

EXPLO National Manual for Projects Management

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Units of Measurement



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Units of Measurement

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1.0 PURPOSE

The purpose of this chapter to define for the Entity the use of base, supplementary and derived units of the measurements for use on its Projects.

2.0 SCOPE

The base, supplementary and derived units of measurements defined in this chapter shall be used on Entity's all projects in the Kingdom of Saudi Arabia.

3.0 DEFINITIONS

Terms	Definitions
ENTITY	A Saudi Government organization which is responsible for the delivery of government funded infrastructure construction projects.
SI	International System of Units

4.0 REFERENCES

None.

5.0 ROLES AND RESPONSIBILITIES

Entity shall implement the guidelines outlined in this chapter on all its projects. Changes to these guidelines will require concurrence of EXPRO before use on Projects.

6.0 UNITS OF MEASUREMENTS

The Entity shall use the National Institute of Standards and Technology's (NIST) Guide for the Use of the International System of Units (SI) on all its projects. The directives contained herein have been compiled for the purpose of establishing and defining Standards for the utilization, appearance, and conversion of units to be used for the Entity's Projects. If required the Entity can use Imperial equivalents in parenthesis.

SI base, supplementary, and derived units of measurement occurring in this Chapter include, but are not limited to, the following:

6.1 SI Base Units

No.	Unit	Symbol	Quantity
a.	Meter (metre)	m	Length
b.	Kilogram	kg	Mass
c.	Second	s	Time
d.	Ampere	A	Electric current
e.	Kelvin	K	Thermodynamic temperature
f.	Mole	mol	Amount of substance
g.	Candela	cd	Luminous intensity
h.	Celsius (digress)	(°C)	temperature scale

6.2 SI Supplementary Units

No.	Unit	Symbol	Quantity
a.	Radian	rad	Plane angle (2D angle)
b.	Steradian	sr	Solid angle (3D angle)



Units of Measurement

6.3 SI Derived Units

No.	Unit	Symbol	In SI Units	Quantity
Mechanics				
a.	Pascal	Pa	$\text{kg}\cdot\text{m}^{-1}\cdot\text{s}^{-2}$	Pressure, Stress
b.	Joule	J	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-2}$	Energy, Work, Heat
c.	Watt	W	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-3}$	Power
d.	Newton	N	$\text{kg}\cdot\text{m}\cdot\text{s}^{-2}$	Force, Weight
Electromagnetism				
e.	Tesla	T	$\text{kg}\cdot\text{s}^{-2}\cdot\text{A}^{-1}$	Magnetic Field
f.	Henry	H	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-2}\cdot\text{A}^{-2}$	Inductance
g.	Coulomb	C	A·s	Electric Charge
h.	Volt	V	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-3}\cdot\text{A}^{-1}$	Voltage
i.	Farad	F	$\text{kg}^{-1}\cdot\text{m}^{-2}\cdot\text{s}^4\cdot\text{A}^2$	Electric Capacitance
j.	Siemens	S	$\text{kg}^{-1}\cdot\text{m}^{-2}\cdot\text{s}^3\cdot\text{A}^2$	Electrical Conductance
k.	Weber	Wb	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-2}\cdot\text{A}^{-1}$	Magnetic Flux
l.	Ohm	Ω	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-3}\cdot\text{A}^{-3}$	Electric Resistance
Optics				
m.	Lux	lx	$\text{cd}\cdot\text{sr}\cdot\text{m}^{-2}$	Illuminance
n.	Lumen	lm	cd·sr	Luminous Flux
Radioactivity				
o.	Becquerel	Bq	s^{-1}	Radioactivity
p.	Gray	Gy	$\text{m}^2\cdot\text{s}^{-1}$	Absorbed Dose
q.	Sievert	Sv	$\text{m}^2\cdot\text{s}^{-1}$	Equivalent Dose
Other				
r.	Hertz	Hz	s^{-1}	Frequency
s.	Katal	kat	$\text{mol}\cdot\text{s}^{-1}$	Catalytic Activity