

Guidance Note on the use of Metric Units of Measurement by the Public Sector

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1. This Note sets out advice to all public sector organisations concerning the adoption by 1 October 1995 of metric units as the primary system of measurement for the conduct of public business in the United Kingdom. Part A sets out the background and general advice on metrication. Part B sets out more detailed advice on the use of metric units by the public sector.

2. The Note supersedes earlier DTI advice on this matter.

Part A: Background and General Advice

Metric Units as the primary system of measurement in the UK

3. In 1965 the Government announced to Parliament its intention that metric units should become the primary system of measurement in the UK (Hansard (Commons) Vol 713, Col 32-33 (W)). That intention was confirmed subsequently in the 1972 White Paper on metrication (Cmnd. 4880), on the grounds that the UK would find itself at a competitive disadvantage in world trade if it did not adopt the international system of metric units.

4. The metric system has therefore been adopted in stages in the UK since the 1960s, including - since 1974 - adoption as the primary system of measurement taught in schools. Many sectors have changed to metric on a voluntary basis, such as the engineering sector. Others have required amendment of existing legislation. Weights and Measures and Prices legislation have, for example, been amended by subordinate legislation so as to bring them into line with Council Directive 80/181/EEC (as amended by Directives 85/1/EEC and 89/617/EEC) and its predecessor, Council Directive 71/354/EEC (amended by Directive 76/770/EEC) on the approximation of the laws of Member States relating to units of measurement. The Directive requires Member States to adopt metric units as the primary system of measurement for "economic, public health, public safety, and administrative purposes" (Article 2).

The use of units of measurement by the public sector.

5. Units of measurement are used extensively in the conduct of public business, including for expressing quantity in:

(i) primary and secondary legislation, including private and local Acts and byelaws;

(ii) documents (including documents having legal effect), such as court orders, consents, authorisations, circulars and guidance notes;

(iii) invitations to tender and contracts, including for public purchasing;

(iv) and for taking measurements in order to comply with, enforce or validate any of the uses referred to in (i) - (iii).

For the majority of these public sectors uses, imperial units have been the preferred system of measurement.

6. DTI previously advised government departments that from 1 January 1995 they and the public sector organisations for which they are individually responsible should use metric units as the primary system of measurement for the conduct of public business in the UK. Departments raised a number of practical difficulties in meeting this deadline, in particular with regard to the legal status of expressions of quantity in imperial units in existing legislation, documentation, etc.

7. DTI's revised advice to all public sector organisations is that by no later than 1 October 1995 they should use metric units for the conduct of all future public business, with the exception of certain imperial units which may continue to be used as the primary units of measurement for the purposes described in Appendix 1

8. Public sector organisations are further advised that the continued use of imperial units as the primary system of measurement after 1 October 1995 - other than in the circumstances described in paragraph 7 above - could render liable to legal challenge expressions of quantity in future legislation, documentation, etc on the ground of inconsistency with the Units of Measurement Directive (see paragraph 4 above).

Part B: Detailed Advice on Metrication

Metric units for use by the public sector from 1 October 1995.

9. The principal metric units of measurement that should be used for the conduct of public business from 1 October 1995 (except for the uses described in Appendix 1 to this Note are set out in Appendix 2 to this Note), together with the imperial units to which the metric units correspond. DTI is happy to provide advice about the more specialised metric units.

10. The standard abbreviations for describing the principal metric units are also given in Appendix 2. DTI advises that all expressions of quantity in metric units should be given clearly and correctly (eg "4 kg" or "four kilograms") in order to avoid any possible confusion with imperial units in future legislation, documentation, etc.

11. Appendix 2 also includes the equivalent values of the imperial units to the principal metric units. But DTI strongly advises public sector organisation that where it is necessary to include an expression of quantity in future legislation, documentation, etc, the quantity should be calculated ab initio in metric units. If the calculations initially are made in imperial units and are then converted to metric units there is the risk of an error in making the conversion calculations. As metric units become the primary system of measurement, there is also a risk that an incorrect conversion to metric units would be the enforceable quantity, and that the intended quantity calculated in imperial units would be unenforceable.

