

MANUFACTURING, IMPORTING AND SALES OF ELECTRICAL EQUIPMENT

tukes



Text: Tukes 6/2014

Cover image: [Istockphoto.com/Krystian Nawrocki](https://www.istockphoto.com/Krystian+Nawrocki)

Images: Sami Karisola, Saara Sivonen,

European Commission,

[Istockphoto.com/Troels Graugaard](https://www.istockphoto.com/Troels+Graugaard); gerenme;

spxChrome

Look: Hahmo Design Oy

Layout: Kati Kyyrö

ISBN 978-952-5649-59-8 (PDF)

TABLE OF CONTENTS

1. Introduction	4	5.3. RoHS - restriction of hazardous substances	16
2. What is your role?	5	5.4. Ecodesign	16
2.1. Manufacturer	5	5.5. Energy labelling	16
2.2. Authorised representative	5	5.6. ATEX - equipment in potentially explosive atmospheres	17
2.3. Importer	5	5.7. Batteries and accumulators	17
2.4. Distributor	5	5.8. WEEE - Waste electrical and electronic equipment	17
2.5. Economic operator	5	5.9. Other directives applying to certain electrically powered equipment	17
3. Obligations of economic operators	6	6. Market surveillance	18
3.1. Manufacturer's obligations	6	6.1. Activities of the market surveillance authority	18
3.2. Authorised representative's obligations	8	7. Example of an EU Declaration of Conformity	19
3.3. Importer's obligations	8	8. Checklists	20
3.4. Distributor's obligations	9	8.1. Manufacturer	20
4. Placing on the market	10	8.2. Importer	20
4.1. Six steps to demonstrate conformity	10	8.3. Distributor	21
4.2. EU Declaration of Conformity	12	9. Common reasons for non-compliance of electrical equipment	22
4.3. Technical documentation	12	10. Table of obligations of economic operators	23
4.4. Instructions	12		
4.5. Markings and information	13		
5. Directives applying to electrical equipment	15		
5.1. LVD - electrical safety	15		
5.2. EMC - electromagnetic compatibility	15		

1. INTRODUCTION

HUNDREDS OF THOUSANDS of electrical equipment are on the market in Finland, and all of them must conform to certain requirements. However, hundreds of non-conforming equipment is found on the market annually. Some are discovered to have serious safety defects that could, for example, cause a risk of electric shock or fire. Equipment can also disturb the operation of other equipment, contain substances that are hazardous to the environment and health, or consume too much energy.

Consumers are increasingly aware of the dangers related to electrical equipment. They are also interested in issues of energy-efficient domestic appliances, recycling of waste electrical and electronic equipment, and the burden on the environment. Choices matter, also for the environment.

The manufacturers and importers bear primary responsibility for the conformity of electrical equipment. According to the Electrical Safety Act (410/1996), every equipment supplier, such as wholesalers, retail suppliers, and sellers or recyclers of used goods, is also responsible for the electrical equipment being safe and interference-free.

The professional skills of those selling electrical equipment include being aware of the requirements set for the equipment and their various markings. This is an essential element of good customer service. Neglecting to ensure equipment's electrical safety can, in extreme circumstances, lead to serious consequences and considerable costs.

This guide follows the European Union's new legislative framework¹ for marketing of equipment placed on the market. The framework clarifies the responsibilities of operators in particular, and it improves the equipment's traceability. The new requirements affecting electrical equipment first came into effect with the RoHS Directive.

This guide discusses the responsibilities related to the manufacturing, importing, and sales of electrical equipment and is an attempt to answer the following questions, for example: Who is responsible, and for what? What requirements have been set for the equipment? What must be done before equipment is placed on the market? What do the market surveillance authorities monitor, and how? What are common defects found in electrical equipment?

1. New Legislative Framework (NLF): recorded in Regulation (EC) No 765/2008 of the European Parliament and of the Council and in Decision 768/2008/EC



The manufacturers and importers bear primary responsibility for the conformity of electrical equipment.

BEFORE ELECTRICAL EQUIPMENT reaches store shelves, it may have passed through the hands of a long chain of economic operators. Under EU legislation, economic operators are divided into four groups: manufacturers, authorised representatives, importers, and distributors. All of these play their own role in verifying the conformity of the equipment. For this reason, it is very important for an economic operator to know his role in the chain and what obligations that role entails.

2.1. Manufacturer

'Manufacturer' shall mean any natural or legal person manufacturing electrical equipment or having electrical equipment designed or manufactured and who markets that electrical equipment under his name or trademark.

2.2. Authorised representative

'Authorised representative' shall mean any natural or legal person established within the EU who has received a written mandate from the manufacturer to act on his behalf in relation to specified tasks.

2.3. Importer

'Importer' shall mean any natural or legal person established within the EU who places electrical equipment from a third country on the EU market.

The importer shall be considered a manufacturer when he places electrical equipment on the market under his name or trademark. However the obligations of a manufacturer are not applied to the importer, if the original manufacturer of the equipment has prepared an EU Declaration of Conformity and the manufacturer's name

and address are stated on the equipment, on its packaging, or in the included documentation. The importer shall be considered the manufacturer also when he modifies equipment already placed on the market in such a way that compliance with the applicable requirements may be affected.

2.4. Distributor

'Distributor' shall mean any natural or legal person other than manufacturer or importer who makes electrical equipment available on the market – i.e., puts on the national market equipment that has already been placed on the EU market. Distributors also include retailers and wholesalers of electrical equipment, along with commercial sellers of used goods, such as recycling centres and flea markets.

The distributor shall be considered a manufacturer when placing electrical equipment on the market under his name or trademark. However the obligations of a manufacturer are not applied to the distributor, if the original manufacturer of the equipment has prepared an EU Declaration of Conformity and the manufacturer's name and address are stated on the equipment, on its packaging, or in the included documentation. The distributor shall also be considered the manufacturer, when he modifies equipment already placed on the market in such a way that compliance with the applicable requirements may be affected.

