

THE MEASURING INSTRUMENTS (ACTIVE ELECTRICAL ENERGY METERS) REGULATIONS 2006

(S.I. 2006 No. 1679)

Notes for Guidance

February 2008

Version 1

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Version	Date	Sections Affected
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2	February 2008	Note 18 (Market Surveillance), 29, 34, 59, 66, Schedule 1 Part 2

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This publication was withdrawn on 24 May 2021.

HEALTH AND SAFETY AT WORK ACT 1974

Nothing in these Notes for Guidance should be construed as overriding, amending or deferring safety regulations and requirements issued by the Health and Safety Executive (in Northern Ireland the Health and Safety Executive for Northern Ireland), in connection with the conduct of persons and the condition and use of machinery and equipment on any premises.

FOREWORD

The Measuring Instruments (Active Electrical Energy Meters) Regulations 2006 – (S.I. 2006 No. 1679) implement European Directive 2004/22/EEC. The Regulations provide for the harmonisation of laws on active electrical energy meters within member States, thereby creating a single market for these instruments.

The Regulations came into force on 30 October 2006 after which date new designs of active electrical energy meters placed on the market must comply with the Measuring Instruments (Active Electrical Energy Meters) 2006 (S.I. 2006 No. 1679). This guidance is intended to assist manufacturers, notified bodies and enforcement bodies in meeting the requirements of the Regulations.

A similar system of approval and verification of instruments has been operating successfully for several years for non-automatic weighing instruments (NAWI's), and manufacturers have benefited enormously from its introduction through savings in cost on both approvals and verification, and through the widening of an easily accessible market. This should also be the case with the new Regulations.

It is anticipated that, as was the case with the NAWI Regulations, there will be a significant input from WELMEC, the European Co-operation in Legal Metrology, to the understanding and interpretation of the Directive. WELMEC has already convened a number of working groups for this purpose. WELMEC is considering questions of application and implementation, particularly in areas of technical uncertainty; and acts as a forum for seeking advice from the European Commission on common issues. Information regarding WELMEC and its decisions can be found at www.welmec.org

These Regulations cover instruments presently regulated in the UK under the Electricity Act 1989 and the Electricity (Northern Ireland) Order 1992. There are fifteen sets of Regulations (including the one mentioned in this document) designed to implement the MID in respect of:

- Electricity meters
- Gas meters
- Non-Prescribed Instruments
- Automatic Gravimetric Filling Instruments
- Beltweighers
- Capacity Serving Measures
- Automatic Catchweighers
- Cold-water Meters
- Automatic Discontinuous Totalisers

- Liquid Fuel and Lubricants
- Liquid Fuel delivered from Road Tankers
- Material Measures of Length
- Automatic Rail-weighbridges
- Exhaust Gas Analysers
- Taximeters

This publication was withdrawn on 24 May 2021.

INTRODUCTION

1. This guidance has been prepared to help explain the Measuring Instruments (Active Electrical Energy Meters) Regulations 2006 (“the Regulations”) that implement Directive 2004/22/EC (“the Directive”) in respect of active electrical energy meters into UK law. The Notes are for the assistance of all stakeholders concerned with observing or applying the controls required by the Regulations relating to active electrical energy meters; that is manufacturers, enforcement authorities and notified bodies designated under the Regulations. Separate guidance has been produced for the other instruments listed above, including non-prescribed instruments.

2. This guidance is not, and does not purport to be, an authoritative interpretation of the law. The law can only be interpreted by the courts. Where examples are given throughout this guidance they represent an opinion and do not form an authoritative interpretation. In case of any doubt, users of this guidance are advised to seek their own independent, including legal, advice. This guidance has been produced to provide clarification but does not cover every provision of the Regulations in detail. This guidance will be amended and revised in response to developing requirements.

3. The Commission (of the European Communities) may also issue guidance from time to time on how the Directive should be interpreted and enforced in the member States (e.g. the guidance on “New Approach” referred to at paragraph 8). When such guidance is issued, attention will be drawn to it by means of appropriate publicity channels (i.e. the NWML website¹).

4. Reference should also be made to the relevant harmonised standards and normative documents plus information provided by WELMEC.

5. At the time of drafting this guidance the bi-lateral agreement between Switzerland and the European Community has not been amended to include the Measuring Instruments Directive. It is expected that this amendment will be made in due course.

¹ www.nwml.gov.uk

BACKGROUND

6. The Directive is a “New Approach” directive and was adopted by the EC Council of Ministers in April 2004. It consists of 27 Articles and 14 annexes plus 10 instrument specific annexes, and provides (subject to the transitional provisions) for the repeal of the earlier old approach Directive 76/891/EEC of 4 November 1976 on the approximation of the laws of the member States relating to electrical energy meters.

7. The Directive is the second "New Approach" directive adopted in respect of measuring instruments. The first was Directive 90/384/EEC (“the NAWI Directive”) which relates to non-automatic weighing instruments and came fully into force in January 2003.

8. The Commission has issued guidance on “New Approach” directives in “Guidance on the implementation of directives based on the New and Global Approach” which can be found on the Europa website².

9. The principles of the “New Approach” are set out in the Guidance as follows:

- Harmonisation is limited to essential requirements.
- Only products fulfilling the essential requirements may be placed on the market and put into service.
- Harmonised standards, the reference numbers of which have been published in the Official Journal and which have been transposed into national standards, are presumed to conform to the corresponding essential requirements.
- Application of harmonised standards or other technical specifications remain voluntary and manufacturers are free to choose any technical solution that provides compliance with the essential requirements.
- Manufacturers may choose between different conformity assessment procedures provided for in the applicable directive.

The references of harmonised standards are published in the C series of the Official Journal of the European Union in the 27 official languages under the heading “Commission communication in the framework of the implementation of Directive”.

10. The "New Approach" to Technical Harmonisation is an important part of the process for achieving the single market. It is intended to remove the technical barriers to trade caused by differing national laws. Directives agreed under the “New Approach” allow for the free movement, (placing on the market and putting into service) in the Community of goods that conform to the essential and other requirements of those Directives. Such products carry the "CE marking", and no member State is allowed to refuse complying products access to its market. In this case all compliant instruments covered by the Directive have free movement throughout the Community.

² <http://ec.europa.eu/enterprise/newapproach/legislation/guide/>

11. The Regulations came into force on 30 October 2006.

12. The Directive extends to all measuring instruments listed in Article 1 of the Directive and applies to all measuring tasks for reasons of public interest, public health, public safety, public order, protection of the environment, protection of consumers, levying of taxes and duties and fair trading. Following a consultation document issued in November 2004 it was decided that implementation should apply to areas with existing regulations only. Consideration about whether to extend the scope of the requirements to previously unregulated instruments or applications may be the subject of further consultation at a later date.

