

An update on the new EMC Directive and EMC standards

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Overview

- Current status of the new EMC Directive
- Timescales for implementation
- An overview of the differences from 89/336/EEC
- Standards coming into force in 2005
 - Including a look at some current issues with standards

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Update on the EMC Directive

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Current status

- The new EMCD has been agreed
- Publication in OJEU imminent (Dec 2004)
- Entry into force (Jan 2005)
 - 20 days after publication
- UK Regulations published (Jan 2007)
- UK Regulations applied (July 2007)
 - Cannot use new EMCD until then
- Transition period ends (July 2009)
 - Last date to place 89/336/EEC compliant apparatus on the market

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Equipment

- The new EMCD applies to equipment
- Equipment has two subsets
 - Apparatus
 - Fixed installations
- New EMCD covers both
 - Different regulatory requirements apply

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Essential requirements

- Protection requirements apply to all equipment
- Immunity requirement “without unacceptable degradation”
- Requirement for fixed installations
 - Shall be installed
 - Applying good engineering practices
 - Respecting information on intended use of components
 - With a view to meeting the protection requirements
 - Good practices shall be documented
 - Documentation held by responsible person(s) for as long as the installation is in operation

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Apparatus

- Finished appliance or combination thereof
 - Made commercially available as a single functional unit
 - Intended for the end user
 - Liable to generate, or be affected by, electromagnetic disturbance
- Components or sub-assemblies intended for an end user to incorporate into apparatus
 - Liable to generate, or be affected by, electromagnetic disturbance
 - Concept of “direct function” (guidelines) removed
- Mobile installations
 - Combination of apparatus and other devices
 - Intended to be moved and operated in a range of locations

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Harmonised standards

- “Compliance with a harmonised standard means conformity with its provisions and demonstration thereof by the methods the harmonised standard describes or refers to”
 - Now located in the “whereas” clauses
- 89/336/EEC requires only the application of harmonised standards

- Don't panic!

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Competent Bodies

- Renamed Notified Bodies
- Criteria for appointment similar
- Involvement of Notified Bodies will be voluntary
 - In all circumstances
- Manufacturers may self-certify
 - May use the services of a Notified Body if they wish

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Apparatus conformity assessment -1

- Internal production control
 - Manufacturer performs an electromagnetic compatibility assessment
 - Correct application of all relevant harmonised standards is equivalent to this assessment
 - Taking into account
 - All normal intended operating conditions
 - All possible configurations identified by the manufacturer as representative of its intended use
 - Manufacturer draws up technical documentation
 - Provides evidence of conformity of the apparatus with the essential requirements
 - Manufacturer ensures manufacture of all apparatus in accordance with technical documentation

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Apparatus conformity assessment - 2

- Alternative procedure using Notified Body
 - Manufacturer performs assessment and creates technical documentation
 - Manufacturer presents technical documentation to Notified Body
 - Specifying which aspects of the essential requirements are to be assessed
 - Notified Body reviews technical documentation
 - If compliance is confirmed
 - Notified Body issues a statement confirming the compliance of the apparatus

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Technical documentation

- Must enable the conformity of the apparatus with the essential requirements to be assessed
- Must cover design and manufacture of the apparatus
- Content similar to existing TCF
 - General description
 - Evidence of compliance with harmonised standards
 - Where standards not applied in full, description of steps taken to meet the essential requirements, electromagnetic compatibility assessment, results of calculations, examinations, test reports, etc.
- May or may not contain a statement from a Notified Body

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Declaration of conformity

- Expanded requirements
 - Must contain at least the following
 - A reference to the new EMC Directive
 - Identification of the apparatus to which it refers
 - Name and address of manufacturer
 - Name and address of authorised representative (if applicable)
 - Dated reference to specifications under which conformity is declared
 - Date of the declaration
 - Identity and signature of the person empowered to bind the manufacturer or his authorised representative

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Information requirements - 1

- Each apparatus
 - Identified by type, batch, serial number
 - “Any other information allowing for the identification of the apparatus”
 - Accompanied by name and address of manufacturer
 - Name and address of authorised representative or
 - Name and address of person responsible for placing on market
 - Where manufacturer is not established in the Community
 - Information of specific precautions to ensure conformity with protection requirements
 - Assembly, installation, maintenance, use

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Information requirements - 2

- Each apparatus
 - Indication of restriction of use
 - Where compliance not ensured in residential areas
 - Instructions for use to enable use in accordance with the intended purpose

Trade Fairs

- Non-compliant apparatus may be displayed
 - Visible sign clearly indicates that it may not be
 - Placed on the market
 - Put into service
 - Until it complies
- Demonstrations allowed
 - Adequate measures taken to avoid electromagnetic disturbances

Enforcement - 1

- Any decision to
 - Withdraw apparatus from the market
 - Prohibit or restrict placing apparatus on the market
 - Prohibit or restrict putting apparatus into service
 - Restrict free movement of apparatus
- Must
 - State the exact grounds
 - Be notified without delay to the party concerned
 - Advise party of remedies available, and their time limits

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Enforcement - 2

- Manufacturer (or authorised representative or other party)
 - Shall have the opportunity to put forward his point of view in advance of action
 - Unless not possible
 - Urgency required to protect the public interest

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Fixed installations - 1

- Definition
 - A particular combination of several types of apparatus and, where applicable, other devices, which are assembled, installed and intended to be use permanently at a predefined location

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Fixed installations - 2

- Apparatus intended for a given fixed installation (not otherwise commercially available) need not meet
 - Essential requirements
 - Conformity assessment
 - CE marking
- But if this relaxation is followed ...