2.5. Economic operator

'Economic operator' shall refer to manufacturers, authorised representatives, importers, and distributors.



Troels Graugaard

3. OBLIGATIONS OF ECONOMIC OPERATORS

EUROPEAN UNION DIRECTIVES SET FORTH the fundamental requirements as to safety, environmental considerations, consumer protection, and energy-efficiency related to electrical equipment, along with the applicable conformity assessment procedures. Equipment may be placed on the EU market and brought into use only if it meets the essential requirements set forth in the applicable directives. The following sections present the obligations of the various economic operators for ensuring the conformity of the equipment.

3.1. Manufacturer's obligations

The manufacturer is responsible for ensuring that the electrical equipment meets the requirements of all applicable directives. The manufacturer must carry out the applicable conformity assessment procedure or have it carried out; this comprises the checks and tests that allow the conformity of the equipment to be assessed and verified. Technical details and testing methods associated with the requirements are presented in European harmonised standards. The term 'harmonised standard' refers to a standard confirmed by a European standardisation body (CENELEC, CEN, or ETSI) at the request of the European Commission, the reference data for which has been published in the Official Journal of the European Union.

If the design, manufacture, inspection, and testing of the electrical equipment are carried out in compliance with harmonised standards and the equipment fully meets the requirements of these standards, the equipment is presumed to be in conformity with the applicable essential requirements (presumption of conformity). The use of harmonised standards is, however, voluntary. The manufacturer may, alternatively, choose some other way of attesting conformity with the essential requirements of the directives. In practice, however, this approach is more difficult than following the established standards.

The directives specify whether a Notified Body is required to be involved in the conformity assessment of the electrical equipment. A Notified Body is approved by a national authority to carry out conformity assessment tasks. They are notified to the European Commission and listed in the [NANDO database](#). Market surveillance authorities do not inspect equipment before they have been placed on the market.

Once the manufacturer of the electrical equipment has drawn up the required technical documentation and demonstrated the equipment's compliance with the applicable requirements in accordance with the conformity assessment procedure, the manufacturer shall draw up and sign an EU Declaration of Conformity. A model EU Declaration of Conformity can be found on [page 19](#). To attest and prove conformity, the manufacturer must affix the CE marking to every piece of equipment placed on the market.

In addition to the CE marking, the required markings must be affixed to the electrical equipment. The instructions and information necessary for the safe and purposeful installation, operation, maintenance, and decommissioning of the equipment must also be delivered with the equipment, in Finnish and Swedish. All equipment must have a type, batch, or serial number that allows their identification. The manufacturer must also state his name, registered trade name or trademark, and address on the equipment or, failing that, on the packaging of the equipment or in the included documentation.

In the serial production of electrical equipment, procedures must be in place to ensure that all equipment meet the essential requirements of the directives. Changes to the equipment's design or features, along with changes to harmonised standards or technical specifications on the basis of which the conformity of the equipment is declared, must be taken into consideration in the conformity

The manufacturer is responsible for ensuring that the electrical equipment meets the requirements of all applicable directives.



gerenme

assessment of the equipment.

When this is deemed appropriate with regard to the risks presented by the electrical equipment, the manufacturer shall, in order to safeguard the health and safety of consumers and the environment, carry out sample testing of marketed products; investigate and, if necessary, keep a register of complaints, non-conforming products, and product recalls; and keep distributors informed of any such monitoring.

Manufacturer who suspects that electrical equipment he has placed on the market is not in conformity with the applicable requirements shall immediately take the corrective measures necessary for bringing that equipment into conformity or to withdraw or recall it. Furthermore, where the equipment's characteristics present a risk to

safety, health, or the environment, the manufacturer shall inform the market surveillance authority of the non-compliance and of any corrective measures taken.

The manufacturer shall retain the EU Declaration of Conformity, the technical documentation, and the identifying information of economic operators to which it has supplied the equipment for 10 years after the last electrical equipment has been placed on the market. Upon request, the manufacturer must present the above-mentioned information and documents related to the equipment to the market surveillance authority and co-operate with the surveillance authority.

A checklist of manufacturer's obligations can be found on [page 20](#) and a table of the obligations of the economic operators on [page 23](#).

3. OBLIGATIONS OF ECONOMIC OPERATORS

3.2. Authorised representative's obligations

A manufacturer may, via a written mandate, appoint an authorised representative. The representative must be established within the EU.

The representative may perform certain administrative tasks, such as affixing the CE marking and preparing the EU Declaration of Conformity. The representative must be authorised to perform at least the following tasks

- *to keep the EU Declaration of Conformity and the technical documentation at the disposal of market surveillance authorities for 10 years after the last electrical equipment has been placed on the market*
- *to provide the surveillance authority, at that authority's request, with all the information and documentation necessary to demonstrate the conformity of the equipment*
- *to co-operate with the surveillance authority in order to ensure the conformity of the equipment*

The manufacturer may not transfer to an authorised representative his obligation to ensure that the equipment has been designed and manufactured in accordance with the applicable requirements or its obligation to draw up the technical documentation.

The authorised representative shall keep the identifying information of economic operators to which it has supplied the equipment, for 10 years after the last electrical equipment has been placed on the market.

A table of the obligations of the economic operators can be found on [page 23](#).

3.3. Importer's obligations

The importer must ensure that the appropriate conformity assessment procedures for the electrical equipment have been carried out by the manufacturer and that the manufacturer has drawn up the technical documentation and the EU Declaration of Conformity. The importer must also ensure that the equipment bears the required markings, such as the CE marking. Furthermore, the importer must ensure that any national special requirements are met. When the importer suspects the equipment not to be in conformity with the applicable requirements of the directives, he shall not place the equipment on the market until it has been brought into conformity.

The importer must state his name, registered trade name or trademark, and address on the electrical equipment or, failing that, on the packaging of the equipment or in the included documentation. In Finland, the importer must also ensure that the required documentation, such as operation, installation, and maintenance instructions and other required safety instructions have been included with the equipment, in Finnish and Swedish. The importer shall ensure that, while the equipment falls under its responsibility, storage or transport conditions do not jeopardise its compliance with the requirements.