13. The Directive is aimed at regulating instruments used for trade and first placed on the market, or put into use, on or after 30 October 2006. The Regulations refer to such instruments as "relevant instruments". If the meter is a relevant instrument and put into use on or after that date in accordance with the Regulations, it is deemed to be of an approved pattern or construction and installed in an approved manner and certified for the purposes of the Electricity Act 1989. Although the Directive and the Regulations are primarily aimed at regulating at the point of first putting relevant instruments on the market or into use, the Regulations also make provision for the in-service standards that relevant instruments must subsequently meet.

14. The Directive makes provision for active electrical energy meters that were already approved (and marked as such) under existing national rules in any of the member States before that date. Those active electrical energy meters can still be put on the market and put into use until their certificate of approval expires, or until 30 October 2016 for approval certificates of indefinite validity. These provisions are implemented by the Regulations.

15. In Great Britain and Northern Ireland, there were already in place national rules about the standards of active electrical energy meters in-service before the Directive came into force.

The Directive does not address standards for active electrical energy meters in-service before 30 October 2006 and the pre-existing rules continue to apply to them. These meters will have been certified under the Electricity Act 1989 and they can remain in-service so long as they meet the relevant national in-service accuracy tests set out in regulation 7 of the Meters (Certification) Regulations 1998 (S.I. 1998 No. 1566).

Meters which are relevant instruments, are put into use in accordance with the Regulations, and are deemed certified, must continue to meet the in-service criteria set out at paragraph 15 of Schedule 1 to the Regulations.

16. The Directive provides an "optionality clause". This means that member States may prescribe the category and range of applications for measuring instruments they wish to control. This will lead to a variation between member States which will mean that for the same use, instruments in some member States will be regulated, whereas in other member States they will not. However where member States choose to regulate, the instruments must be

compliant with the requirements of the Directive, and where they choose not to regulate the instruments there must be no metrological controls.

17. For instruments not controlled in the UK, The Measuring Instruments (Non-Prescribed Instruments) Regulations 2006 (S.I. 2006 No. 1270) has been made which will permit UK manufacturers of such non-regulated instruments to demonstrate conformity with the Directive for those instruments and so meet the legislative requirements for placing them on the market in other member States.

18. The following terms are important to an understanding of the Regulations and the Directive:

Manufacturer - means a person responsible for the conformity of an active electrical energy meter with the essential requirements with a view to either placing it on the market under his own name or putting it into use for his own purposes, or both. This means that a manufacturer placing an active electrical energy meter on the market accepts responsibility for the conformity of any components or sub-systems, even though they may not be manufactured by him.

Authorised representative - the manufacturer may appoint any natural or legal person to act on his behalf as an authorised representative. The authorised representative must be established in a member State. The authorised representative must be authorised by the manufacturer, in writing, to act on his behalf, and he may be addressed by the UK authorities instead of the manufacturer with regard to the latter's obligations under the Regulations. The manufacturer remains generally responsible for actions carried out by an authorised representative on his behalf.

Importer/person responsible for placing on the market - for the purposes of the Directive, is any natural or legal person established in the Community who places a product from a third country on the Community market. The importer must ensure that he is able to provide the market surveillance authority with the necessary information regarding the product, where the manufacturer is not established in the Community, and has no authorised representative in the Community. In line with Schedule 1 of the Interpretation Act 1978, a person includes a body of persons corporate or unincorporated in that it applies to both a natural or a legal person.

Notified Body - this means the body that assesses whether a relevant instrument conforms to the essential and other requirements. A notified body is defined in regulation 2(1) as:

- (a) the Secretary of State; or
- (b) a United Kingdom notified body; and
- (c) for the purposes of regulations 4(1)(c), 15(6) and 17(1)(b), a person designated by another member State,

who has been notified to the Commission and the other member States pursuant to Article 11(1) of the Directive.

Installer - the installer of a product, which is already placed on the market, should take necessary measures to ensure that it still complies with the essential requirements at the moment of first use within the Community and that the relevant instrument is installed in accordance with Schedule 1, Part 2 of the Regulations.

Market Surveillance – Market surveillance is work undertaken to prevent non-compliant relevant instruments from entering the market. It should not duplicate the functions of the notified body but ensure that the notified body has done its job correctly. Article 18 of the Directive requires competent authorities in member States to carry out market surveillance as to compliance with the Directive and to exchange that information with each other and the Commission. GEMA and NIAER are the competent authorities although, in practice, NWML has an informal agreement to do this work – see also regulation 25.

National standards and normative documents – Relevant national standards and normative documents for this purpose will be published by the Secretary of State in the UK, or by the competent authority in another member State in accordance with regulation 2. Further information on harmonised standards and normative documents is available in Articles 13 and 16 of the Directive and also on the Europa website³.

This publication was withdrawn on 24 May 2021.

³ <http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist/measurin.html>

PART 1 - PRELIMINARY

19. The Regulations have been made using powers under the European Communities Act 1972. The Regulations extend to Northern Ireland.

CITATION AND COMMENCEMENT

Regulation 1

20. This gives the title of the Regulations and states the coming into force date of 30 October 2006.

INTERPRETATION

Regulation 2

21. This gives definitions of many of the terms used in the Regulations. Other terms may be defined where they appear, or by reference to a definition provided elsewhere. For example, notified body criterion is defined by Schedule 2, Part 1. Definitions of terms which are only used once have been excluded.

RELEVANT INSTRUMENT

Regulation 3

22. This sets out the active electrical energy meters which are covered by the Regulations and refers to them as relevant instruments.

Regulation 3(1)

23. A relevant instrument is an active electrical energy meter which is in use for trade.

Regulation 3(2) and 3(3)

24. The Regulations do not apply to instruments of a pattern approved before the 30 October 2006, under existing national regulations in either Great Britain and Northern Ireland, and which are put into use before 30 October 2016. Minor modifications to existing UK national approvals are also permitted up until this date although major modifications to existing designs will need to be conformity assessed against the relevant conformity assessment procedures in the Directive.

25. NWML can provide guidance to manufacturers on modifications permitted to UK national approvals from 30 October 2006 to 30 October 2016. Each application will be considered on a case by case basis, although the following list covers the scope of modifications that would be considered:

- Identical component design and material but supplied by alternative suppliers;

- Identical component design but alternative material and/or supplier;
- Changes to rated conditions where design is identical;
- Minor design changes to non-metrological components;
- Identical hardware but changes to non-metrological software – proven not to impact on metrological aspects; and
- Identical hardware but minor changes to metrological software to enhance measurement performance.

