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# **FREE MOVEMENT OF ELECTRICAL GOODS IN THE EU (LVD, EMC, R&TTE)**

## **DG Enterprise and Industry European Commission**



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# Directives-Electrical Equipment-References

- **Low voltage equipment (OLD: 73/23/EEC, amendment 93/68/EEC) (NEW 2006/95/EC)**
- **Electromagnetic compatibility (OLD: 89/336/EEC, amendments 92/31/EEC and 93/68/EEC) (New: 2004/108/EC)**
- **Radio and telecommunications terminal equipment (1999/5/EC)**



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# policy

- **MANDATORY: ESSENTIAL REQUIREMENTS.**
- **VOLUNTARY: HARMONISED STANDARDS (Provide presumption of conformity)**
- ***Manufacturers must at all times be able to proof that products are compliant and keep technical documentation at the disposal of the authorities (no third party certification)***
- ***These Directives are Total Harmonisation Directives***
- **Government role is to police the market (achieved a very high safety record)**



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## SCOPE OF LVD, EMC AND R&TTE

- **R&TTE: terminal equipment + all radio equipment (harmonised and non-harmonised frequency bands)**
- **EMC: electrical equipment causing EMC disturbance**
- **LVD: all electrical equipment between 50-1000 V (AC) and 75-1500 V (DC)**
- **Exceptions:**
  - **All 3 have exceptions**
  - **Mostly when there is other specific EU legislation in force**



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# Examples of exceptions in LVD

- **Lifts, Electricity meters, explosive atmospheres, equipment for use on ships, aircraft or railways, domestic plugs and sockets**



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# EMC Exceptions

- Products covered by a more specific directive which also contains EMC performance requirements are excluded from the scope of 2004/108/EC. For example [Medical Devices](#), [EMC for automotive applications](#), [measuring instruments](#),
- Most communications apparatus is excluded from the scope of the EMC Directive, either wholly or in part, but instead comes under the scope of the [R&TTE Directive](#)
- Radio equipment used by radio amateurs not commercially available
- Benign equipment



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# RTTE EXCEPTIONS-EXAMPLES

- Radio equipment used by radio amateurs not commercially available
- Equipment falling within the scope of Council Directive 96/98/EC of 20 December 1996 on marine equipment.
- Cabling and wiring.
- Receive only radio equipment intended to be used solely for the reception of sound and TV broadcasting services.
- Products, appliances and components in the field of civil aviation
- apparatus exclusively used for activities concerning public security, defence, State security (including the economic well-being of the State in the case of activities pertaining to State security matters) and the activities of the State in the area of criminal law.





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# Products covered under LVD, EMC or R&TTE (Examples)

- **LVD/EMC**: Household appliances: Refrigerators, microwaves, ovens... Television sets, Printers, Chargers...
- **EMC/not LVD**: equipment less than 50 volts, battery operated eq. such as lasers, detectors...
- **R&TTE**: **MOBILE** phones, Portable computers, Radars, Active antennas...



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# Pre-Market Assessment

- Products placed on the market must fulfil Essential Requirements
- Defined Conformity Assessment Procedures must be followed (Modules)
- The manufacturer must establish the Technical Documentation issue a Declaration of Conformity and affix the CE marking on the product



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## CONFORMITY ASSESSMENT FOR ELECTRICAL EQUIPMENT

- **Use of module A: Internal control of production**
- **Some small deviations:**
  - **R&TTE: obligation to seek opinion of a conformity assessment body when harmonised standards are not used (other than safety and EMC essential requirements)**
  - **R&TTE & EMC: voluntary opinion of conformity assessment body**
- **EU has decided for those sectors:**
  - **NOT necessary to control production**
  - **NOT necessary to recertify products**
  - **At all times manufacturers must ensure that only compliant products reach the market**



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# Safety objectives of the LVD

- Article 2
  - 1. The Member States shall take all appropriate measures to ensure that electrical equipment may be placed on the market only if, having been constructed in accordance with **good engineering practice** in safety matters in force in the Community, it **does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was made.**
  - 2. The principal elements of the safety objectives referred to in paragraph 1 are listed in Annex I.



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## Safety objectives of the LVD

### 1. General conditions

- a) The essential characteristics... shall be **marked** on the equipment
- b) The **manufacturers or brand name or trade mark** should be clearly printed on the electrical equipment
- c) ensure that it can be **safely and properly assembled and connected**.
- d) ... protection against the hazards is assured providing that the equipment is **used in applications for which it was made and is adequately maintained**.

### 2. Protection against *hazards arising from the electrical equipment*

- a) protection against danger of physical injury or other harm which might be caused by **electrical contact** direct or indirect;
- b) that **temperatures, arcs or radiation** which would cause a danger, are not produced;
- c) protection **non-electrical dangers** caused by the electrical equipment which are revealed by experience;
- d) **insulation** must be suitable for foreseeable conditions.

### 3. Protection against *hazards* which may be caused by *external influences*

- a) electrical equipment meets the expected **mechanical requirements**
- b) electrical equipment shall be **resistant to non-mechanical influences** in expected environmental conditions
- c) protection in foreseeable conditions of **overload**.



