

M 33a:1992

THE INTERNATIONAL METRIC SYSTEM (SI)

Guide to the use of the SI in South Africa

Published by
THE COUNCIL OF THE SOUTH AFRICAN BUREAU OF STANDARDS

ISBN 0-626-09118-7

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ERRATUM M 33a:1992 (ENGLISH)

Table 9, third column. *For db read dB*

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Printed in the Republic of South Africa by the
South African Bureau of Standards

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Foreword

In 1960 the Conférence Générale des Poids et Mesures (CGPM), which is the international authority on the metric system, accepted a universal, practical system of units and gave to it the name Le Système International d'Unités with the international abbreviation SI. Since then this most modern and simplest form of the metric system has been introduced throughout the world and many countries, including established metric countries, have already passed legislation making the SI their only legal system of units. In the Republic of South Africa the way to the introduction of the SI on 5 July 1974, was paved by the Measuring Units and National Measuring Standards Act, 1973 (Act No. 76 of 1973).

In view of the international character of the SI it is imperative that it be used correctly in order to fully realize the tremendous advantages of a simple and uniform language of measuring, and for this reason the now defunct Metrication Advisory Board, through its Metrication Department which was attached to the SABS, took great pains to ensure that the conversion to and implementation of the SI would proceed as smoothly as possible. Guides dealing with aspects of importance to various sectors, subject specialists and user groups were issued, and solutions to problems encountered in the application of the SI were suggested in the monthly South African Metrication News. There has been a continuing demand for one such guide, namely M 33a The International Metric System (SI), which was originally issued in April 1973, a few months before the official introduction of the SI as the only legal system of measurement in South Africa. This demand for M 33a and the general enquiries received daily from the public, are regarded as clear indications of a need for guidance on the metric system. The SABS consequently decided to revise M 33a and to reissue it in updated form. This has been done and the present version is the result. However, clauses 7, 8 and 9 were taken over without change from the 1973 issue of M 33a because they deal purely with conversion from the imperial to the metric system and contain the conversion factors.

The following particulars are given for the information of persons who would like to refer to the official documents or other relevant publications:

1. Legislation, regulations and rules

1.1 The Measuring Units and National Measuring Standards Act, 1973 (Act No. 76 of 1973).

The date on which this Act came into operation was announced in Government Notice R.125, Government Gazette No. 4326, of 5 July 1974.

This Act is an enabling Act by which the Minister concerned may, by issuing Government Notices, lay down which units may be used in the Republic and for what purpose, and how these units and the symbols to represent them must be used. The Act also makes provision for the prohibition of the use of certain units in certain applications and provides for the systematic elimination of the imperial and obsolete metric units as the change-over to the SI progresses.

1.2 A number of Government Notices covering the following have been issued:

1.2.1 Units that may be used

Units that may be used in the Republic are set out in Government Notice R.1146 of 5 July 1974 and the Schedules thereto:

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The First Schedule contains a list of the SI units together with their permissible multiples and submultiples and the rules for their use. One of these rules states that the comma is to be used as decimal sign and that spaces are to be used to separate digits into groups of three on either side of the comma.

The Second Schedule lists a number of non-SI units that may be used with the SI in restricted applications and/or for a limited time. These units are arranged in 5 tables.

Table 1: minute, hour, day, degree, minute, second, gon, ton (metric), litre. (Similar to table 8 of this guide.)

Table 2: electronvolt, atomic mass unit, astronomical unit, parsec. (Similar to table 9 of this guide.) (The decibel has since been added.)

Table 3: nautical mile, knot, dioptré, tex, hectare, barn. (The carat (metric) has since been added.)

Table 4: curie, roentgen, rad. (The curie and rad have since been deleted.)

Table 5: practically all the other imperial units and obsolete c.g.s. units etc. in use in SA.

Table 1 contains units in general use with the SI; table 2 contains units in use with the SI in specialized fields. Tables 3 and 4 contain units "for use with the SI for a limited time"; the heading to table 5 reads "Units to be systematically eliminated".

Tables 3, 4 and 5 have been included to cater for cases where metrication programmes have not yet been completed or where circumstances such as for example international usage or requirements so far prevent the change to be made. Notice R.1146 has primarily been drawn up as a guide and as an indication of the final aim of metrication.

1.2.2 Further developments

The intention of systematically eliminating all the units of table 5, either by deleting them altogether from the table (in which case they may not be used in any application), or prohibiting their use in certain applications, was finally achieved on 1 January 1979 with the deletion, with the exception of the degree Fahrenheit, of the remaining units in this table.

The Government Notice (R.1791 of 4 October 1974) which started the elimination programme, stated that units of table 5 of the Second Schedule referred to above may not be used in advertising or for building and construction plans, drawings and specifications put up for tender or put out to contract.

This Government Notice also stated that a unit (or multiple or submultiple thereof) listed in the First Schedule or Tables 1–4 of the Second Schedule "shall not in any circumstances or for any purpose be designated by any symbol or abbreviation other than a symbol specified in the Schedule or tables, subject to any appropriate rule in the Schedule or tables." The reference to "any appropriate rule" means e.g. that the comma **must** be used as decimal sign.

It was also stipulated that none of the prohibitions mentioned in R.1791 would apply to:

- a) writings originating in other countries or intended for exclusive distribution in other countries;
- b) conversion tables (except that correct symbols must be used);
- c) articles of an historical or artistic nature;
- d) basic scientific research (e.g. it may be necessary to create new units);
- e) cases where permission for deviation has been granted by the Director of Trade Metrology;
- f) the use of units by a private household or *internally* in any business, factory or organisation.