If a modification is approved, an appropriate test schedule will be agreed between NWML and the manufacturer.

Regulation 3(4)

26. The Regulations also do not apply to instruments of a pattern approved before 30 October 2006, in other member States of the EU and which bear the appropriate marking verifying this. There is nothing to prevent such certificates of approval being modified at any time up until the date of expiry, which means these Regulations do not apply for as long as an existing certificate or renewal of an existing certificate remains in force.

Regulation 3(5)

27. The Directive applies only to meters used for residential, commercial and/or light industrial use although these terms are not quantified. Following consultation it was decided to maintain the existing regulatory scope of “half hourly” metering by applying the Regulations only to active electrical energy meters where the maximum anticipated load does not exceed 100 KWh/hr. This constitutes usage equivalent to the heavy industrial sector, and meters above this limit are subject to different requirements under the Balancing and Settlement Code.

Regulation 3(6)

28. Instruments not in conformity with the Regulations may be exhibited if they are clearly marked to indicate that they may not be used for trade unless they have been made compliant by the manufacturer.

This publication was withdrawn on 24 May 2021.

PART 2 - PLACING ON THE MARKET AND PUTTING INTO USE

REQUIREMENTS FOR PLACING ON THE MARKET AND PUTTING INTO USE

Regulation 4(1)

29. This regulation makes it an offence to first place on the market or put into use an active electrical energy meter to which the Regulations apply unless it:

- (a) meets the essential requirements;
- (b) has demonstrated conformity with these essential requirements; and
- (c) carries the CE marking, M marking and identification number of the notified body which carried out the conformity assessment, as detailed in Schedule 4.

The instrument must be put into use in accordance with the requirements of Schedule 1, Part 2 of the Regulations.

30. The terms “placing on the market” and “putting into use” are defined in the Regulations and originate from the Directive. The requirements of regulation 4(1) apply only to when instruments are first placed on the market or put into use.

31. In regulation 4(1)(b) “its” should be read as referring to “the instruments”.

COMPLIANCE WITH THE ESSENTIAL REQUIREMENTS

Regulation 5(1)

32. Manufacturers can use more than one method for demonstrating compliance with the essential requirements including:

- (a) using any technical solution that complies with the essential requirements;
- (b) correctly applying solutions set out in the relevant national standard; or
correctly applying solutions set out in the relevant normative document, and selecting and following one of the conformity assessment procedures referred to in regulation 6.

An overview of the references of harmonised standards can be found on the Europa website⁴. Although this is updated regularly, it may not be complete and only publication in the Official Journal of the European Union, C Series, has legal effect.

⁴ <http://ec.europa.eu/enterprise/newapproach/standardization/harmstds/reflist.html>

Regulation 5(2)

33. Instruments which conform fully to relevant national standards or relevant normative documents will be presumed to conform fully with the essential requirements.

Regulation 5(3)

34. Instruments which conform in part to relevant national standards or relevant normative documents will be presumed to conform in part with the essential requirements. An instrument can comply in part with relevant national standards, in part with relevant normative documents and/or other technical solutions can be applied to achieve full compliance. Other technical solutions could include the use of European standards which are not harmonised standards and international standards, such as those IEC Recommendations which are not normative documents.

CONFORMITY ASSESSMENT PROCEDURES

Regulation 6(1) and (3)

35. The different conformity assessment procedures available to manufacturers are set out as modules in the annexes of the Directive. These are numbered A to H1. Manufacturers, or authorised persons, are free to choose which of the applicable modules from the Directive they wish to use. The options available to manufacturers for active electrical energy meters are as follows:

- B and F – Type Examination plus Declaration of Conformity to type based on product verification.
- B and D – Type Examination plus Declaration of Conformity to type based on quality assurance of the production process.
- H1 – Declaration of Conformity based on full quality assurance plus design examination.

The procedures that manufacturers must follow in order to meet the requirements of the individual modules are considered in Schedule 1 to these guidance notes.

For further information on conformity assessment procedures and other aspects regarding the interpretation of the Directive, reference should be made to “Guide to the implementation of directives based on the New Approach and the Global Approach”⁵.

For Module F the recommended tests to be carried out for initial verification should be identified together with the standards necessary to ensure traceability of measurement. This is particularly important in the absence of harmonised standards and normative documents.

⁵ <http://europa.eu.int/comm/enterprise/newapproach/legislation/guide/index.htm>

Regulation 6(2)

36. Schedule 3 of the Regulations outlines the nature of the technical documentation that a manufacturer or his authorised representative must maintain. This information must be provided to a notified body to enable it to carry out the relevant assessment. This documentation must be provided in writing, in English or another language acceptable to the notified body in accordance with paragraph 10(1)(a) and (b) of Part 2 of Schedule 2.

DESIGNATION OF UNITED KINGDOM NOTIFIED BODIES

Regulation 7(1)

37. Under Article 11 of the Directive, member States must designate “notified bodies” to carry out the conformity assessments. The criteria for designation of these bodies in accordance with Article 12 are included in Schedule 2, Part 1 of the Regulations.

38. Bodies in Great Britain may apply to the Gas and Electricity Markets Authority (GEMA) and bodies in Northern Ireland may apply to the Northern Ireland Authority for Energy Regulation (NIAER) to be designated as a UK notified body. Currently GEMA designates notified bodies on behalf of NIAER. It would appear unlikely that an individual person could be designated. Applicants must meet the notified body criteria specified in the Regulations and, where the designation is in respect of a particular description of an active electrical energy meter, the designating authority must be satisfied that the applicant meets the criteria in respect of that description of the instrument.

Regulation 7(3) and (6)

39. A body that meets the criteria laid down in a national standard applicable to designating notified bodies, will be presumed to meet corresponding parts of the notified body criteria. For example, a body that operates an approved quality system under a relevant harmonised standard such as EN17025/17020 and EN45011/45012 would be presumed to meet the notified bodies’ criteria only to the extent that the standard corresponds with the notified bodies’ criteria of the Directive.

40. The application form for persons applying to be designated as a notified body under Article 11 and bodies wishing to extend their current status to include conformity assessment tasks in the Directive can be found on the NWML website⁶

Regulation 7(4)

41. Designations under the Regulations must be in writing which may be either in electronic or hard copy format. Designations may be made subject to conditions.

⁶ <http://www.nwml.gov.uk/Docs/Legislation/MID/notified%20body%20application%20form%20sept%2005.pdf>

Regulation 7(5)

42. GEMA may consider all relevant criteria to ensure that the essential requirements have been fully met prior to issuing a designation.