Imperial units as supplementary indications from 1 October 1995.

12. After 1 October 1995, public sector organisations may continue to use imperial units as supplementary indications of quantity together with indications given in metric units in legislation, documentation, etc, eg: "4kg (8 lb 13 oz...)". When imperial units are used in supplementary indications they should not be more prominent than the primary metric indication. In order to avoid potential confusion between the two systems of measurement, DTI suggests that, where supplementary indications are used, they should follow, rather than precede, the primary metric indication; and that both primary and secondary indications should be expressed in the same way, eg: either "4kg (8 lb 13 oz)" or "four kilograms (eight pounds thirteen ounces)", but not "4 kg (eight pounds thirteen ounces)" or "four kilograms (8 lb 13 oz)". It may be appropriate - and helpful - to add the words "approximately" before the supplementary indication.

13. As can be seen from Appendix 2, the factors for converting between imperial and metric units are not round numbers. DTI advises that it would be acceptable to 'round' imperial supplementary indications in order to reduce the number of decimal places in some cases that may be involved in giving an exact conversion of a quantity expressed in metric units. For example, 4 kg equals 8lb 13.09568 oz and a supplementary indication could reasonably be expressed as "8 lb 13 oz". Although 8lb 13 oz equals 3.9972875kg, the legally enforceable quantity is the quantity expressed in metric units.

14. DTI strongly advises against the use of so-called "decimal" imperial units for supplementary indications, (eg 8.8 lbs, rather than 8 lb 13 oz), since this increases the potential for confusion.

Provision for references to imperial units in legislation and in documents etc made before 1st October 1995.

15. There are many existing references to imperial units relevant to public sector bodies in legislation and in documents which have been made before 1 October 1995 and which will have effect, or continue to have effect, on or after that date. DTI has recognised that not all of these can be amended individually before that date. The Units of Measurement Regulations 1995, a copy of which is attached, therefore provide for the conversion of imperial quantities to metric where these appear in the legislation and in those documents etc to which the Regulations apply.

16. The Regulations make this conversion only where the imperial quantity has, before 1 October 1995, been used in such a way as to have some legal effect after that date. The conversion is made by means of conversion factors given in the Regulations.

17. Public sector bodies should consider the Regulations carefully. In particular, they should establish how they affect the legislation and documents with which they are concerned. Imperial quantities used in legislation - including subordinate legislation, such as byelaws - passed or made before 1 October 1995 are converted. So are imperial quantities used in any contract, agreement, licence, authority, undertaking, statement, deed, instrument or document made or given before that date.

18. The regulations do not have any effect on legislation or other documents etc made or issued on or after 1 October 1995 - the date on which the Regulations come into force. Those bodies that, on or after that date, are drafting or making legislation, processing documents or concluding agreements and are not certain how to proceed, should consult their legal advisers. DTI will be happy to liaise with them.

19. The Regulations offer a quick and effective solution to the problem presented by the volume of references to imperial units in legislation and elsewhere which, without them, would be very difficult to metricate. DTI advises that public sector bodies, however, identify and, as a matter of priority, plan to metricate, those references that they are most frequently concerned with and for which they have responsibility where the generic conversion made by the Regulations would not be appropriate. It is likely to be more satisfactory to make specific provision to convert these into metric than to rely on the general provision for conversion made by the Regulations. Where amendments to primary legislation are

sought for the sole purpose of converting units of measurement, it may be possible for this to be done by statutory instrument under powers in the European Communities Act 1972. Departments wishing to use the 1972 Act in this way should contact DTI. Where existing legislation is being amended for a purpose other than metrication, the opportunity should be taken to convert any imperial units to metric units.