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Fixed installations - 3

- Apparatus for given fixed installation must be accompanied by documentation that
 - Identifies the fixed installation
 - Identifies the installation's electromagnetic compatibility characteristics
 - Indicates precautions to be taken for incorporation into the fixed installation
 - So as not to compromise its characteristics

Fixed installation enforcement

- Where there are indications of non-compliance
 - Complaints about disturbances being generated
- Authorities may
 - Request evidence of compliance
 - Initiate an assessment, when appropriate
- Where non-compliance is established
 - Authorities may impose appropriate measures to bring the fixed installation into compliance with relevant essential requirements

Update on standards

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dows docs and the OJEU

- ENs have a *dow*
 - Date of withdrawal of superseded standard
- Commission decides dates of applicability of harmonised standards
- Official Journal of the European Union (OJEU)
 - Standards listings have *doc*
 - Date of cessation of presumption of conformity of the superseded standard
 - New version must be used from that date
 - Under the standards route (Article 10.1)

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1 February 2005

- EN 55012:2002 Vehicles, boats and internal combustion engine driven devices - Radio disturbance characteristics - Limits and methods of measurement for the protection of receivers except those installed in the vehicle/boat/device itself or in adjacent vehicles/boats/devices
- Except those within the scope of
 - 95/54/EC Automotive EMC Directive
 - 97/24/EC Two- or three-wheeled motor vehicles
 - 2002/2/EC Wheeled agricultural or forestry tractors

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1 March 2005

- A1:2002 to EN 60947-4-2:2000 Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters - AC semiconductor motor controllers and starters

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1 April 2005

- EN 55020:2002 Sound and television broadcast receivers and associated equipment - Immunity characteristics - Limits and methods of measurement
 - But a delay to 1.12.2005 has been proposed
 - To coincide with the doc for Amendment 1
 - Need for an Interpretation Sheet
 - Dealing with clauses 5.5.2 and Annex I, clause I.7.1
 - Application to digital receivers
 - Affects the standard and its A1

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1 July 2005

- A11:2002 to EN 60034-1:1998 Rotating electrical machines - Part 1: Rating and performance

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1 August 2005

- EN 55022:1998 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement, and A1:2000 to EN 55022:1998
 - But delay to 1.8.2007 has been proposed
 - Problems with 1998 edition (telecom port test)
 - No replacement (EN 55022:2003 failed parallel vote)
 - Common modifications vote will close mid 2005
 - CISPR 22:2003 +A1 +CISPR/1128/CDV +FDIS from CISPR/1185/CDV +common modifications

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31 August 2005

- EN 300 386 V.1.2.1
- EN 300 386 V.1.3.1
- EN 300 386 V.1.3.2
 - Electromagnetic compatibility and radio spectrum matters (ERM); Telecommunication network equipment; Electromagnetic compatibility (EMC) requirements
- Delay?
 - Reference to EN 55022:1998

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1 September 2005

- EN 60947-6-2:2003 Low-voltage switchgear and controlgear - Part 6-2: Multiple function equipment - Control and protective switching devices (or equipment) (CPS)

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1 October 2005

- A2:2002 to EN 55011:1998 Industrial, scientific and medical (ISM) radiofrequency equipment - Radio disturbance characteristics - Limits and methods of measurement
 - Adds definitions for electro-discharge machining equipment, spark erosion, and arc welding equipment, and includes new limits and test methods for such equipment
 - Amends classification of ISM equipment
 - Test site measurements 9 kHz to 1 GHz rearranged and amended

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1 October 2005 (continued)

- A2:2002 to EN 55014-1:2000 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
 - Auxiliary equipment connected at the end of leads other than a mains lead
 - aquastop valves, igniters

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1 October 2005 (continued)

- A2:2002 to EN 55015:2000 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
 - measurement in emergency mode
- EN 60669-2-1:2000 Switches for household and similar fixed electrical installations - Part 2-1: Particular requirements - Electronic switches and Amendment A2:2001 to EN 60669-2-1:2000

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1 October 2005 (continued)

- EN 60945:2002 Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results
 - Frequency range extended from 1 GHz to 2 GHz
- A1:2002 to EN 60947-4-1:2001 Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters

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1 November 2005

- EN 50370-2:2003 Electromagnetic compatibility (EMC) - Product family standard for machine tools - Part 2: Immunity
- Part 1 (emission) has just been approved
 - OJEU listing expected 2005

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1 December 2005

- A1:2003 to EN 55020:2002 Sound and television broadcast receivers and associated equipment - Immunity characteristics - Limits and methods of measurement
 - Normative Annex I test methods and limits for the immunity of broadcast receivers designed for digital signals
 - informative Annex J information on the specification of the wanted signal for different receiver types in Europe, the USA and Japan

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1 December 2005 (continued)

- A2:2003 to EN 55022:1998 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
 - Definition of multifunction equipment, and test procedure
- A2:2003 to EN 55024:1998 Information technology equipment - Immunity characteristics - Limits and methods of measurement
 - Definition of multifunction equipment, and test procedure
 - New Figures added to the normative Annex A (telecommunications terminal equipment)

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Thank you for your attention

Any questions?