FUNCTIONS OF NOTIFIED BODIES

43. The functions of a notified body are set out in Schedule 2, Part 2 of the Regulations and in Schedule 2 of these guidance notes.

PROVISIONS SUPPLEMENTAL TO REGULATION 7

44. These provisions deal with the publication of lists of notified bodies and the inspection of notified bodies.

Regulation 9(1)

45. GEMA (or, as the case may be, NIAER) will publish a list of UK notified bodies indicating the description of the active electrical energy meters in respect of which each is designated and any conditions to which the designation is subject. These details will be available on the NWML⁷ website.

46. Note that Article 11 of the Directive also requires member States to give the European Commission and other member States details of the designated bodies authorised under the Directive.

47. The European Commission allocates an identification number to each notified body and publishes them along with details of the instruments for which they have been authorised. This is available on the NANDO website⁸.

- For MID click on:

http://ec.europa.eu/enterprise/newapproach/nando/index.cfm?fuseaction=directive_annex&dir_id=125641&type_dir=NO%20CPD

- Search by annex for the relevant declaration of conformity and then by instrument type.
- Search by country and then by notified body number to give the name and, for MID, the instruments for which it has been notified and the applicable procedures/annexes.
- This site will enable you to find the European notified bodies together with details of third-country bodies designated under formal agreements.

⁷ <http://www.nwml.gov.uk/InstrumentSearch.aspx>

⁸ <http://ec.europa.eu/enterprise/newapproach/nando/>

Regulation 9(2)

48. GEMA (or, as the case may be, NIAER) will periodically carry out an inspection of UK notified bodies. The purpose of that inspection shall be to assess whether the notified body meets the notified body criteria and complies with any designation to which it is subject and complies with these Regulations. It is important to remember that, although such an inspection may result in a visit to a manufacturer, it is the notified body that is being inspected, not the manufacturer.

49. The first inspection will be carried out no earlier than two years from the date of designation unless circumstances make it expedient to do so. Thereafter subsequent inspections will be carried out no sooner than two years from the last inspection unless circumstances make it expedient to do so.

VARIATION AND TERMINATION OF DESIGNATIONS

Regulation 10

50. Provides for GEMA (or, as the case may be, NIAER) to vary the designation, either at the request of the notified body or where it is necessary or expedient to do so. Provides for GEMA, (or, as the case may be, NIAER) to terminate the designation on certain grounds, specifies the manner in which such a termination shall be notified and the subsequent actions that GEMA (or, as the case may be, NIAER) may take.

FEES

Regulation 11(1)

51. Permits notified bodies to impose charges when acting as a notified body. Notified bodies are permitted to charge fees in connection with, or incidental to, carrying out conformity assessment procedures.

Regulation 11(2)

52. The fees specified above shall not exceed the costs incurred, or to be incurred, by the notified body plus a reasonable amount of profit.

Regulation 11(3)

53. Provides for the power to request payment of the fees, or a reasonable estimate of these, in advance.

Regulation 11(4)

54. Provides that, in cases where fees charged after work is completed or payment of fees has been requested in writing have not been paid to the notified body within a period of 28 days, the notified body may give 14 days notice in writing that the certificates or notification appropriate to the conformity assessment will be suspended until the fees have been paid.

Regulation 11(5)

55. Enables GEMA (or, as the case may be, NIAER) to charge fees to recover the full costs incurred in relation to the designation of notified bodies under regulation 7 or the inspection of a notified body referred to in regulation 9.

MARKING AND IDENTIFICATION REQUIREMENTS

Regulation 12

56. This requires markings to be affixed to the instrument to show that they are compliant with the essential requirements. Schedule 4 describes the CE marking, supplementary metrology (M) marking and the identification number of the notified body concerned with the conformity assessment, which must be affixed to each instrument so as to be visible and legible. The M marking denotes that the instrument is regulated by one of the metrology directives. Other markings are permitted by regulation 12(2) but they must not reduce the visibility and legibility of the prescribed marks.

57. For the purpose of the Directive the M marking must be accompanied by the last two digits of the year in which it is affixed. See drawings in Schedule 4 to this guidance.

58. It should also be remembered that the application of the CE and the M marking represent compliance with the essential requirements in Schedule 1 of the Regulations when the instrument was placed on the market or put into use. This will include selecting and following one of the conformity assessment routes. Any contravention that falls outside of these definitions is not caught by the compliance notice procedure detailed in regulation 16.

CONFORMITY WITH OTHER DIRECTIVES

Regulation 13

59. Where an active electrical energy meter which is a relevant instrument falls within the scope of other directives which provide for the affixing of the CE marking, the CE marking affixed to the active electrical energy meter shall, in addition to conformity with the Directive, indicate conformity with those other directives.

PART 3 – ENFORCEMENT

ENFORCEMENT AUTHORITY

Regulation 14

60. In England, Scotland and Wales these Regulations will be enforced by GEMA. In Northern Ireland the Regulations will be enforced by GEMA on behalf of NIAER (or a third party designated to act on GEMA's behalf) following arrangements made under regulation 25.

UNAUTHORISED APPLICATION OF AUTHORISED MARKS

Regulation 15

61. It is an offence to:

- affix an authorised mark to a relevant instrument except in accordance with these Regulations;
- alter or deface an authorised mark affixed to the instrument;
- remove an authorised marking affixed to the instrument;
- add further markings which are likely to confuse people about the meaning or form of the authorised mark.

unless it happens in the course of a repair by, or is occasioned by, a meter examiner in the course of his duties.

62. It is also an offence to place on the market or put into use a relevant instrument bearing an authorised mark in the knowledge that the authorised mark has been wrongly affixed, altered, defaced; or that the instrument bears a marking likely to mislead people as to the authorised mark; or that an authorised mark has been removed.

COMPLIANCE NOTICE PROCEDURES

Regulation 16

63. In cases where the enforcement authority has established that the CE marking and/or M marking have been affixed unduly when the instrument was placed on the market or put in to use, it may serve a compliance notice on the manufacturer or his authorised representative requiring them to end the infringement. The term "affixed unduly" is defined in regulation 16(3) by reference to regulation 12(3) and Schedule 4, which sets out what the markings should look like and where on an instrument they should be affixed. Essentially, the term should be taken to mean that the markings have been incorrectly or inappropriately applied,

IMMEDIATE ENFORCEMENT ACTION

Regulation 17

64. The enforcement authority (GEMA or NIAER) has powers to take immediate action where it has reasonable grounds to believe that:

- (a) the requirements of a compliance notice procedure have not been complied with; or
- (b) an active electrical energy meter which has been placed on the market or put into use does not bear the CE marking, the M marking or the identification number of the notified body that carried out the conformity assessment procedure for that instrument; or
- (c) an active electrical energy meter bearing the CE marking and the M marking does not meet all of the essential requirements when placed on the market, or properly installed and put into use in accordance with the manufacturers instructions.