When this is deemed appropriate in view of the risks presented by the equipment, the importer shall, to protect nature and the health and safety of consumers, carry out sample testing of marketed products; investigate and, if necessary, keep a register of complaints, non-conforming products and product recalls; and keep distributors informed of such monitoring.

The importer must ensure that the appropriate conformity assessment procedures for the electrical equipment have been carried out by the manufacturer and that the manufacturer has drawn up the technical documentation and the EU Declaration of Conformity.



Saara Sivonen

The importer who suspects that the electrical equipment he has placed on the market is not in conformity with the requirements shall immediately take the corrective measures necessary to bring the equipment into conformity or, to withdraw or recall it. Furthermore, if the equipment presents a risk to safety, health or the environment, the importer shall immediately inform the market surveillance authority of the non-compliance and of any corrective measures taken.

The importer shall, for 10 years after the last electrical equipment has been placed on the market, keep a copy of the EU Declaration of Conformity at the disposal of the market surveillance authorities. The importer must also ensure that the technical documentation can be made available to the market surveillance authorities, upon request, and co-operate with the authority. Furthermore, the importer shall, for 10 years after the last equipment has been placed on the market, retain the identifying information of economic operators who have supplied him with equipment and of economic operators he has supplied with equipment.

A checklist of the importer's obligations can be found on [page 20](#) and a table of the obligations of the economic operators on [page 23](#).

3.4. Distributor's obligations

The distributor must check that the electrical equipment in question bears the required markings and that the required documents, instructions, and safety information have been included with the equipment, in Finnish and Swedish. The distributor shall ensure that, while the equipment falls under its responsibility, storage or transport conditions do not jeopardise its compliance with the requirements.

Distributor who suspects that the electrical equipment he has placed on the market is not in conformity with requirements, the distributor must ensure that the manufacturer, the importer, or, if necessary, the distributor himself takes the corrective measures necessary to bring the equipment into conformity or to withdraw or recall it, if appropriate. Furthermore, when equipment presents a risk to safety, health, or the environment, the distributor shall immediately inform the market surveillance authority of the non-compliance and of any corrective measures taken.

At the request of a national market surveillance authority, the distributor must provide all the information and documentation necessary to demonstrate the conformity of the electrical equipment. The distributor shall also, for 10 years after the last equipment has been placed on the market, retain the identifying information of the economic operators who have supplied him with equipment and of the economic operators he has supplied with equipment.

A checklist of the distributor's obligations can be found on [page 21](#) and a table of the obligations of the economic operators on [page 23](#).

4. PLACING ON THE MARKET

'MAKING AVAILABLE ON THE MARKET' shall mean any supply of electrical equipment for distribution, consumption, or use on the EU market in the course of commercial activity, whether in return for payment or free of charge.

'Placing on the market' shall mean the first making available of the electrical equipment on the EU market. It should be noted that the concept of placing on the market refers to individual equipment, not a particular equipment type, whether the equipment was manufactured in one-off or in serial production. The equipment must be in conformity with the requirements of the applicable directives when it is placed on the EU market or brought into use for the first time.

All economic operators in the supply chain are responsible for the conformity of the electrical equipment. A market surveillance authority may assess the conformity of the equipment placed on the market, by, for example, testing it or requesting an economic operator to provide it with the EU Declaration of Conformity, technical documentation, and other information. Placing equipment on the market does not require inspection or approval by the surveillance authorities.

Market surveillance authorities do not inspect equipment before they have been placed on the market.

4.1. Six steps to demonstrate conformity

Identify the applicable directives and harmonised standards

The essential requirements that the electrical equipment must fulfil are harmonised at EU level and specified in the directives applying to the equipment in question. The harmonised standards are published in the Official Journal of the European Union, with references to the applicable directives, and they describe in detail the technical requirements for equipment.

Check the equipment-specific requirements

The manufacturer must always check that the electrical equipment complies with the essential requirements of the EU legislation. If the equipment is fully compliant with the harmonised standards, there is a presumption of conformity. The use of harmonised standards is, however, voluntary.

If the manufacturer has not applied harmonised standards or has applied them only partially, documentation must be presented of the measures taken and their sufficiency before the equipment can be deemed to be in compliance with the essential requirements.

Does the equipment need a conformity assessment by a Notified Body?

The directives determine whether a third party, a Notified Body, is required for the conformity assessment. This is usually not mandatory for electrical equipment, with the exception of certain equipment intended to be used in potentially explosive atmospheres (ATEX). If the equipment is also covered by directives other than those pertaining to electrical equipment (for example, the [Appliances Burning Gaseous Fuels Directive](#)), it is important to check whether the participation of a Notified Body is required.



Affix the CE marking to the equipment, and draw up the EU Declaration of Conformity

The CE marking is affixed to the electrical equipment by the manufacturer or his authorised representative. It must be affixed to the equipment or its rating plate in such a way that it is visible, readable, and permanent. If a Notified Body has participated in the conformity assessment, the information must also include its identification number. The manufacturer is responsible for drawing up and signing the EU Declaration of Conformity.

After this, the CE-marked electrical equipment may be placed on the market.



5 Draw up the required technical documents, and keep them available

The manufacturer must draw up the technical documentation required by the relevant directives for the assessment of whether the electrical equipment is in compliance with all applicable requirements, and it can also be used to perform a risk assessment, if appropriate. The EU Declaration of Conformity and the technical documentation must be presented to the market surveillance authorities upon request.

4 Test the equipment and/or check whether it is in compliance with the requirements

The manufacturer must carry out tests and/or checks, or have them carried out, to ensure that the electrical equipment is compliant with EU legislation (conformity assessment procedure). The procedure usually includes risk assessment also. By applying harmonised standards, one will be able to fulfil the essential requirements of the directives.

