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(Statutory Rules and Territory Ordinances)

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Statutory Rules 1985 No. 4<sup>1</sup>

315/

**National Measurement Regulations<sup>2</sup>  
(Amendment)**

~~I, THE ADMINISTRATOR~~ <sup>GOVERNOR-GENERAL</sup> of the Government of the Commonwealth of Australia, acting with the advice of the Federal Executive Council, hereby make the following Regulations under the *National Measurement Act 1960*.

Dated 21 November 1985.

M. M. STEPHEN

Governor-General  
Administrator

By His Excellency's Command,

BARRY JONES  
Minister of State for Science

**Principal Regulations**

1. In these Regulations, "Principal Regulations" means the National Measurement Regulations.

**Units of measurement of power**

2. Regulation 32 of the Principal Regulations is amended by adding at the end the following sub-regulation:

"(4) In sub-regulation (1), 'power' includes sound power."

**Units of measurement of pressure**

3. Regulation 34 of the Principal Regulations is amended by adding at the end the following sub-regulation:

"(4) In sub-regulation (1), 'pressure' includes sound pressure."

4. After Division 32 of Part II of the Principal Regulations the following Divisions are inserted:

***“Division 33—Sound intensity***

**Units of measurement of sound intensity**

“73. (1) The units of measurement of sound intensity are the units specified in Column 2 of Schedule 30C.

“(2) A unit of measurement specified in an item in Schedule 30C is related to the watt per square metre as specified in Column 3 of that Schedule in that item.

“(3) A unit of measurement specified in an item in Schedule 30C may be referred to by the symbol specified in Column 4 of that Schedule in that item.

**The watt per square metre**

“74. The watt per square metre is the sound intensity when a sound power of one watt is propagated through an area of one square metre normal to the direction of propagation.

***“Division 34—Sound power level, sound pressure level, sound intensity level***

**The decibel**

“75. (1) The decibel is the unit of measurement of—

- (a) sound power level;
- (b) sound pressure level; and
- (c) sound intensity level.

“(2) In measuring sound power level in decibels, the number of decibels is the number equal to 10 times the logarithm to the base 10 of the ratio of the sound power in the particular case expressed in watts to a reference sound power of  $10^{-12}$  watts.

“(3) In measuring sound pressure level in decibels, the number of decibels is the number equal to 20 times the logarithm to the base 10 of the ratio of the root-mean-square sound pressure in the particular case expressed in pascals to a reference sound pressure of  $2 \times 10^{-5}$  pascals.

“(4) In measuring sound intensity level in decibels, the number of decibels is the number equal to 10 times the logarithm to the base 10 of the ratio of the sound intensity in the particular case expressed in watts per square metre to a reference sound intensity of  $10^{-12}$  watts per square metre.

“(5) The decibel may be referred to by the symbol ‘dB’.”.

**Insertion of Schedule 30C**

5. After Schedule 30B to the Principal Regulations the following Schedule is inserted:

## SCHEDULE 30C

Regulation 73

## UNITS OF MEASUREMENT OF SOUND INTENSITY

| Column 1 | Column 2                             | Column 3                                        | Column 4          |
|----------|--------------------------------------|-------------------------------------------------|-------------------|
| Item     | Name of unit                         | Sound intensity<br>in watts per<br>square metre | Symbol            |
| 1        | kilowatt per square metre . . . . .  | $10^3$                                          | $\text{kW/m}^2$   |
| 2        | watt per square metre . . . . .      | 1                                               | $\text{W/m}^2$    |
| 3        | milliwatt per square metre . . . . . | $10^{-3}$                                       | $\text{mW/m}^2$   |
| 4        | microwatt per square metre . . . . . | $10^{-6}$                                       | $\mu\text{W/m}^2$ |
| 5        | nanowatt per square metre . . . . .  | $10^{-9}$                                       | $\text{nW/m}^2$   |
| 6        | picowatt per square metre . . . . .  | $10^{-12}$                                      | $\text{pW/m}^2$   |

## NOTES

1. Notified in the *Commonwealth of Australia Gazette* on L 1985.
2. Statutory Rules 1961 No. 142 as amended by 1963 No. 126; 1964 No. 146; 1965 No. 13; 1968 No. 150; 1970 No. 40; 1972 Nos. 62, 133 and 160; 1973 Nos. 68 and 253; 1977 No. 150; 1979 No. 65; 1981 No. 195; 1983 No. 64; 1984 Nos. 195 and 231.

28 November/