktop component (this does not apply to those manufacturers that modify the original adjustable leg design to complement their own design specifications – full responsibilities would still apply). The proposed changes are that the adjustable leg manufacturer would take on the responsibilities of the manufacturer and issue the Declaration of Conformity rather than the company fitting the desktop. The details of this proposal have not yet been clarified, i.e. who is responsible for final UKCA marking label or completed risk assessment. Manufacturers of these type of products should keep abreast of the changes and keep track of updates to the machinery directive guide to clarify their responsibilities.

A1.1 Technical description - An electro-mechanically height adjustable desktop with control interface to adjust height up and down. The system consists of desktop and legs containing motors that power a mechanism to raise and lower the legs using a control interface with safety collision function built into the control system. The product is powered by domestic mains voltage 230V – 240V 50Hz with a UK plug conforming to BS 1363.

A1.2 Intended use - The product is designed for use in an office where adjustable desking is considered suitable for 'adults of 12 years and above'. The desks intended use is as a platform for performing office related tasks with no medical claims.

A1.3 Application environment - This product is purely designed for use within an office environment. The product is designed to be moved only within the intended room of use, for cleaning and for access.

The related Directives are:

- EMC Directive
- RoHS Directive
- Supply of Machinery (Safety) Regulations including Electrical Equipment (Safety) Regulations requirements via SMR clause 1.5.1

A1.4 Standards – These are the typical Standards related to these Directives that require testing for inclusion in the Technical File and ensure compliance for UKCA marking:

EER via SMR clause 1.5.1	IEC 60335-2-116 - Household and similar appliances - Safety - Part 2-116: Particular requirements for furniture with electrically motorised parts * * <i>NOTE: compliance with BS EN 60335-2 is under revision and is not yet a designated standard. Nevertheless, compliance with this standard would go a long way to meeting the safety objectives of clause 1.5.1 of the SMR.</i>
EMC	BS EN 61000-6-1:2007 Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environment BS EN 61000-6-3 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments. BS EN 61000-3-2 Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions (equipment input current < 16A per phase) BS EN 61000-3-3 Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low voltage supply systems, for equipment with rated current < 16A per phase and not subject to conditional connection
RoHS	BS EN 50581 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.
SMR	There are Furniture Standards related to this type of product that are not designated standards to presume compliance with SMR but will support compliance with some of the clauses in Annex I and can be referred to in the Technical File to justify compliance. BS EN 527-1 Office furniture. Work tables and desks. Dimensions BS EN 527-2 Office furniture. Work tables. Safety, strength and durability requirements Within the hierarchy of compliance this product must comply with all the clauses within the SMR – therefore the following designated standards can also be used to satisfy clauses in Annex I of the directive.

	BS EN ISO 12100 Safety of machinery. General principles for design. Risk assessment and risk reduction BS EN 349 Safety of machinery - Minimum gaps to avoid crushing of parts of the human body BS EN ISO 13857 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs. It is advised that manufacturers carry out a gap analysis on their product against all the related clauses in Annex I of the SMR to verify that their product is fully covered.
Associated Standards to be noted	The collection of Standards listed in 'associated Standards' can also be used to demonstrate conformance to certain clauses within the SMR and can be referred to in the Technical File to further justify compliance. BS EN ISO 9241-5 Ergonomic requirements for office work with visual Displays terminals (VDTs). Workstation layout and postural requirements BS 6396:2008+A1:2015 - Electrical systems in office furniture and educational furniture. Specification

A2 Electrically operated / adjustable stand for PC monitor(s)

A1.1 Technical description - An electro-mechanically height adjustable monitor arm with control interface to adjust height up and down. The system consists of central pillar incorporating a motor that powers a mechanism to raise and lower the central pillar. The monitor arms are attached either side of the central pillar. The product is powered by domestic mains voltage 230V – 240V 50Hz with a UK plug conforming to BS 1363.

A1.2 Intended use - The product is designed for use in an office where adjustable monitor stands are considered suitable for 'adults of 12 years and above'. The monitor stand intended use is as a PC monitor holder that can be adjusted for height dependant on user's ergonomic requirements.

A1.3 Application environment - This product is purely designed for use within an office environment. The product is designed to be moved only within the intended room of use, for cleaning and for access.