4. PLACING ON THE MARKET

4.2. EU Declaration of Conformity

The EU Declaration of Conformity must be translated into the language(s) required by the Member State on the market of which the electrical equipment is placed or made available. In Finland, the EU Declaration of Conformity must be in Finnish, Swedish, or another language approved by the market surveillance authority.

The EU Declaration of Conformity must include at least the following information:

- The name and address of the manufacturer
- If necessary, the name and address of the authorised representative established within the EU
- A clause stating that the EU Declaration of Conformity has been prepared under the sole responsibility of the manufacturer
- Description and identifying information of the electrical equipment (a photograph may be attached)
- Reference to all applied directives
- Reference to the relevant harmonised standards applied or to specifications based on which the EU Declaration of Conformity has been prepared
- If necessary, the name and number of the Notified Body and the number of the associated certificate
- The date of the declaration
- The identifying information and signature of the person authorised to represent the manufacturer or his authorised representative
- If the LVD Directive is applied, the last two digits of the year in which the CE marking was affixed.

A model EU Declaration of Conformity can be found on [page 19](#).

4.3. Technical documentation

It must be possible to assess whether the electrical equipment is in compliance with the essential requirements from the technical documentation drawn up by the manufacturer. The documentation must include an appropriate analysis and assessment of the risks related to the equipment. It also must cover the design, manufacture, and operation of the equipment to the extent it is essential for the assessment. The documentation must include at least

- *a description of the electrical equipment;*
- *design and manufacturing drawings, along with diagrams of the component assemblies, circuits, etc.;*
- *the descriptions and explanations necessary for understanding the drawings and diagrams;*
- *a list of the standards that were applied fully or in part, with descriptions of how the requirements of the directive were met if the standards were not applied: results of the design calculations, the checks performed, etc.; and*
- *test reports and certificates.*

The harmonised standards related to the various directives can be found at the address ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/index_en.htm.

Standards can be purchased from [the Finnish Standards Association \(SFS\)](#) and [SESKO](#).

4.4. Instructions

Instructions of various types form an essential part of the electrical equipment and its safe use. Equipment placed on the market must include clear safety, installation, operation, and maintenance instructions, to enable the safe use of it for the purpose and conditions for which they were designed. Several Finnish laws and decrees contain stipulations as to the content requirements for the instructions and state that the instructions must be provided in Finnish and Swedish. Equipment-specific standards often present detailed requirements specifying the information, instructions, and warnings that the instructions must include.

For more information, see www.tukes.fi/Tiedostot/julkaisut/Tuotteiden_kaytto-ohjeet_opas.pdf (in Finnish).

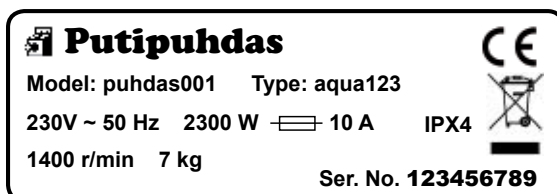
4.5. Markings and information

Before placing electrical equipment on the market, one must ensure that the equipment bears all markings and information required in the directives, to ensure the safe and purposeful deployment, use, maintenance, and decommissioning of the equipment. Several standards applying to the equipment determine the compulsory information and markings that must be affixed to the equipment.

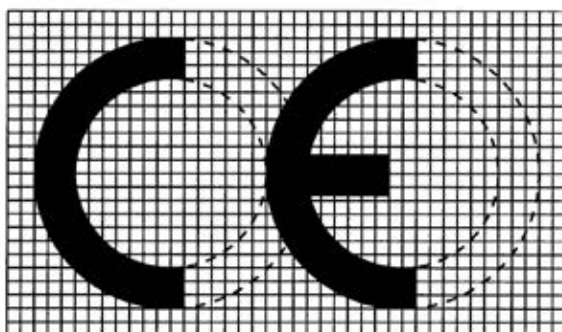
With the CE marking affixed to the electrical equipment, the manufacturer assures that it has guaranteed that the equipment meets the EU requirements related to safety, health, the environment, consumer protection, and energy-efficiency. The CE marking enables free movement of the equipment within the EU market. Many Finnish companies benefit from the CE marking, as it guarantees entry of their equipment to the European market. The CE marking must be affixed to the electrical equipment or its rating plate in such a manner that it is visible, easily readable, and permanent. Failing that the marking must be affixed to the packaging and the included documentation.

In addition to the CE marking, each piece of electrical equipment must have a type, batch, or serial number to allow its identification. If this is not possible due to the size or nature of the equipment, the required information must be specified on the packaging or in a document included with the equipment. The manufacturer must state his name, registered trade name or trademark, and address on the equipment or, if this is not possible, on the packaging of the equipment or in the included documentation. If the electrical equipment has been manufactured outside the EU, the importer must ensure that the manufacturer has affixed the required markings to the equipment. The importer must state his name, registered trade name or trademark, and address on the equipment or, if this is not possible, on the packaging of the equipment or in the included documentation.

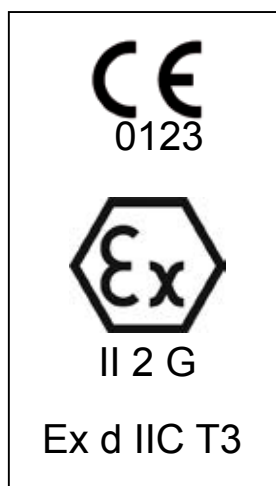
If limitations have been placed on the operating environment of the electrical equipment, this must be clearly stated on the equipment and, if so required, on the packaging. The ATEX Equipment Directive, for example, requires a special explosion-protection marking to be



The markings can often be found on the rating plate affixed to the relevant equipment. An example of the rating plate of a washing machine.



The CE marking must be at least 5 mm high.



CE = CE-marking
0123 = ID number of Notified Body

Ex = explosion protection symbol
II = equipment group
2 = equipment class
flammable substance:
G = gas, vapour or fog
D = dust

Ex = explosion protection symbol
d = type of explosion protection
II = explosion group I, IIA, IIB or IIC
T = temperature class T1...T6

An example of the ATEX marking and its legend.

