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Act 675

NATIONAL MEASUREMENT SYSTEM ACT 2007

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NATIONAL MEASUREMENT SYSTEM ACT 2007

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LAWS OF MALAYSIA

Act 675

NATIONAL MEASUREMENT SYSTEM ACT 2007

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LAWS OF MALAYSIA

Act 675

NATIONAL MEASUREMENT SYSTEM ACT 2007

An Act to provide for uniform units of measurement based on the International System of Units, the establishment of measurement standards and measurement traceability and the co-ordination of Malaysia's national measurement system, and for matters connected therewith.

[*15 February 2008, P.U. (B) 44/2008*]

ENACTED by the Parliament of Malaysia as follows:

PART I

PRELIMINARY

Short title and commencement

1. (1) This Act may be cited as the National Measurement System Act 2007.

(2) This Act comes into operation on a date to be appointed by the Minister by notification in the *Gazette*.

(3) The Minister may by order published in the *Gazette* suspend the operation of the whole or any of the provisions of this Act in respect of any agency, department or organization or in respect of certain fields of measurement.

Application

2. (1) This Act shall apply throughout Malaysia.

(2) This Act shall not apply to the use of units of measurement in—

(a) any international conventions;

(b) any agreements between governments in the fields of navigation by sea, air traffic and rail transport; and

(c) the armed forces.

Interpretation

3. In this Act, unless the context otherwise requires—

"measuring instrument" means any instrument which is used to measure a physical measurable quantity;

"reference material" means any material whose properties are used for the calibration of measuring instruments or the assessment of a measuring method, or the assignment of values to materials;

"certified reference material" means a reference material which is issued by the National Measurement Standards Laboratory or any other person or body, recognized by the National Measurement Standards Laboratory;

"Ministry" means the Ministry charged with the responsibility for standards and accreditation;

"measurable quantity" means the attribute of a phenomenon body or substance that may be distinguished qualitatively and determined quantitatively;

"Council" means the National Measurement Council established under section 13;

"National Measurement Standards Laboratory" means the laboratory established under section 9;

"Minister" means the Minister charged with the responsibility for standards and accreditation;

"national measurement system" means the technical and organizational infrastructure related to measurement within Malaysia that enables individuals and organizations in Malaysia to make measurements competently and accurately and which are traceable to the National Measurement Standards;

"measurement standard" means a measuring material, measuring instrument or measuring system intended to define, realize, conserve or reproduce a unit or one or more values of a quantity to serve as a reference in the measurement of that measurable quantity;

"National Measurement Standard" means a measurement standard or reference material established, maintained or caused to be maintained by the National Measurement Standards Laboratory or organization appointed under subsection 12(1) to serve as the basis for assigning values to a particular measurable quantity;

"base unit" means one of the seven units of measurement as set out in the First Schedule upon which the International System of Units is based;

"units of measurement" means a particular measurable quantity, defined and adopted by convention, with which other quantities of the same kind are compared in order to express their magnitudes relative to that quantity;

"derived unit" means a unit of measurement derived from a combination of base units;

"International System of Units" means the coherent system measurement units as described in subsection 4(2) and the abbreviation "SI" wherever refers to in this Act shall be recognized as referring to such International System of Units;

"coordinated universal time" means the time scale maintained by the National Measurement Standards Laboratory and the abbreviation "UTC" wherever refers to in this Act shall be recognized as referring to such coordinated universal time;

"Malaysian Standard Time" means the time as given by coordinated universal time plus eight hours based on the time zone of Longitude 120° East.

PART II

UNITS OF MEASUREMENT

Units of measurement

4. (1) The only units of measurement to be used throughout Malaysia shall be the units known as International System of Units.

(2) The International System of Units shall comprise—

(a) the base units as specified in Part 1 of the First Schedule;

(b) the derived units as specified in Part 2 of the First Schedule; and

(c) all multiples and submultiples of the base units as specified in Part 3 of the First Schedule.

(3) Without prejudice to the provision of subsection (1), other units of measurement permitted to be used with International System of Units are as specified in the Second Schedule.

(4) The Malaysian Standard Time shall be the basis for the measurement of civil time.

Measurement to be expressed in units of measurement

5. (1) Upon the coming into operation of this Act, every measurement of measurable quantity shall be made in compliance with the requirements under this Act, and if not so made the measurement shall be considered void.