Advice to public sector managers

20. Public sector managers should ensure that their staff use metric units from 1 October 1995 for all public sector business, except for the uses described in Appendix 1 to this Note.

21. Managers should additionally identify any frequent use their staff make of imperial units set out in existing legislation, and seek to make the necessary legislative conversions as soon as practicable, as described in paragraph 19 above.

22. Managers should also ensure that their staff are familiar with the metric system. Staff under 30 years of age are likely to have been educated in the metric system.

23. Managers are advised that they can seek further information and advice on all aspects of metrication from DTI.

Dealings with the public

24. From 1 October 1995 information given to or requested from the general public and private sector organisations which includes expressions of quantity should be given/requested in metric units (eg public procurement tender specifications, planning application dimensions, volumes of sales, etc). The only exceptions to this general rule are imperial units that may continue to be used as the primary system of measurement in the circumstances outlined in Appendix 1 to this Note.

25. The general public has built up considerable familiarity with the metric system. Most pre-packed foods have been sold in metric units for more than a decade, as have many DIY products. Nevertheless, in most cases members of the public over 30 years of age have not had any formal education in the metric system. Care should therefore be taken to ensure that references to metric units are clearly stated as such, either in advice given to or information sought from members of the public involving units of measurement.

26. Public sector organisations should consider therefore the extent to which it would be helpful in their dealings with the public to make use of imperial units as supplementary indications to the primary metric units (see paragraphs above).

27. If members of the public query the use of metric units generally, this should be explained as part of a process that began thirty years ago, for the economic reasons set out in the 1972 White Paper (see paragraph 3); and that the conversion by the public sector to the use of metric units has in the past been preceded by their adoption for many commercial, research and educational purposes. Any further queries on these points should be directed to DTI.

Appendix 1

Imperial Units Of Measurement Available For Primary Use After 1 October 1995

Some imperial units remain available as the primary system of measurement for certain specific uses, either without time limit or no later than 31 December 1999. The units and their uses are as follows:

a. Imperial units of measurement to be used without time limit.

- i. pint for sales of draught of beer or cider and for milk sold in returnable containers;
- ii. mile, yard, foot and inch for road traffic signs and for related distance and speed measurements;
- iii. foot in aircraft heights and other units used in the field of air and sea transport and rail traffic, which have been laid down in international conventions etc (see Article 2 of Directive 80/181);
- iv. nautical mile and knot for sea and air traffic;
- v. troy ounce for transactions in precious metals;
- vi. acre for land registration

b. Imperial units of measurements which may be used no later than 31 December 1999

- i. pound and ounce for goods sold loose from bulk (eg fruit and vegetables not sold in pre-packs);
- ii. therm for gas supply;
- iii. fathom for marine navigation;
- iv. fluid ounce and pint for sales of beer, cider, water, lemonade and fruit juice in returnable containers

Appendix 2

The Principal Metric Units of Measurement

Metric Unit and Standard Abbreviation	Corresponding Imperial Unit	Imperial Equivalent
Length millimetre (mm) centimetre (cm) metre (m) kilometre (km)	inch inch yard mile	0.03937007 inch 0.3937007 inch 1.0936132 yards 0.6213711 mile
Area square millimetre (mm ²) square centimetre (cm ²) square metre (m ²) square kilometre (km ²)	square inch square inch square yard square mile	0.00155003 square inch 0.1550003 square inch 1.19599 square yards 0.3861021 square mile
Capacity millilitre (ml) centilitre (cl) litre (l or L)	fluid ounce fluid ounce pint	0.035195 fluid ounce 0.35195 fluid ounce 1.7597538 pints
Mass gram (g) kilogram (kg) tonne (t)	ounce pound pound	0.0352739 ounce 2.2046224 pounds 2204.6224 pounds
Temperature degree Celsius (°C)	degree Fahrenheit	$\times \frac{9}{5} + 32$ degree Fahrenheit.