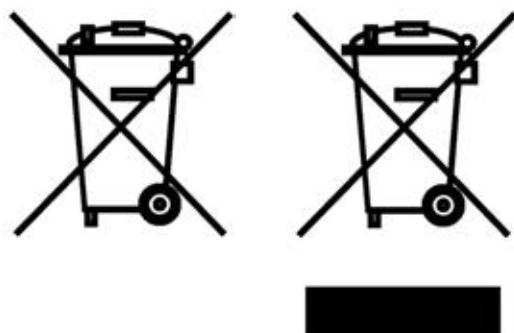
4. PLACING ON THE MARKET

affixed to the equipment covered, including the Ex mark and the equipment's group, its equipment class, and markings indicating the operating environment.

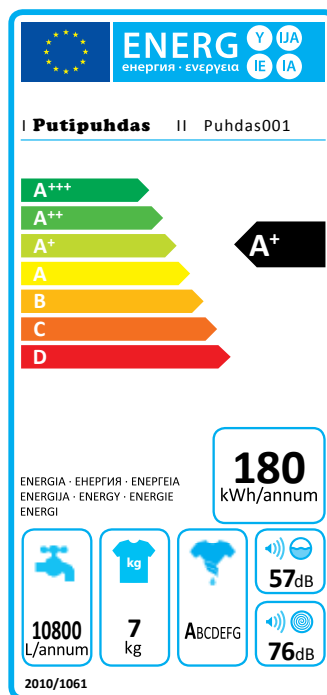
Electrical and electronic equipment and accumulators and batteries must be marked with a separate collection symbol. In special cases, on account of the size or operation of the equipment, the separate collection symbol may be on the equipment's packaging, in the operation instructions, and on the warranty certificate. The separate collection symbol must indicate whether the electrical or electronic equipment has been placed on the market after 13 August 2005. One way to do this is to follow the EN 50419 standard and add a black bar underneath the symbol. When appropriate, accumulators and batteries must also be marked with the symbols indicating heavy metal content (Pb, Cd, or Hg). In addition, accumulators need to be given a capacity marking.

To improve the equipment's energy-efficiency, requirements are set for their energy consumption during operation and the energy label assists consumers in buying energy-efficient equipment. The energy label must be included for equipment for which a product-group-specific energy labelling regulations have been issued. The regulations specify the required energy label's appearance, its content, and the bases for calculation of the energy classes by equipment group. Information to be provided during remote sales is also specified in the regulations. Ecodesign regulations may also require more detailed product information. For example the lifetime, colour temperature, and/or mercury content marked on the packaging of lamps.

The markings and information required for electrical equipment should be provided also in remote sales. Reporting the energy label information in remote sales is mandatory.



The separate collection symbol (left) is used on accumulators, batteries, and electrical and electronic equipment. It must be indicated on the equipment whether it has been placed on the market after 13 August 2005 – for example, with a black bar forming part of the marking (right).



An example of the energy label of a washing machine.



THE REQUIREMENTS APPLIED FOR electrical equipment are derived from EU directives, regulations, and decisions and also from national legislation. For more information, visit www.tukes.fi/en/Branches/Electricity-and-lifts/Electrical-equipment/Requirements-for-electrical-equipment/.

The revised LVD, EMC and ATEX directives were published in March 2014. The revised directives must be applied from April 20 2016.

5.1. LVD - electrical safety

The purpose of the Low Voltage Directive (2006/95/EC, 2014/35/EU) is to guarantee that the electrical equipment on the EU market do not endanger the safety of humans, domestic animals, or property when correctly used, installed, and serviced.

The directive's scope covers all electrical equipment operating within a rated voltage range of 50 to 1,000 volts with alternating current and within a rated voltage range of 75 to 1,500 volts with direct current. 'Rated voltage' refers to the supply or output voltage, not voltages that may be present within the equipment.

The Low Voltage Directive has been transposed into Finnish legislation with the following decrees: the Electrical Safety Act (410/1996), the Electrical Safety Decree (498/1996), and the Decision of the Ministry of Trade and Industry on the Safety of Electrical Equipment (1694/1993). The scope of the Electrical Safety Act is, however, broader than that of the Low Voltage Directive. The safety require-

ments of the Electrical Safety Act apply to equipment operating at all voltages.

It should be noted that the new Machinery Directive (2006/42/EC) and the Low Voltage Directive are mutually exclusive; when the electrical equipment is placed on the market, only one of them shall be applied, not both. In some cases, the manufacturer may choose which directive shall be applied to the equipment in question. Annex 1 of the Machinery Directive features electrical safety requirements that are the same as those in the Low Voltage Directive. The safety requirements of these directives are, therefore, identical, but the EU Declaration of Conformity shall refer to only one of the two: either the Machinery Directive or the Low Voltage Directive.

5.2. EMC - electromagnetic compatibility

The purpose of the EMC Directive (2004/108/EC, 2014/30/EU) is to ensure that the electromagnetic compatibility of the equipment is sufficient. This should protect radio data communications, electrical and data-communication networks, and the connected equipment from electromagnetic interference.

Equipment within the scope of the EMC Directive shall mean any equipment or fixed installation intended for an end-user, which can cause electromagnetic interference or the operation of which can be affected by electromagnetic interference. The requirements for fixed installations and equipment differ.

5. DIRECTIVES APPLYING TO ELECTRICAL EQUIPMENT

5.3. RoHS - restriction of hazardous substances

The purpose of the RoHS Directive ([2011/65/EU](#)) is to protect the health of people and the environment and to reduce the harmfulness of waste electrical and electronic equipment. It also is intended to promote the utilisation and final processing of waste electrical and electronic equipment in a manner that conserves the environment by limiting the use of cadmium, lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs), and polybrominated diphenyl ethers (PBDEs) in electrical and electronic equipment. No homogenous material of the equipment may contain more than 0.01% cadmium by weight or 0.1% by weight of any other substance listed above.