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# ***REQUIREMENTS OF THE EMC Directive***

## **Article 4**

- The apparatus referred to in Article 2 shall be so constructed that:
  - (a) **EMISSIONS**: the electromagnetic disturbance it generates does not exceed a level allowing radio and telecommunications equipment and other apparatus to operate as intended;
  - (b) **IMMUNITY**: the apparatus has an adequate level of intrinsic immunity to electromagnetic disturbance to enable it to operate as intended.
- The principal protection requirements are set out in Annex III.
- Thus: limit your emissions and be immune to those emissions



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# R&TTE REQUIREMENTS

- Essential requirements of the R&TTE Directive:
  - Electrical Safety and health (as in Low Voltage Directive),
  - ElectroMagnetic Compatibility (as in EMC Directive)
  - Spectrum use (effective use so as to avoid harmful interference)
  - possibility to define some additional public interest requirements:
    - End-to-end interworking
    - No network harm
    - privacy protection
    - avoidance fraud
    - access emergency services
    - Features for the disabled
  - Needs to operate properly in EU or national spectrum

**Examples-Decisions on  
application for:  
maritime equipment  
inland waterways  
avalanche beacons**



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# Presumption of Conformity-Harmonised Standards

- Harmonised European standards elaborated by CEN / CENELEC / ETSI
- Publication of reference in the Official Journal !
- **Voluntary** application by manufacturers: presumption of conformity
- 75% of European Harmonised Standards **IDENTICAL** to **international** standards.
- Under LVD, International standards can give presumption of conformity if European standard does not exist



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# Technical file and DoC

- **Technical file must contain trustworthy evidence of compliance (design, tests done, etc.)**
- **DoC:**
  - **Drawn up and signed by the manufacturer (or his authorised representative) on own responsibility**
  - **The information must include the product, the manufacturer, applicable directives, applied harmonized standards, assurance of conformity and, - if used - the Notified Body**



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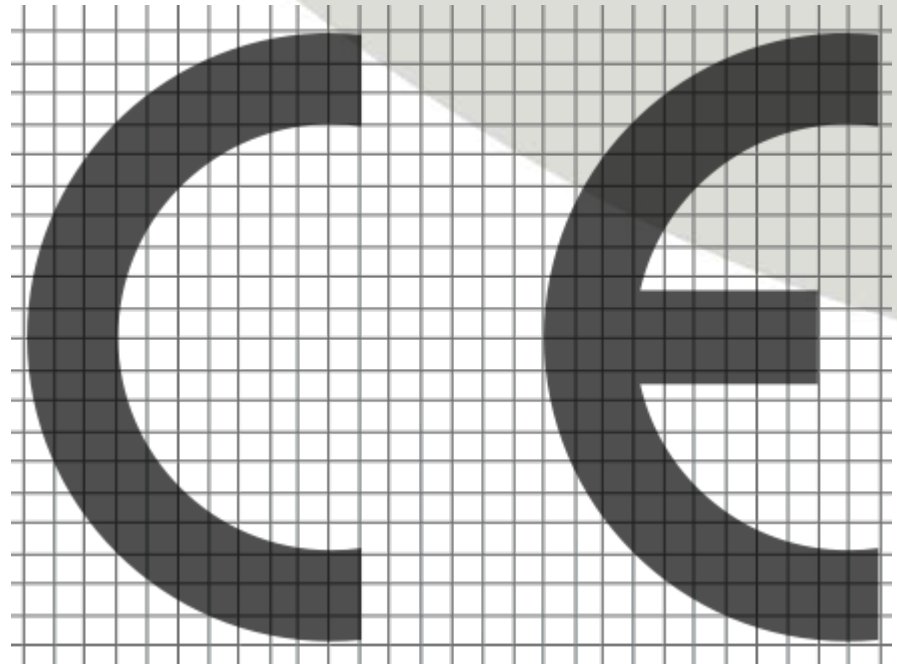


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# CE Marking

- Affixed visibly, legibly and indelibly on the own responsibility by manufacturer or his authorised representative
- Means that the manufacturer **DECLARES** to meet the legal requirements and to be marketable
- It is not a quality mark or a mark of origin



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# Enforcement-Post Market Control

- **National Responsibility (principle of subsidiarity)**
- **Carried out by Government Officials:  
Market Surveillance Authorities**
- **Rapid exchange of information on products posing a serious risk to the health and safety (RAPEX)**



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# APPLICATION IN THIRD STATES

- EEA States
- Switzerland
- Turkey



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# Future

- Alignment with the New Legal Framework (NLF) :
  - reinforcement of market surveillance
  - Clarify legal obligations of economic operators
- LVD/EMC: part of omnibus-pure alignment
- RTTE: separate proposal – alignment and some additional modifications



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# Conclusion

- **LVD/EMC/RTTE are total harmonisation Directives**
- **Manufacturers shall ensure that products are totally compliant (*Technical documentation, Declaration of Conformity, CE Marking*)**
- **These Directives do not require obligatory testing in government recognised laboratories**
- **Government role is to police the market: achieved a very high safety record**



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# Thank you for your attention