(2) If—

(a) reference is made in any other written law to a unit of measurement of a measurable quantity; and

(b) there is another unit of measurement of that measurable quantity having the same name,

the reference shall, unless the contrary intention appears, be deemed to be a reference to the units of measurement under this Act.

(3) Nothing in subsection (1) shall be taken to affect the validity of any measurement made in the unit of measurement of a measurable quantity that, at the time the measurement was made, was the unit of measurement of that measurable quantity.

Realization and maintenance of National Measurement Standards

6. (1) The National Measurement Standards shall be realized in the manner as prescribed in the regulations made under section 14.

(2) The National Measurement Standards Laboratory shall maintain or cause to be maintained the National Measurement Standards as the Minister considers necessary to provide the means by which measurements of measurable quantities may be made in terms of the units of measurement of such measurable quantities.

(3) The National Measurement Standards Laboratory shall maintain or cause to be maintained certified reference materials as are necessary to provide the means by which measurement of measurable quantities may be made in terms of the units of measurement of such measurable quantities.

Traceability of measurement

7. (1) Any measurement made for the purpose of any written law shall be traceable to the National Measurement Standards as set out in this Act.

(2) Traceability of a measurement to the National Measurement Standards may be achieved by means of reference to, comparison with or derivation from the National Measurement Standards either directly or indirectly, through a continuous series of any one, or a combination of any of those means involving the use of one or more appropriate measurement standards and the National Measurement Standards.

(3) If the establishment of traceability to the National Measurement Standards is not possible or not relevant, other means for providing confidence in the result of any measurement shall be carried out by appropriate methods established in accordance with procedures not inconsistent with the current written standards as established by the National Measurement Standards Laboratory.

Traceability of measurement outside Malaysia

8. (1) If there is no traceability to the National Measurement Standards as set out in this Act established within Malaysia for any measurement made for the purposes of any written law, the measurement may be traceable to a measurement standards laboratory of another country or to a calibration laboratory in another country recognized under subsection (2).

(2) The National Measurement Standards Laboratory may recognize any measurement standards laboratory or any calibration laboratory outside Malaysia to be a laboratory for the purposes of traceability under subsection (1).

(3) Before recognizing any laboratory under subsection (2), the National Measurement Standards Laboratory shall be satisfied with the measurement capability of that laboratory and that the measurement standards or reference materials maintained by that laboratory are of sufficient accuracy for the purposes of traceability.

PART III

NATIONAL MEASUREMENT STANDARDS LABORATORY

The National Measurement Standards Laboratory

9. (1) The Minister may, by notification in the *Gazette* appoint a laboratory to be the National Measurement Standards Laboratory.

(2) The National Measurement Standards Laboratory shall be responsible for carrying into effect the provisions of this Act.

Functions of the National Measurement Standards Laboratory

10. The functions of the National Measurement Standards Laboratory shall be—

(a) to realize, establish and maintain or cause to be maintained, the National Measurement Standards for the purposes of section 6;

(b) to disseminate units of measurement that are traceable to the National Measurement Standards;

(c) to maintain or cause to be maintained the coordinated universal time;

(d) to carry out research and to develop measurement technology and measurement standards;

(e) to approve the patterns of measuring instruments;

(f) to co-ordinate and promote the national measurement system;

(g) to assist the Council on matters relating to measurement technology and measurement standards;

(h) to publish and disseminate technical information relating to measurement technology and measurement standards; and

(i) to perform any other functions as the Minister may require and consider necessary.

Powers of the National Measurement Standards Laboratory

11. (1) The National Measurement Standards Laboratory shall have power to do all such things as are reasonably necessary or expedient for, or incidental to the carrying out of its functions.

(2) Without prejudice to the generality of subsection (1), the power of the National Measurement Standards Laboratory shall include the power—

(a) to undertake international comparison of measurement standards;

(b) to co-operate and collaborate with other measurement laboratories and institutions of higher learning in the field of measurement;

(c) to represent Malaysia in international measurement activities;

(d) to impose fees and other charges as the Minister may prescribe by regulations;

(e) to issue a certificate in respect of any reference material or recognize a certificate in respect of any reference material issued by any other person or body; and

(f) to perform any other functions as the Minister may require.

Power of Minister to appoint organization in respect of specific units of measurement, *etc*.