The directive applies to equipment that require an electrical current or an electromagnetic field in order to work properly in at least one of its purposes of use or that are designed for generating, transferring, or measuring such current or field. Additionally, the equipment must have been designed to use alternating current with a maximum voltage of 1,000 V or direct current with a maximum voltage of 1,500 V.

5.4. Ecodesign

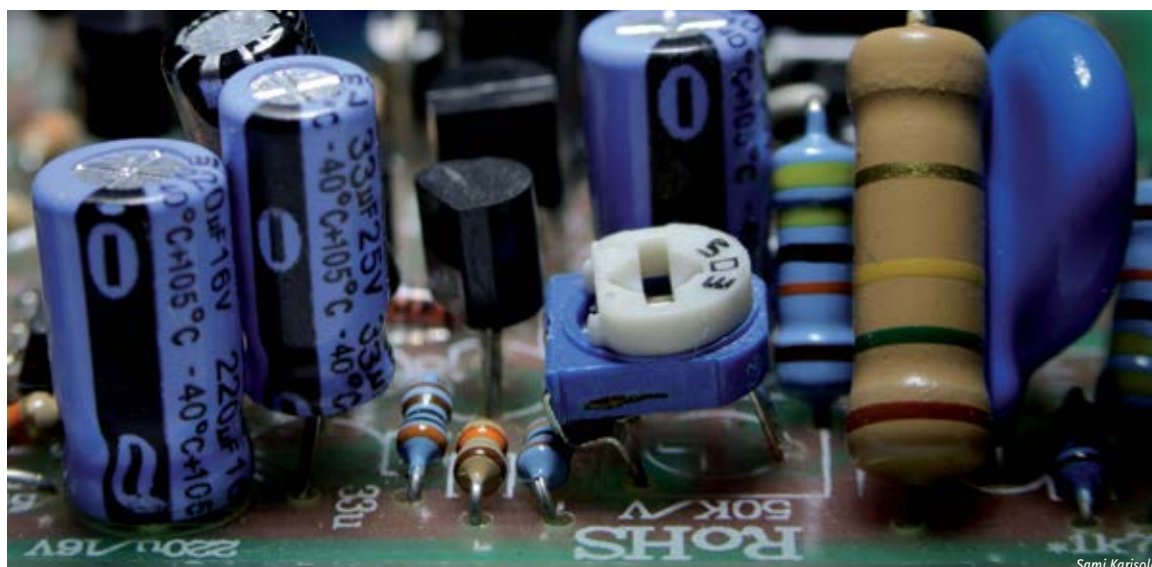
The purpose of the Ecodesign Directive ([2009/125/EC](#)) (also known as the ErP Directive and formerly the EuP Directive) is to reduce the environmental impact of energy-related products and, in particular, to improve energy-efficiency. The directive promotes sustainable development, improves the level of environmental protection, and enhances energy supply security.

To date, regulations based on this directive have been issued or are under preparation for more than 30 equipment groups, among them television sets, household refrigeration appliances, lamps, and electric motors.

Product-group-specific regulations and further information on the directive can be found at www.ekosuunnittelu.info (in Finnish and Swedish).

5.5. Energy labelling

The purpose of the Energy Labelling Directive ([2010/30/EU](#)) is to provide comparable information on the electricity consumption of electrical equipment, thus affecting the end user's choices. The directive stipulates responsibilities of the various operators in the supply chain.



Sami Karisola

Energy labelling currently covers a dozen or so equipment groups, among them television sets and household refrigeration appliances, with several others under planning.

Product-group-specific regulations and further information on the directive can be found at www.energiamerkinta.info (in Finnish and Swedish).

5.6. ATEX – equipment in potentially explosive atmospheres

The ATEX Directive (atmosphères explosibles, [1994/9/EC](#), [2014/34/EU](#)) applies to equipment intended for use in potentially explosive air mixtures at normal air pressure – mixtures of air and gas or of air and dust. The directive applies both to electrical and mechanical equipment, equipment assemblies, independent protection systems, and safety, adjustment, and control equipment and, in certain cases, to individual components.

The directive divides the equipment into two groups on the basis of where the equipment is to be used. Group I equipment is intended for use in underground parts of mines as well as those parts of surface installations of such mines that are likely to become endangered by firedamp and/or combustible dust. Group II equipment is intended for use in other environments that are likely to become endangered by explosive atmospheres. Group I equipment is divided into two equipment categories (M1 and M2) and Group II equipment into three (1, 2, and 3).

5.7. Batteries and accumulators

The purpose of the Battery and Accumulator Directive ([2006/66/EC](#)) is to reduce the environmental impact of batteries and accumulators and to improve their recycling. The directive limits the use of cadmium and mercury, requires certain markings, and defines requirements related to recycling and collection.

The directive is applied to all types of batteries and accumulators. It shall not apply to batteries and accumulators used in equipment connected with the protection of Member States' essential security interests, arms, munitions, and war materiel, and equipment designed to be sent into space.

5.8. WEEE – Waste electrical and electronic equipment

The purpose of the WEEE Directive ([2012/19/EU](#)) is to prevent the creation of waste electrical and electronic equipment and to promote the reuse, recycling, and other utilisation of the waste in order to reduce the amount of waste ending up in final disposal.

Manufacturers and importers are obligated to promote the reuse of electrical and electronic equipment removed from use and to arrange the collection, pre-processing, utilisation, and other waste management of waste electrical and electronic equipment, also bearing the costs incurred.

5.9. Other directives applying to certain electrically powered equipment

It is often the case that several directives and regulations apply to specific electrically powered equipment. The equipment manufacturer and importer are responsible for determining which directives apply to the equipment in question. See below for some examples of directives that may apply to electrical equipment.