65. The enforcement action would start with the enforcement authority serving an enforcement notice on the manufacturer, setting out the ways in which the instrument fails to comply with the requirements of the Regulations and specifying the time limit for compliance.

Note that the enforcement powers under the Regulations will be used in relation to first placing on the market and putting into use. Once a meter is installed, existing enforcement powers under the Electricity Act will be used when necessary, for example, to ensure that meters are removed from service if they do not conform to the requirements of existing legislation or the Regulations (as the case may be).

POWERS OF ENTRY AND INSPECTION

Regulation 18

66. Provides powers, under certain specified conditions, for an enforcement officer to enter premises and inspect, test and remove for testing an active electrical energy meter which has not yet been put into use. (As mentioned above, Electricity Act enforcement powers will be used if necessary in relation to meters already in-service.) An enforcement officer will usually be a GEMA (or NIAER) employee or designated by GEMA (or NIAER). While an enforcement officer may seize an instrument if it is found not to comply with the Regulations, it is the enforcement authority that has the power to issue a compliance notice (regulation 16) or take immediate enforcement action (regulation 17) if the requirements of these Regulations are not met.

Regulation 18(6)

67. Makes it an offence for an enforcement officer or other person to reveal a secret manufacturing process or trade secret unless the disclosure was made in the performance of his duty.

OBSTRUCTION OF ENFORCEMENT OFFICER

Regulation 19

68. It is an offence to obstruct an enforcement officer or to fail to give assistance or information requested. It is also an offence knowingly to give false information.

REVIEW OF DECISIONS OF ENFORCEMENT AUTHORITY

Regulation 20

69. Where a person is aggrieved by a compliance notice or an enforcement notice served by an enforcement authority other than GEMA (or NIAER) he has the right within 21 days to make representations to GEMA (or NIAER) who may hold an inquiry or appoint an assessor to assist with its review.

70. GEMA (or NIAER) shall give its decision within a reasonable period of time and inform both parties.

PENALTIES FOR OFFENCES

Regulation 21

71. A person guilty of an offence under these Regulations is liable to a fine up to a maximum of £5,000 (though that limit may be revised in future).

DEFENCE OF DUE DILIGENCE

Regulation 22(1)

72. The Regulations offer defences of due diligence and the act or default of another person.

LIABILITY OF PERSONS OTHER THAN THE PRINCIPAL OFFENDER

Regulation 23(1)

73. Where an offence is due to the act or default of another person that person will be guilty of an offence irrespective of whether proceedings have been taken against the first person.

PART 4 - MISCELLANEOUS AND SUPPLEMENTAL

ADAPTATIONS FOR NORTHERN IRELAND

Regulation 24

74. The Regulations apply to Northern Ireland, though Schedule 5 adapts the wording of some of the regulations to align them with the law applicable there. This means that these Regulations apply the requirements relating to first placing on the market or putting into use to the whole of the UK. However, the in-service provisions only relate to Great Britain, and Northern Ireland will make its own similar in-service provisions for active electrical energy meters.

GEMA'S POWER TO ACT ON BEHALF OF NORTHERN IRELAND REGULATOR

Regulation 25

75. Provides for GEMA to act on behalf of NIAER for some or all of the functions conferred on NIAER by these Regulations. There is currently an arrangement in place for GEMA to carry out the following functions on behalf of NIAER: to designate notified bodies, and notify the EU Commission of the appointments; to carry out market surveillance as required by the Directive; and to enforce the Regulations in Northern Ireland.

SERVICE OF DOCUMENTS

Regulation 26

76. Specifies how documents required or authorised by these Regulations may be served on a person, body corporate or partnership.

SAVINGS FOR CERTAIN PRIVILEGES

Regulation 27(1)

77. Specifies certain circumstances under which these Regulations do not require a person to produce any documents or records.

Regulation 27(2)

78. A person may refuse to answer any question or give any information if to do so would incriminate them.

CONSEQUENTIAL MODIFICATIONS OF ENACTMENTS: GREAT BRITAIN

Regulation 28.

79. The combined effect of regulation 28(1)-(5) is to modify the effect of Schedule 7 to the Electricity Act 1989 (“Schedule 7”) on active electrical energy meters which are relevant instruments. Such meters are deemed to be of an approved pattern or construction and installed in an approved manner if they are put into use in accordance with these Regulations.

Regulation 28(1)

80. Specifies that Schedule 7 (use, etc of electricity meters) applies to active electrical energy meters which are relevant instruments under these Regulations subject to regulations 28(2) to (4).

Regulation 28(2)

81. Such meters are deemed to be of an approved pattern or construction and installed in an approved manner if they are put into use in accordance with these Regulations. Such meters are also deemed to be certified under paragraph 5 of Schedule 7. This means that no offence is committed under paragraph 3 to Schedule 7.

References to the “prescribed margins of error” in certain paragraphs of Schedule 7 refer to the maximum permissible error set out in paragraph 15 of Schedule 1 to these Regulations.

Regulation 28(3)

82. Disregards the provisions in Schedule 7 that only meter examiners can certify electricity meters, determine whether they are of an approved pattern or construction and, if installed for use, whether they are installed in an approved manner. These provisions do not need to apply to relevant instruments that comply with these Regulations because they are deemed to be certified, of an approved pattern or construction and, if installed, to be installed in an approved manner

Regulation 28(4)

83. Where the error of measurement of an active electrical energy meter exceeds that set out in paragraph 15 of Schedule 1 to these Regulations such meters are not deemed to be certified under paragraph 5 of Schedule 7.

Regulation 28(5)

84. The provisions relating to the duration of certification and approved pattern or construction and approved manner of installation requirements of S.I. 1998 No. 1566 and S.I. 1998 No. 1565 do not apply to active electrical energy meters which are relevant instruments put in to use in accordance with these Regulations.

CONSEQUENTIAL MODIFICATIONS OF ENACTMENTS: NORTHERN IRELAND

Regulation 29

85. Applies regulation 28 to the equivalent legislation in Northern Ireland.

SCHEDULE 1

PART 1 – ESSENTIAL REQUIREMENTS

1. There are two elements to the essential requirements. Annex 1 of the Directive outlines the essential requirements with which all measuring instruments must comply, while Annex MI-003 covers the instrument-specific requirements relating to active electrical energy meters. These requirements will be assessed during the conformity assessment procedure.