12. (1) The Minister may, with the advice of the Council, by order published in the *Gazette*, appoint any organization within Malaysia to carry out the duties as prescribed by regulations made under subparagraph 14(2)*(f)*(i) in respect of—

(a) specific units of measurement;

(b) specific certified reference materials;

(c) specific categories of units of measurement; and

(d) specific categories of certified reference materials.

(2) The power of the Minister under subsection (1) shall only be exercised in the event that the National Measurement Standards Laboratory is unable to carry out any of its functions under section 10.

(3) The organization appointed under subsection (1) shall be under the technical supervision of the National Measurement Standards Laboratory and shall be subject to the duties and powers and terms and conditions as may be prescribed in the regulations made under subsection 14(2).

PART IV

NATIONAL MEASUREMENT COUNCIL

Establishment of the National Measurement Council

13. (1) A Council to be known as the "National Measurement Council" is established, consisting of the following members who shall be appointed by the Minister:

(a) a Chairman;

(b) a representative from the Ministry;

(c) a representative from the National Measurement Standards Laboratory;

(d) two other persons representing the Government, to be appointed from amongst persons involved in measurement standards and measurement technology; and

(e) not more than five other members with appropriate experience, knowledge and expertise on matters relating to measurement standards and measurement technology.

(2) The Minister shall appoint a Deputy Chairman from amongst the members appointed under paragraphs (1)*(b)* to *(e)*.

(3) The functions of the Council shall be—

(a) to advise the Minister on all matters concerning the national policy objectives for measurement system activities; and

(b) to advise the Minister and submit recommendations for the consideration and approval of the Minister in respect of measurement matters which—

(i) may enhance international confidence in Malaysia's national measurement system;

(ii) may support Malaysia's international obligations in respect of measurement activities;

(iii) may facilitate the government's policy in national and international trade, legislative matters or international relations;

(iv) may serve public interest in the areas of health, safety and environment;

(v) enable scientific research and development to be carried out; and

(vi) facilitate economic development which is beneficial to Malaysia.

(4) The provisions of the Third Schedule shall apply to the Council.

Part V

GENERAL

Power to make regulations

14. (1) The Minister may make such regulations as are necessary or expedient to give full effect to or for carrying out the provisions of this Act.

(2) Without prejudice to the generality of subsection (1), the Minister may make regulations in respect of all or any of the following purposes:

(a) to prescribe the names, symbols, definitions and usage of the derived units of measurement;

(b) to prescribe the names, symbols, definitions and usage of multiples and submultiples to be used in conjunction with the base and derived units of measurement;

(c) to prescribe the use of the units as specified in the Second Schedule;

(d) to prescribe the requirements and interpretation of measurement traceability;

(e) to prescribe the requirements for the approval of a measuring instrument;

(f) to prescribe in respect of an organization appointed under subsection 12(1)—

(i) the duties and powers of the organization;

(ii) the terms and conditions of the organization; and

(iii) any other matters relating to the appointment of the organization;

(g) to prescribe fees and other charges;

(h) to provide generally for the performance of the functions, the exercise of the powers and the discharge of the duties of the National Measurement Standards Laboratory under the provisions of this Act.

Power to amend Schedule

15. The Minister may, with the advice of the Council, by order published in the *Gazette*, amend, vary, alter, add to, delete from or substitute for the Schedule to this Act, and the Schedule as so amended, varied, altered, added to, deleted from or substituted for, shall come into force and effect and shall be deemed to be an integral part of this Act as from the date of such publication, or from such earlier or later date as may be specified in the order.

Savings

16. (1) Nothing in this Act shall affect the validity of any measurement made under any law or by any equipment, device, instrument or machine which has been prescribed as a measuring instrument under any law before the coming into operation of this Act.

(2) Where on the date of coming into operation of this Act proceedings involving measurement had commenced or are pending, the proceedings shall continue under the Act under which the proceedings were instituted as if this Act had not been enacted.

FIRST SCHEDULE

[Subsection 4(2)]

International System of Units (SI)

PART 1

BASE UNITS

Base units, Names and Symbols:

Quantity	*Unit and Symbol*	*Definition*
length	metre (m)	The metre is the length of the path traveled by light in vacuum during a time interval of 1/299 792 458 of a second.
mass	kilogram (kg)	The kilogram is the unit of mass; it is equal to the mass of the international prototype of the kilogram.
time interval	second (s)	The second is the duration of 9 192 631 770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the cesium 133 atom.
electric current	ampere (A)	The ampere is that constant current which, if maintained in two straight parallel conductors of infinite length of negligible circular cross-section and placed 1 metre apart in vacuum, would produce between these conductors a force equal to 2×10^{-7} newton per metre of length.
thermo dynamic temperature	kelvin (K)	The kelvin is the fraction 1/273.16 of the thermodynamic temperature of the triple point of water.