- *General Product Safety Directive* ([2001/95/EC](#))
- *Radio Equipment and Telecommunications Terminal Equipment Directive* ([99/5/EC](#))
- *Directives related to medical devices* ([2007/47/EC](#), [93/42/EEC](#) and [98/79/EC](#))
- *Lifts Directive* ([95/16/EC](#))

The requirements are derived from EU directives, regulations and decisions, and national legislation.

6. MARKET SURVEILLANCE

MARKET SURVEILLANCE REFERS to the activities of the market surveillance authorities for purposes of ensuring that the electrical equipment on the market are in compliance with the requirements and are not hazardous to health, safety, or the environment. Market surveillance is of retroactive nature and based on risk assessment. The purpose of market surveillance is to recall from the market any equipment for which the economic operator's self-monitoring has failed.

Described in more detail, market surveillance aims to ensure that

- *the equipment placed on the market (also from outside the EU) is safe and are in compliance with the requirements of the legislation,*
- *the CE marking has been legally affixed to the equipment, and*
- *the EU legislation is consistently and equally enforced (to guarantee an equal operating environment for the economic operators and to reduce fraud).*

The Finnish Safety and Chemicals Agency (Tukes) monitors the electrical safety, electromagnetic compatibility, energy labelling, and efficiency of electrical equipment placed on the market, factors related to equipment and protection systems used in potentially explosive atmospheres, markings of batteries and accumulators, and that the equipment, batteries, and accumulators do not contain prohibited substances. Tukes may co-operate with Customs and examine the equipment's conformity even during the customs declaration stage.

Tukes makes control visits to, for example, stores selling electrical equipment and supplies and the premises of importers and manufacturers. In connection with the control visits, Tukes may obtain equipment whose safety and conformity it wishes to ensure, for inspection and testing purposes. Tukes may also request that an economic operator provides the documentation related to the equipment for inspection.

Whenever necessary, Tukes sends electrical equipment to a testing body for appropriate testing. If the equipment is found not to be in compliance with the requirements and its being on the market must be restricted, the costs incurred in purchasing and testing of the equipment will be charged to the economic operator responsible for the equipment.

The authorities maintain both national and European-level market surveillance registers covering the electrical equipment under their supervision. The surveillance authorities of the EU's Member States act in close co-operation in development of information exchange, market surveillance, and research. The surveillance authorities receive notifications of equipment that have been found to be hazardous or non-compliant in a Member State.

The market surveillance register of Tukes can be found at marek.tukes.fi. The European market surveillance register is accessible at www.icsms.org and the EU's RAPEX system at ec.europa.eu/rapex

6.1. Activities of the market surveillance authority

The activities of the market surveillance authority are targeted at the economic operator that has made the electrical equipment available on the Finnish market. All economic operators may be subject to market surveillance activities. These include administrative decisions restricting sales of the equipment in question.

Market surveillance activities include the following:

- Remark letter of a non-compliant equipment.
- Sales ban: prohibition of new deliveries to distributors and of all retail sales by the recipient of the decision.
- Order to withdraw the product from the market: sales and other supply of the equipment are terminated, and the economic operator is obliged to collect the unsold equipment that are in the possession of distributors.
- Order to recall the product: in addition to taking the measures listed above, the economic operator is obliged to collect already sold products from the end users.
- If the measures described above are deemed insufficient, the equipment in the possession of the economic operator may be ordered to be destroyed.

The economic operator may also be obliged to make a sufficiently visible media announcement of the hazard related to the electrical equipment and the recall of products already sold.

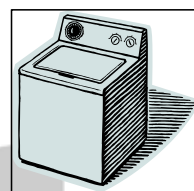
EU Declaration of Conformity

We

Oy Puhtaaxtuli Ab
Pesuraitti 2
33100 TAMPERE
tel. 029 12345000
mail@puhtaaxtuli.fi

declare under our sole responsibility that the following product

Equipment: Pyykinpesukone
Brand name: Putipuhdas
Model/type: puhdas001



is in conformity with the

Low Voltage Directive (LVD) 2006/95/EC,
Electromagnetic Compatibility Directive (EMC) 2004/108/EC,
Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU,
Ecodesign Directive 2009/125/EC and
Commission Regulation (EU) No 1015/2010 regarding ecodesign requirements for household washing machines

and the following harmonised standards and technical specifications have been applied:

LVD: EN 60335-1:2012
EN 60335-2-7:2010
EN 62233:2008

EMC: EN 55014-1:2006 + A1:2009 + A2:2011
EN 55014-2:1997 + A1:2001 + A2:2008
EN 61000-3-2:2006 + A1:2009 + A2:2009
EN 61000-3-3:2008

RoHS: EN 50581:2012

The last two digits of the year in which the CE marking was affixed: 13

At Tampere 3rd of January, 2013

Manufacturer:
Oy Puhtaaxtuli Ab


Ilmari Insinööri, Managing Director

*All the names in the
example are fictitious,
whereas the standards
on the washing
machine are real.*

8. CHECKLISTS

THE LISTS BELOW have been compiled to assist economic operators. The lists state the key obligations associated with making electrical equipment available on the market.

8.1. Manufacturer

- Identify the directives and harmonised standards that apply to the equipment.
- Check the equipment-specific requirements.
- Determine whether the equipment needs conformity assessment by a Notified Body.
- Test the equipment or have it tested, and check whether it is in compliance with the requirements.
- Draw up the required technical documentation, and keep it available.
- Draw up the EU Declaration of Conformity.
- Affix the CE marking.
- Affix the other identifying and safety markings required by the directives.
 - Affix a type, batch, or serial number that allows the identification of the equipment.
 - State your name, registered trade name or trademark, and your address on the equipment.
- Draw up the required instructions and information in Finnish and Swedish, to ensure the safe and purposeful installation, use, maintenance, and decommissioning of the equipment.
- If the equipment is modified, ensure that it remains in compliance with the requirements.
- If the harmonised standard changes, ensure that the equipment remains in compliance with the requirements of the standard (presumption of conformity).

For 10 years after placing on the market

- Is the technical documentation for the equipment available?
- Is the EU Declaration of Conformity for the equipment available?
- Is the information on economic operators to whom the equipment has been supplied available?