This Schedule details the essential requirements from the Directive as applicable to active electrical energy meters. The two sets of essential requirements (i.e. general and specific) have been combined to provide a more consistent presentation of the requirements, and detail which is not particularly relevant to active electrical energy meters has been excluded.

The preamble to Annex 1 of the Directive, see below, should be noted as it sets out the underlying principle behind the essential requirements:

“A measuring instrument shall provide a high level of metrological protection in order that any party affected can have confidence in the result of measurement, and shall be designed and manufactured to a high level of quality in respect of the measurement technology and security of the measurement data.”

The essential requirements of the Directive are somewhat less specific than previous controls under UK national provision. Under the Regulations the method of test and the standards to be used for testing will be determined by the application of the relevant harmonised standard or normative document, where available, or by the notified body appropriate for the particular conformity assessment module. Notified bodies responsible for quality system certification will be looking to ensure that appropriate equipment, traceable to national standards, is used by trained personnel to carry out testing on active electrical energy meters.

2. DEFINITIONS

Reproduces definitions from the essential requirements of the Directive (Annex 1) and the instrument specific annex (MI-003).

3. ALLOWABLE ERRORS

Under rated operating conditions and in the absence of disturbance, the error of measurement shall not exceed the maximum permissible error given in the instrument specific annex.

The maximum permissible errors for active electrical energy meters for first placing on the market are detailed in Schedule 1, paragraph 15 of the Regulations. Once the meter is installed and used for the first time the existing in-service provisions apply⁹.

The manufacturer is responsible for specifying the climatic, mechanical and electromagnetic environments in which the instrument will meet the essential requirements. Paragraph 16 requires an electromagnetic environment E2 for active electrical energy meters. Note that in Table 1 the upper and lower temperature limits are not paired together (i.e. manufacturers can choose from any of the four upper temperatures and pair it with any of the four lower temperature limits).

The tests to establish whether the instrument meets these requirements are normally carried out by the notified body or approved test house/laboratory.

4. REPRODUCIBILITY

Refer to WELMEC guide 8.1 (Issue 1)¹⁰.

The Regulations require the difference between measurement results to be small when compared with the MPE although “small” is not defined. WELMEC will consider this problem and give its opinion in due course.

5. REPEATABILITY

Refer to WELMEC guide 8.1 (Issue 1)¹⁰.

The Regulations require the difference between measurement results to be small when compared with the MPE although “small” is not defined. WELMEC will consider this problem and give its opinion in due course.

6. DISCRIMINATION AND SENSITIVITY

Refer to WELMEC guide 8.1 (Issue 1)¹⁰.

The Directive gives no explicit guidance on discrimination and sensitivity thresholds except that they should be sufficiently low for the intended measurement task. Notified bodies may therefore apply the criteria they think appropriate.

⁹ Electricity Act, 1989 Schedule 7. See also the Meters (Approval of Pattern or Construction and Manner of Installation) Regulations, 1998 (S.I. 1998 No. 1565), and the Meters (Certification) Regulations, 1998 (S.I. 1998 No.1566).

¹⁰ <http://www.welmecc.org/publications/8-1.asp>

7. DURABILITY

Requires an active electrical energy meter to be designed to maintain an adequate stability of its metrological characteristics. WELMEC Working Group 11 has provided guidance on the period of time estimated by the manufacturer¹¹ and this will be published shortly.

8. RELIABILITY

Refer to WELMEC guide 8.1 (Issue 1)¹².

When a defect that would lead to an incorrect measurement result does occur the presence of this must be obvious (e.g. the instrument may inhibit operation or an error flag should be shown).

9. PROTECTION AGAINST CORRUPTION

9.1 Requires the interfaces of active electrical energy meters (e.g. serial ports, USB ports, modem ports, etc) to be secured so that the metrological characteristics of the instrument shall not be influenced in any inadmissible way.

9.2 Hardware components critical for metrological characteristics must be designed so that they can be secured in such a way that will provide for evidence of an intervention. Manufacturers are free to specify the type of securing device (e.g. a lead seal crimped over a twisted wire, a tamperproof sticker, a snap fit enclosure, etc). The suitability of the sealing device will be assessed by the notified body during conformity assessment and a list of items sealed, together with the sealing method used, should be given in the type approval certificate.

9.3 Software is now an essential part of most active electrical energy meters. Software critical for metrological characteristics must be identified and be similarly secured (e.g. software seals must be broken before the software can be changed).

9.4 The identification of the metrologically-critical software of an active electrical energy meter is essential to ascertain if it conforms to an approved version. Software identification should be easily provided and this will usually be in the form of a software version number that can be seen on demand.

9.5 Evidence of software intervention shall be available for a reasonable period of time. This means that any change to the software that is recorded by the instrument must be retained for a period long enough so it is available in the event of a dispute.

¹¹ WELMEC WG11 Guideline 9/2-3

¹² <http://www.welmec.org/publications/8-1.asp>

9.6 Data and software that is critical for measurement characteristics should be adequately protected against accidental or intentional corruption. This means that this information must be robustly stored and transmitted so that it is not corrupted by deliberate or accidental means.

9.7 The display of the total quantity supplied shall not be able to be reset during use.

WELMEC Working Group 7 has produced guidance which covers the MID software requirements in detail¹³. These Guides propose acceptable solutions although manufacturers are not obliged to follow the recommendations in these guides and they can propose their own solutions provided they meet the requirements of the Regulations.

10. INFORMATION TO BE BORNE BY AND TO ACCOMPANY THE INSTRUMENT

10.1 Details the inscriptions required on an active electrical energy meter in addition to those described in regulation 12. Paragraph 10(1)(b) requires an active electrical energy meter to be inscribed with information in respect of its accuracy – see also Schedule 1, paragraph 13 of the Regulations.

10.2 Details the operational information required to accompany an active electrical energy meter. This information is not required if the simplicity of the instrument makes this unnecessary, although this clause will generally not be applicable to active electrical energy meters.

10.3 Active electrical energy meters do not necessarily require individual instruction manuals.

11. INDICATION OF RESULT

Requires the active electrical energy meter to be fitted with a metrologically controlled display accessible without tools to the consumer. This requirement has already been discussed at WELMEC following the introduction of customer display units on “smart meters”. The current view is that the metrologically controlled display should be an integral part of the meter, while the customer display unit is a supplementary indicator that may be remote.

12. CONFORMITY EVALUATION

Active electrical energy meters shall be designed to allow their conformity with the appropriate requirements of the Regulations to be evaluated with relative ease.

¹³ WELMEC WG7 Guides 7.1 and 7.2 available from:

<http://www.welmec.org/publications/7-1.pdf>

<http://www.welmec.org/publications/7-2en.pdf>

13. ACCURACY

Specifies three class indices for active electrical energy meters – A, B and C. The manufacturer is required to specify the appropriate class index on the instrument.