The related Directives are:

- EMC Directive
- RoHS Directive
- Supply of Machinery (Safety) Regulations including Electrical Equipment (Safety) Regulations requirements via SMR clause 1.5.1

A1.4 Standards – These are the typical Standards related to these Directives that require testing for inclusion in the Technical File and ensure compliance for CE marking:

EER via SMR clause 1.5.1	IEC 60335-2-116 - Household and similar appliances - Safety - Part 2-116: Particular requirements for furniture with electrically motorised parts * * NOTE: compliance with BS EN 60335-2 is under revision and is not yet a designated standard. Nevertheless, compliance with this standard would go a long way to meeting the safety objectives of clause 1.5.1 of the SMR.
EMC	BS EN 61000-6-1 Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments BS EN 61000-6-3 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments. BS EN 61000-3-2 Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions (equipment input current < 16A per phase) BS EN 61000-3-3 Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low voltage supply systems, for equipment with rated current < 16A per phase and not subject to conditional connection
RoHS	BS EN 50581 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.
SMR	There is no dedicated Standard related to this type of product, therefore within the hierarchy of compliance this product must comply with all the clauses within the SMR. The following Standards will support compliance with the clauses in Annex I and can be referred to in the Technical File to further justify compliance. FIRA PP 045 VDU platform and support arm performance specification BS EN ISO 9241-5 Ergonomic requirements for office work with visual Displays terminals (VDTs). Workstation layout and postural requirements BS EN ISO 12100 Safety of machinery. General principles for design. Risk assessment and risk reduction BS EN 349 Safety of machinery - Minimum gaps to avoid crushing of parts of the human body BS EN ISO 13857 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs. It is advised that manufacturers carry out a gap analysis on their product against all the related clauses in Annex I of the machine Directive to verify that their product is fully covered.

References

Always ensure you are referring to the latest version of any document in this list, as they are subject to revision. Also check whether documents have been withdrawn and whether additional, or replacement documentation has come into force.

Directives

Electromagnetic Compatibility Regulations

General Product Safety Regulations

Electrical Equipment (Safety) Regulations

Supply of Machinery (Safety) Regulations

Reduction of Hazardous Substances Regulations (RoHS)

Radio Equipment Regulations (RED)

Gas Appliances Regulation (GAR)

Toy Safety Regulations

Standards

BS EN 349 - Safety of machinery - Minimum gaps to avoid crushing of parts of the human body

BS EN 527-1 - Work tables and desks. Dimensions

BS EN 527-2 - Office furniture. Work tables and desks. Mechanical safety requirements

BS EN ISO 13857 - Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs.

BS EN ISO 9241-5 - Ergonomic requirements for office work with visual Displays terminals (VDTs). Workstation layout and postural requirements

BS EN 50581 - Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

BS EN ISO 12100 - Safety of machinery. General principles for design. Risk assessment and risk reduction

BS EN 61000-6-1 - Electromagnetic compatibility (EMC). Generic standards. Immunity for residential, commercial and light-industrial environments

BS EN 61000-6-3 - Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.

BS EN 61000-6-2 - Generic Standards Immunity for Industrial Environments

BS EN 61000-6-4 - Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments

BS EN 61000-3-2 - Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions (equipment input current < 16A per phase)

BS EN 61000-3-3 - Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low voltage supply systems, for equipment with rated current < 16A per phase and not subject to conditional connection

BS EN 62321 - Electrotechnical products Determination of levels of six regulated substances (lead, mercury, cadmium, Hexavalent chromium, Polybrominated biphenyls)

BS EN ISO 9001 - Quality Management systems. Requirements

BS EN 60204-1 - Safety of machinery. Electrical equipment of machines. General requirements

BS EN 60335-1 - Household and similar electrical appliances. Safety. General requirements

60335-2-116 - Household and similar appliances - Safety - Part 2-116: Particular requirements for furniture with electrically motorised parts.

FIRA PP 045 - VDU platform and support arm performance specification

BS 1363-1 - 13 A plugs, socket-outlets, adaptors and connection units. Specification for rewirable and non-rewirable 13 A fused plugs

BS 6396 - Electrical systems in office furniture and educational furniture. Specification

About the author

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Bruce has been with FIRA International since 2004 and has extensive experience of auditing and consultancy in various disciplines including environmental and quality management, lean manufacturing, production, project and compliance. Specifically, Bruce's role includes:

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- Product certification auditor for FIRA International Gold Certification
- Sustainability and FISP auditor / consultant
- Management system consultancy - 9001
- Lean manufacturing consultant
- CE / UKCA Marking consultancy





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