Quantity	*Unit and Symbol*	*Definition*
luminous intensity	candela (cd)	The candela is the luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 540 x 10^{12} hertz and that has a radiant intensity in that direction of (1/683) watt per steradian.
amount of substance	mole (mol)	1. The mole is the amount of substance of a system which contains as many elementary entities as there are atoms in 0.012 kilogram of carbon 12. 2. When the mole is used, the elementary entities must be specified and may be atoms, molecules, ions, electrons, other particles or specified groups of such particles.

PART 2

DERIVED SI UNITS

1. Derived SI units, Names and Symbols:

Quantity	*Name*	*Symbol*	*Expressed in terms of SI base units*	*Expressed in terms of other SI units*
1.1 Space and Time				
plane angle	radian	rad	$m \cdot m^{-1}=1$	
solid angle	steradian	sr	$m^2 \cdot m^{-2}=1$	
Area	square metre	m^2	m^2	
Volume	cubic metre	m^3	m^3	
speed, velocity	metre per second	m/s	$m \cdot s^{-1}$	
acceleration	metre per second squared	m/s^2	$m \cdot s^{-2}$	
wave number	reciprocal metre	m^{-1}	m^{-1}	
specific volume	cubic metre per kilogram	m^3/kg	$m^3 \cdot kg^{-1}$	

Quantity	*Name*	*Symbol*	*Expressed in terms of SI base units*	*Expressed in terms of other SI units*
Frequency	hertz	Hz	s^{-1}	
angular velocity	radian per second	rad/s	$m \cdot m^{-1} \cdot s^{-1} = s^{-1}$	
angular acceleration	radian per second squared	rad/s^2	$m \cdot m^{-1} \cdot s^{-2} = s^{-2}$	
1.2 Mechanics				
lineic mass, linear density	kilogram per metre	kg/m	$kg \cdot m^{-1}$	
areic mass, surface density	kilogram per square metre	kg/m^2	$kg \cdot m^{-2}$	
density, mass density	kilogram per cubic metre	kg/m^3	$kg \cdot m^{-3}$	
Force	newton	N	$m \cdot kg \cdot s^{-2}$	
pressure, stress	pascal	Pa	$m^{-1} \cdot kg \cdot s^{-2}$	N/m^2
work, energy, quantity of heat	joule	J	$m^2 \cdot kg \cdot s^{-2}$	$N \cdot m$
power, radiant flux, energy flow rate, heat flow rate	watt	W	$m^2 \cdot kg \cdot s^{-3}$	J/s
dynamic viscosity	pascal second	$Pa \cdot s$	$m^{-1} \cdot kg \cdot s^{-1}$	
kinetic viscosity	metre squared per second	m^2/s	$m^2 \cdot s^{-1}$	
moment of force	newton metre	$N \cdot m$	$m^2 \cdot kg \cdot s^{-2}$	
surface tension	newton per metre	N/m	$kg \cdot s^{-2}$	
volume flow rate	cubic metre per second	m^3/s	$m^3 \cdot s^{-1}$	
mass flow rate	kilogram per second	kg/s	$kg \cdot s^{-1}$	
1.3 Electricity and Magnetism				
current density	ampere per square metre	A/m^2	$A \cdot m^{-2}$	
electric charge, quantity of electricity	coulomb	C	$s \cdot A$	
electric potential, potential difference, electric tension, electromotive force	volt	V	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-1}$	W/A
electric field strength	volt per metre	V/m	$m \cdot kg \cdot s^{-3} \cdot A^{-1}$	