14. RATED OPERATING CONDITIONS

Requires the manufacturer to specify various rated operating conditions of the active electrical energy meter; as shown:

- (a) Specified voltage reference frequency, specified reference voltage and current values. The current values must satisfy the conditions given in Table 2.
- (b) The voltage, frequency and power factor ranges within which the meter satisfies the MPE requirements given in Table 3.
- (c) The voltage and frequency ranges of the active electrical energy meter as given in the text.
- (d) The power factor range of the active electrical energy meter as given in the text.

15. MAXIMUM PERMISSIBLE ERROR (MPE)

15(1) Specifies the maximum permissible error values for active electrical energy meters which are given in Table 3.

15(2) The maximum permissible error values are "bilateral" (i.e. the error limit can be applied plus or minus about the true measurement value).

15(3) Specifies how the effects of the various measurands and influence quantities are evaluated separately and then combined to give the error of measurement. This shall not exceed the maximum permissible error values given in Table 3.

15(4) Specifies that the maximum permissible error values given in Table 3 are applicable to active electrical energy meters operating under varying-load conditions.

15(5) Specifies that the relevant maximum permissible error values given in Table 3 should be used for active electrical energy meters operating in different temperature ranges.

16. PERMISSIBLE EFFECT OF DISTURBANCES – ELECTROMAGNETIC ENVIRONMENT

16(1) Specifies the performance of an active electrical energy meter in the presence of a disturbance under rated operating conditions. The terms

“disturbance”, “influence quantity” and “critical change value” are defined in Schedule 1, paragraph 2 of the Regulations.

16(2) When an active electrical energy meter is intended to be used in a specified permanent continuous electromagnetic field, the performance must be within MPE during the radiated electromagnetic field-amplitude modulated test. This is an essential requirement of the Directive that is applicable to all instruments and reference should be made to the appropriate standards.

16(3) Requires a special electromagnetic environment E2 to be used for active electrical energy meters as these are directly connected to the mains supply and mains current is one of the measurands.

Disturbances of long duration shall not affect the accuracy of the meter beyond the critical change values given in Table 4, while the requirements of a meter subjected to transient electromagnetic disturbances are given in paragraph 16(5) of the Regulations.

The metrological characteristics of the meter shall be protected against the high risk of disturbances due to lightning or overhead supply networks.

16(4) Table 4 specifies the critical change values referred to in paragraph 16(3) for various disturbances of long duration.

The critical change value is defined in paragraph 2 as the value at which the change in the measurement result is considered undesirable i.e. the limit by which the measurement result is permitted to *change* as the result of a disturbance. Paragraph 16(3)(c) requires disturbances of long duration not to affect the accuracy beyond the critical change values. The critical change value is therefore, effectively, an additional error allowance by which the measurement result may change but only under these exceptional conditions.

16(5) Specifies the requirements of a meter subjected to transient electromagnetic disturbances.

17. SUITABILITY

17(1) Fraudulent use is a serious concern and this is a “catch all” requirement, in addition to those specifically identified elsewhere in the Regulations, to prevent the meter being used incorrectly in any way. WELMEC WG11 is currently considering the features likely to facilitate fraudulent use of an active electrical energy meter.

17(2) Requires that an active electrical energy meter is suitable for its intended use taking account of the practical working conditions. This is a requirement of the meter itself – not the installation of the meter which is covered in Schedule 1, Part 2 of the Regulations. The meter shall also not require unreasonable demands of the user to obtain a correct measurement result (e.g. the display must be easily readable, etc).

17(3) The errors of an active electrical energy meter at voltages or currents outside the controlled range shall not be unduly biased. The phrase unduly

biased is not defined but may be considered in conjunction with paragraph 17(7).

17(4) Where an active electrical energy meter is designed for the measurement of values of the measurand that are constant over time, the instrument shall be insensitive to small fluctuations of the value of the measurand, or shall take appropriate action.

17(5) Requires an active electrical energy meter to be robust and constructed from materials suitable for the conditions in which it is intended to be used. This refers to physical properties of the meter (i.e. the meter casing and display) – not the reliability and durability of the metrological characteristics of the meter which are covered in paragraphs 7 and 8 of the Regulations.

17(6) Requires the metrological software to be identifiable and not inadmissibly influenced by any associated software. See also paragraph 9 of the Regulations.

17(7) Specifies the maximum positive error of the active electrical energy meter when operated below the rated operating voltage.

17(8) When the active electrical energy meter is operated for 4000 hours at full load the display shall have a sufficient number of digits to ensure that the indication does not return to its initial value. In addition, it shall not be possible to be reset the display during use.

17(9) The active electrical energy meter shall have sufficient “memory” so the amounts of electrical energy measured remain available for reading during a period of at least 4 months in the event of loss of electricity in the circuit.

17(10) The active electrical energy meter shall not register energy at any voltage between $0.8 U_n$ and $1.1 U_n$ with no current flowing.

17(11) The active electrical energy meter shall start and continue to register at U_n , PF = 1 (polyphase relevant instruments with balanced loads) and a current which is equal to I_{st} .

18 UNITS

The metrologically controlled display of the active electrical energy meter must show the electrical energy measured in kilowatt-hours or mega-watt-hours. See also paragraph 10(4) of the Regulations.

PART 2 – PUTTING INTO USE REQUIREMENTS

19(1) Active electrical energy meters may only be used within the temperature range specified by the manufacturer as outside of these ranges there is no guarantee of accuracy.

19(2) Irrespective of whether a Class A meter is installed inside, outside or in a compartment it should not be used if the temperature within the environment where the meter is located is at anytime outside the 5°C to 30°C temperature range because of concerns about the accuracy of Class A meters outside these temperatures.

19(3) The installer of the active electrical energy meter (i.e. not the manufacturer or notified body) is responsible for ensuring that it is appropriate for the accurate measurement of consumption that is foreseen or foreseeable. The installer will therefore be required to assess the temperature aspects along with all other installation considerations.

SCHEDULE 2 - NOTIFIED BODIES

PART 1 – NOTIFIED BODY CRITERIA

This Schedule sets out the criteria that a notified body must meet in order to satisfy GEMA (or NIAER) that the body is suitable to be designated a notified body under the Regulations. This includes demonstrating that the body, its director and staff involved in conformity assessment are professional and not subject to financial inducements, has at its disposal all the staff and facilities necessary to carry out the conformity assessment in a proper manner, will be impartial, observe professional secrecy and holds adequate civil liability insurance.