8.2. Importer

- Am I definitely in the position of an importer? (see [page 5](#))
- Has the manufacturer drawn up the technical documentation and the EU Declaration of Conformity?
 - NB: If you do not receive any documentation related to the equipment, as required by the directives, from the manufacturer, there is reason to suspect that the equipment does not meet the applicable requirements.
- Have you made sure that the equipment received is consistent with the equipment documentation?
- Are you able to connect the delivered documentation to the equipment with the aid of the identifying information in the documentation and on the equipment?
- Has the manufacturer affixed the CE marking?
- Does the equipment bear the appropriate markings – for example, identifying information?
- Has the manufacturer stated his name, registered trade name or trademark, and address on the equipment?
- Have you stated your name, your registered trade name or trademark, and your address on the equipment?
- Are the required documents, such as operation, installation, and maintenance instructions, along with the other required safety information, in Finnish and Swedish?

For 10 years after placing on the market

- Is the technical documentation for the equipment available?
- Is a copy of the equipment's EU Declaration of Conformity available?
- Is the information on economic operators to whom you have supplied the equipment available?
- Is the information on economic operators who have supplied you with the equipment available?



Sami Karisola

8.3. Distributor

- Am I definitely in the position of a distributor?
(see page 5)
- Have you made sure that the equipment received match the order?
- Does the equipment bear the CE marking?
- Does the equipment bear the appropriate markings – for example, identifying information?
- Have the manufacturer and the importer stated their names, registered trade names or trademarks, and addresses on the equipment?
- Are the required documents, such as operation, installation, and maintenance instructions, along with other required safety information, provided in Finnish and Swedish?

For 10 years after placing on the market

- Is the information on economic operators to whom you have supplied the equipment available?
- Is the information on economic operators who have supplied you with the equipment available?

9. COMMON REASONS FOR NON-COMPLIANCE OF ELECTRICAL EQUIPMENT

SOME EXAMPLES OF REASONS for electrical equipment found to be in non-compliance with the requirements follow:

- Because of a structural change made to the equipment, the equipment no longer meets the requirements set and does not match the equipment for which the EU Declaration of Conformity was originally drawn up.
- The structure of the equipment has not been updated to match an amended harmonised standard (with stricter requirements) that has come into effect.
- The documentation is insufficient (for example, instead of an EU Declaration of Conformity, only a testing institute certificate has been drawn up for the equipment or the documentation is not for the equipment in question).
- The operation instructions are not in Finnish and Swedish.
- The switching mode power supplies do not meet the requirements set.
- Live parts can be touched.
- There is insufficient insulation between live parts and accessible conductive parts.
- Conductors with basic insulation are in contact with accessible conductive parts.
- The equipment's power cord does not withstand cold temperatures.
- There is insufficient insulation in the supply transformer.
- The equipment fails the dielectric strength test.
- The enclosure of the equipment does not meet the fire-resistance requirements.
- The requirements for the reported ingress protection (IP) class of the enclosure are not met, and water can get into the enclosure.
- The equipment's frame fails the impact test.
- The socket outlet or plug is of the wrong type (not approved in Finland).
- The touchable surface of the equipment heats up too much.
- The cross-sectional area of a conductor is too small.
- The cord anchorage of the power cord is deficient.
- The solder joints contain too much lead.
- The equipment does not bear the separate collection symbol.
- The energy label is incorrect, improperly affixed, or missing.
- The equipment has a NiCd accumulator.
- Instead of the CE marking, the equipment bears the very similar-looking China Export marking.



Saara Sivonen

10. TABLE OF OBLIGATIONS OF ECONOMIC OPERATORS

Obligations of economic operators	Manu- facturer	Author- ised repre- sentative	Import- er	Distrib- utor
Makes only compliant equipment available on the market	x	x	x	x
CE marking <ul style="list-style-type: none"> • affixes • checks 	x	(x) x	x	x
EU Declaration of Conformity <ul style="list-style-type: none"> • draws up and retains for ten years • keeps available for ten years • retains a copy for ten years • presents to the authorities upon request 	x x	(x) x x	 x x	 x
Technical documentation <ul style="list-style-type: none"> • draws up and retains for ten years • ensures availability for ten years • presents to the authorities upon request 	x x	 x x	 x x	 x
Carries out the conformity assessment procedure	x			
Ensures that the storage or transport conditions do not jeopardise the equipment's compliance with the requirements	x	(x)	x	x
Keeps a record of non-compliant equipment and, if necessary, notifies the distributors of such equipment	x	(x)	x	
Ensures that the equipment bears a type, batch, or serial number, or some other marking that allows it to be identified	x	(x)	x	x
States his name, the registered trade name or registered trade-mark, and the address at which the economic operator can be contacted	x		x	
Ensures that the equipment bears the manufacturer's and/or importer's name, the registered trade name or registered trade-mark, along with the address at which the manufacturer and/or importer can be contacted		(x)		x
Takes the necessary measures in case of any suspect of non-compliance of the equipment	x	(x)	x	x
Co-operates with the authorities	x	x	x	x
For 10 years after the last equipment has been placed on the market, retains the identifying information of the economic operators he has supplied with equipment.	x	x	x	x
For 10 years after the last equipment has been placed on the market, retains the identifying information of the economic operators who have supplied him with equipment.			x	x

The logo for TUKES, the Finnish Safety and Chemicals Agency, features the word "tukes" in a white, lowercase, rounded sans-serif font. The letters are closely spaced, with the 't' and 'u' having a distinctive shape where the vertical strokes are slightly curved.

Finnish Safety and Chemicals Agency

HELSINKI P.O. Box 66 (Opastinsilta 12 B) FI-00521 Helsinki

TAMPERE Kalevantie 2, FI-33100 Tampere

ROVANIEMI Valtakatu 2, FI-96100 Rovaniemi

TELEPHONE 029 50 52 000 | www.tukes.fi