Quantity	*Name*	*Symbol*	*Expressed in terms of SI base units*	*Expressed in terms of other SI units*
electric charge density	coulomb per cubic metre	C/m^3	$m^{-3} \cdot s \cdot A$	
electric flux density	coulomb per square metre	C/m^{-2}	$m^{-2} \cdot s \cdot A$	
electric resistance	ohm	Ω	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-2}$	V/A
capacitance	farad	F	$m^{-2} \cdot kg^{-1} \cdot s^4 \cdot A^2$	C/V
electric conductance	siemens	S	$m^{-2} \cdot kg^{-1} \cdot s^3 \cdot A^2$	A/V
magnetic flux	weber	Wb	$m^2 \cdot kg \cdot s^{-2} \cdot A^{-1}$	$V \cdot s$
magnetic flux density	tesla	T	$kg \cdot s^{-2} \cdot A^{-1}$	Wb/m^2
magnetic field strength	ampere per metre	A/m	$A \cdot m^{-1}$	
Inductance	henry	H	$m^2 \cdot kg \cdot s^{-2} \cdot A^{-2}$	Wb/A
permeability	henry per metre	H/m	$m \cdot kg \cdot s^{-2} \cdot A^{-2}$	
Permittivity	farad per metre	F/m	$m^{-3} \cdot kg^{-1} \cdot s^4 \cdot A^2$	
1.4 Heat				
celsius temperature	degree celsius	°C	K	
heat flux density, irradiance	watt per square metre	W/m^2	$kg \cdot s^{-3}$	
heat capacity, entropy	joule per kelvin	J/K	$m^2 \cdot kg \cdot s^{-2} \cdot K^{-1}$	
specific heat capacity, specific entropy, massic heat capacity	joule per kilogram kelvin	$J/(kg \cdot K)$	$m^2 \cdot s^{-2} \cdot K^{-1}$	
specific energy	joule per kilogram	J/kg	$m^2 \cdot s^{-2}$	
thermal conductivity	watt per metre kelvin	$W/(m \cdot K)$	$m \cdot kg \cdot s^{-3} \cdot K^{-1}$	
energy density	joule per cubic metre	J/m^3	$m^{-1} \cdot kg \cdot s^{-2}$	
1.5 Physical Chemistry and Molecular Physics				
concentration (of amount of substance)	mole per cubic metre	mol/m^3	$mol \cdot m^{-3}$	
molar energy	joule per mole	J/mol	$m^2 \cdot kg \cdot s^{-2} \cdot mol^{-1}$	
molar entropy, molar heat capacity	joule per mole kelvin	$J/(mol \cdot K)$	$m^2 \cdot kg \cdot s^{-2} K^{-1} \cdot mol^{-1}$	

Quantity	*Name*	*Symbol*	*Expressed in terms of SI base units*	*Expressed in terms of other SI units*
1.6 Radiation and Light				
Luminance	candela per square metre	cd/m^2	$cd \cdot m^{-2}$	
refractive index	(the number) one	1	1	
luminous flux	lumen	lm	cd	$cd \cdot sr$
Illuminance	lux	lx	$m^{-2} \cdot cd$	lm/m^2
radiant intensity	watt per steradian	W/sr	$m^2 \cdot kg \cdot s^{-3}$	
Radiance	watt per square metre steradian	$W/(m^2 \cdot sr)$	$kg \cdot s^{-3}$	
1.7 Ionizing Radiations				
activity (of a radionuclide)	becquerel	Bq	s^{-1}	
absorbed dose, specific energy (imparted), kerma	gray	Gy	$m^2 \cdot s^{-2}$	J/kg
dose equivalent, ambient dose equivalent, directional dose equivalent, personal dose equivalent, organ equivalent dose	sievert	Sv	$m^2 \cdot s^{-2}$	J/kg
exposure (x and γ rays)	coulomb per kilogram	C/kg	$kg^{-1} \cdot s \cdot A$	
absorbed dose rate	gray per second	Gy/s	$m^2 \cdot s^{-3}$	

2. The derived units shall include any other units which may be expressed algebraically in terms of SI base units or in terms of a combination of the SI base units with other derived units by means of mathematical symbols of multiplication and division.