Where the body sub-contracts specific tasks it will need to ensure that the sub-contractor meets the requirements of the Regulations. The body must keep relevant documents assessing the sub-contractor's qualifications and the work carried out by him under the Regulations at the disposal of GEMA (or NIAER).

The applicant body shall demonstrate that it meets the core criteria set out in the Directive. If an applicant applies in the UK, it is GEMA, acting via NWML, which will assess whether an organisation meets the core criteria necessary to enable them to act as a notified body.

The following standards act as guidelines for the operation of various notified bodies:

The ISO/IEC 17000 Series

Council Decision 93/465/EEC sets out the general framework for the assessment of notified bodies. It includes the policy that member States should use the EN 45000 series of standards as the basis for the assessment of an applicant body against the core criteria.

These standards are being replaced progressively by standards in the ISO/IEC 17000 series and the standards that are relevant for these guidelines are listed below. They are referred to collectively as the “conformity assessment body standards”. The conformity assessment body standards cover different types of body but in general terms they have a similar structure, consisting of parts dealing with the organisation and management of a body, and parts dealing with the technical requirements relating to the operation of the body in the areas of testing, inspection, product certification and management systems assessment.

- **BS EN ISO/IEC 17025:2005** *General requirements for the competence of testing and calibration laboratories* (The contents of this standard differ considerably from BS 45001:1989 that it has superseded).
- **BS EN ISO/IEC 17020:2004** *General criteria for the operation of various types of bodies performing inspection* (This standard has superseded BS EN 45004:1995 but the contents are identical).
- **BS EN 45011:1998** *General requirements for bodies operating product certification systems.*
- **BS EN 45012:1998** *General requirements for bodies operating assessment and certification/registration of quality systems* (This standard will be superseded by ISO/IEC 17021).

Although notified bodies for active electrical energy meters are designated by GEMA (or NIAER), further guidance is available from the NWML website¹⁴.

Reference should also be made to the WELMEC WG8 website¹⁵ which provides guidance for notified bodies.

¹⁴ www.nwml.gov.uk/mid.aspx

¹⁵ <http://www.welmec.org/wgi.asp#wg8>

PART 2 – FUNCTIONS

Details the functions of a notified body involved in the conformity assessment of active electrical energy meters.

The notified body is required to assess the application from the manufacturer for a certificate of conformity, design or type examination certificate, or notification (i.e. approval of the manufacturers' quality system) taking account of the actual or usual environment of the active electrical energy meter concerned, together with any other technical criteria appearing to it to be relevant.

Where, in the opinion of the notified body, the active electrical energy meter to which an application relates is compliant with the essential requirements, it shall issue a certificate or notification in accordance with paragraph 12.

Where, in the opinion of the notified body, the active electrical energy meter to which an application relates is not compliant with the essential requirements, it shall issue a notice to the applicant in accordance with paragraph 15.

Paragraph 9(5) requires a notified body designated under regulation 7 to send a copy of:

- (a) a certificate of conformity
- (b) a design or type examination certificate
- (c) a notification of approval of the manufacturer's quality system

to GEMA (or to NIAER, where that authority has designated the body) once it has been issued.

Specific arrangements will be made with notified bodies issuing certificates in categories (b) and (c) as part of the designation process.

For notified bodies appointed to conduct tasks under annexes that require the issuing of certificates of conformity, the process is more general. In the first instance the notified body is required to report a summary of actions as part of their designation letter (Annex 1). The notified body is also required to retain the certificate of conformity for assessment by the body's designated auditor on behalf of GEMA (or NIAER) and, if requested, for inspection directly by GEMA (or NIAER).

SCHEDULE 3 – TECHNICAL DOCUMENTATION

This Schedule details the technical documentation necessary to permit an assessment of the conformity of the active electrical energy meter with the appropriate requirements of the Regulations.

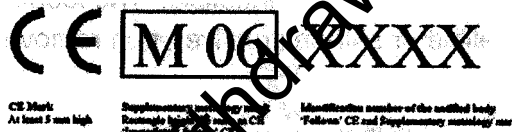
It should be noted that there is a requirement in the Directive for the manufacturer to keep a copy of the technical documentation for 10 years after the last instrument has been manufactured (see Annex B, D, F and H1).

SCHEDULE 4 - MARKING AND INSCRIPTIONS

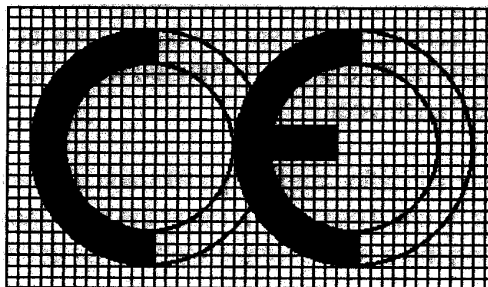
Details the markings and inscriptions required on the active electrical energy meter by regulation 12(3). See also Schedule 1, paragraph 10.

The Directive does not itself contain diagrams for the CE marking or the M marking although **the CE mark** is prescribed by reference to paragraph 1.B(d) of the Annex to Decision 93/465/EEC.

Possible examples of Article 17 markings required by the Directive:



The CE mark must not be less the 5mm in its vertical height, and the proportions maintained. It is generally shown on a grid in the guidance booklets as below (the grid does not form part of the marking and is for information only):



This mark looks the same as some previous marks, but there are subtle changes, and it should be studied closely. It should be noted, for example, that the C and E are not formed by perfect semi-circles, i.e. the top and bottom arms extend one square beyond the semi-circles, and the middle arm of the E stops one square short.

The graphic is not made available for download from any official sources, but can be obtained in a wide variety of file formats from commercial organisations, sometimes freely available for download. One such organisation in the UK is **Conformance** but please note that GEMA/NWML make no guarantee of accuracy or suitability of any files obtained from commercial sources.

As far as **the M Mark** is concerned, the manufacturer applying the mark has freedom over the design provided that the M marking meets the criteria set down in paragraph 2 of Schedule 4, as to being surrounded by a rectangle also containing the last two digits of the year of affixing, and is placed immediately after the CE mark.

The identification number of the notified body concerned shall follow the CE marking and M marking.

When an active electrical energy meter consists of a set of devices operating together, the markings shall be affixed on the instrument's main device.

The CE marking and the M marking must be indelible. The identification number of the notified body concerned must be indelible or self-destructive upon removal. All markings shall be clearly visible or easily accessible.

SCHEDULE 5 - ADAPTATIONS FOR NORTHERN IRELAND

The in-service regulations regarding Enforcement in Part 3 are disapplied for Northern Ireland which, while covered by the main part of the Regulations, is responsible for its own in-service regulations.

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