PART 3

MULTIPLES AND SUBMULTIPLES OF THE SI UNITS

The names and symbols of the multiples and submultiples of the SI units:

Factor	*Prefix*	*Symbol*
10^{24}	yotta	Y
10^{21}	zetta	Z
10^{18}	exa	E
10^{15}	peta	P
10^{12}	tera	T
10^{9}	giga	G
10^{6}	mega	M
10^{3}	kilo	k
10^{2}	hecto	h
10^{1}	deca	da
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	femto	f
10^{-18}	atto	a
10^{-21}	zepto	z
10^{-24}	yocto	y

SECOND SCHEDULE

[Subsection 4(3)]

Other permissible units of measurement

PART 1

Units accepted internationally for use with the International System of Units (SI):

Name	*Symbol*	*Value in SI units*
minute	min	1 min = 60 s
hour	h	1 h = 60 min = 3600 s
day	d	1 d = 24 h = 86 400 s
degree	°	1^{o} = (л/180) rad
minute	'	1' = (1/60)° = (л /10 800) rad
second	"	1" = (1/60)' = (л /648 000) rad
litre	l, L	1 l = 1 dm^3 = 10^{-3} m^3
tonne	t	1 t = 10^3 kg
neper	Np	1 Np = 1
bel	B	1 B = (1/2) In 10 (Np)

PART 2

Units accepted for use with the International System of Units (SI), whose values in SI units are obtained experimentally—

Name	*Symbol*	*Value in SI Units*	*Note*
electronvolt	eV	1 eV = 1.602 17653 (14) x 10^{-19} J	*(a)*
unified atomic mass unit	u	1 u = 1.660 53886 (28) x $(10)^{-27}$ kg	*(b)*
astronomical unit	ua	1 ua = 1.495 978 706 91 (6) x 10^{11} m	*(c)*

(a) The electronvolt is the kinetic energy acquired by an electron in passing through a potential difference of 1 V in vacuum.

(b) The unified atomic mass unit is equal to 1/12 of the mass of an unbound atom of the nuclide ^{12}C, at rest and in its ground state. The unified atomic mass unit is also called the dalton (Da), in the field of biochemistry.

(c) The astronomical unit is a unit of length; it is approximately equal to the mean Earth-Sun distance. Its value is such that, when used to describe the motion of bodies in the solar system, the heliocentric gravitational constant is $(0.017\ 207\ 098\ 95)^2$ $ua^3 \cdot d^{-2}$.

PART 3

Units of measurement and denominations which may be used temporarily:

Name	*Symbol*	*Value*
1. Area		
barn Its use is authorized only in atomic and nuclear physics.	b	1 b = 100 fm^2 = 10^{-28} m^2
2. Dynamic viscosity		
poise	P	1 P = 0.1 Pa · s = 10^{-1} Pa · s
centipoises	cP	1 cP = 1 mPa · s = 10^{-3} Pa · s
3. Kinematic viscosity		
stokes	St	1 St = 100 mm^2/s = 10^{-4} m^2/s
centistokes	cSt	1 cSt = 1 mm^2/s = 10^{-6} m^2/s
4. Activity (of a radioactive source)		
curie and the multiples and sub-multiples of the curie	Ci	1 Ci = 37 GBq = 3.7 x 10^{10} Bq
5. Absorbed dose		
rad and the multiples and submultiples of the rad	rad	1 rad = 0.01 Gy = 10^{-2} Gy
6. Exposure		
röntgen and the multiples and submultiples of the röntgen	R	1 R = 0.258 mC/kg = 2.58 x 10^{-4} C/kg
7. Pressure		
millimetre of mercury (Its use is authorized only in specialized fields)	mmHg	1 mmHg = 133.322 Pa
bar and the multiples and submultiples of the bar	bar	1 bar = 100 kPa = 10^5 Pa
8. Plane angle		
revolution (turn)	R	1 r = 2л rad
9. Vergency of optical systems		
diopter		1 diopter = 1 m^{-1}
10. Area of farmland and estates		
are	a	1 a = 100 m^2 = 10^2 m^2
hectare	ha	1 ha = 0.01 km^2 = 10^4 m^2

Name	*Symbol*	*Value*
11. Metric carat		
metric carat (Its use is authorized only for indicating the mass of pearls and precious stones)	ct	1 ct = 0.2 g = 2 x 10^{-4} kg
12. Length		
ångström	Å	1 Å = 0.1 nm = 10^{-10} m
nautical mile		1 nautical mile = 1852 m
knot		1 nautical mile per hour = (1852/3600) m/s
13. Volume (forestry management and timber trade)		
stere	st	1 st = 1 m^3
14. Mass		
quintal	q	1 q = 100 kg = 10^2 kg
15. Force		
kilogram-force	kgf	1 kgf = 1 kp = 9.806 65 N
kilopond and its decimal multiples and submultiples	kp	
16. Pressure		
standard atmosphere	atm	1 atm = 101.325 kPa = 1.013 25 x 10^5 Pa
technical atmosphere	at	1 at = 98.066 5 kPa = 0.980 665 x 10^5 Pa
torr	Torr	1 Torr = $\frac{101\ 325}{760}$ Pa
metre of water	mH_2O	1 mH_2O = 9.806 65 kPa = 9.806 65 x 10^3 Pa
17. Work, energy, quantity of heat		
kilogram force metre = kilopond metre	kgf · m kp · m	1kgf · m=1kp · m=9.80665J
calorie and its decimal multiples and submultiples	cal	1 cal = 4.186 8 J
18. Power		
metric horsepower (cheval-vapeur)		1 metric horsepower = 0.735 498 75 kW=735.498 75W
19. Luminance		
stilb	sb	1 sb = 10 kcd/m^2 = 10^4 cd/m^2

THIRD SCHEDULE

[Subsection 13(4)]

Meetings

1. (1) The Council shall meet at least once a year at such time and place as may be appointed by the Chairman.

(2) Notice in writing of a meeting shall be given to the members of the Council not less than fourteen days before the date of the meeting.

(3) The Chairman shall preside at every meeting of the Council but in his absence, the Deputy Chairman, or in the absence of the Chairman and the Deputy Chairman, a member of the Council elected by the members of the Council present shall preside over the meeting.

(4) Five members of the Council shall constitute a quorum for any meeting of the Council.

(5) Every member of the Council present is entitled to one vote.

(6) If on any question to be determined by the Council there is an equality of votes, the person presiding over that meeting shall have a casting vote.

Tenure of office

2. A member of the Council shall hold office for a term not exceeding three years and is eligible for reappointment.

Revocation of appointment and resignation

3. (1) The Minister may, at any time, revoke the appointment of any member of the Council without assigning any reason for the revocation.

(2) A member of the Council may, at any time, resign from his appointment by giving a notice in writing to the Minister.

Vacation of office

4. The office of a member of the Council shall be vacated—

(a) if he dies;

(b) if there has been proved against him, or he has been convicted on a charge in respect of—

(i) an offence involving fraud, dishonesty or moral turpitude;

(ii) an offence under any law relating to corruption; or

(iii) any other offence punishable with imprisonment, in itself only or in addition to or in lieu of a fine, for more than two years;

(c) if he becomes a bankrupt;

(d) if he is of unsound mind or is otherwise incapable of discharging his duties;

(e) in the case of the Chairman, if he absent himself from three consecutive meetings of the Council without leave of the Minister;

(f) in the case of a member of the Council other than the Chairman, if he absents himself from three consecutive meetings of the Council without leave of the Chairman;

(g) if his appointment is revoked by the Minister; or

(h) if he resigns his office and his resignation is accepted by the Minister.

Allowance

5. Members of the Council may be paid such allowance as the Minister may determine.

Council may invite others to meetings

6. (1) The Council may invite any person to attend any meeting or discussion of the Council for the purpose of advising it on any matter under discussion, but any person so attending shall have no right to vote at the meeting or discussion.

(2) A person invited under subparagraph (1) may be paid such allowance or fee as the Council may determine.

Minutes

7. (1) The Council shall cause minutes of all its meetings to be maintained and kept in a proper form.

(2) Any minutes made of a meeting of the Council shall, if duly signed, be admissible in evidence in all legal proceedings without further proof.

(3) Every meeting of the Council in respect of the proceedings of which minutes have been made in accordance with subparagraphs (1) and (2) shall be deemed to have been duly convened and held and all members thereat to have been duly qualified to act.

Procedure

8. Subject to this Act, the Council shall determine its own procedure.

Member to devote time to business of Council

9. Every member of the Council shall devote such time to the business of the Council as is necessary to discharge his duties effectively.

Secretariat of Council

10. The Secretariat of the Council shall be the National Measurement Standards Laboratory.

LAWS OF MALAYSIA

Act 675

NATIONAL MEASUREMENT SYSTEM ACT 2007

LIST OF AMENDMENTS

Amending law	Short title	In force from
– NIL –		

LAWS OF MALAYSIA

Act 675

NATIONAL MEASUREMENT SYSTEM ACT 2007

LIST OF SECTIONS AMENDED

Section	Amending authority	In force from
–NIL –		