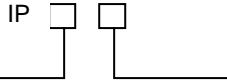


IP Rating Chart

Protection provided by enclosures for electrical equipment is indicated by the IP Code, basically by the two characteristic numerals.

First Numeral

Protection against the ingress of solid particles



Second Numeral

Protection against harmful ingress of water

First Numeral Protection against the ingress of solid particles		Second Numeral Protection against harmful ingress of water	
IP	Requirements	IP	Requirements
0	No protection	0	No protection
1	Full penetration of 50mm diameter sphere not allowed. Contract with hazardous parts not permitted.	1	Protected against vertically falling drops of water. Limited ingress permitted.
2	Full penetration of 12.5mm diameter sphere not allowed. The jointed test finger shall have adequate clearance from hazardous parts.	2	Protected against vertically falling drops of water with the enclosure tilted 15° from the vertical. Limited ingress permitted.
3	The access probe of 2.5mm diameter shall not penetrate.	3	Protected against sprays to 60° from the vertical. Limited ingress permitted.
4	The access probe of 1.0mm diameter shall not penetrate.	4	Protected against water splashed from all directions. Limited ingress permitted.
5	Limited ingress of dust permitted (no harmful deposit)	5	Protected against jets of water. Limited ingress permitted.
6	Totally protected against the ingress of dust	6	Protected against strong jets of water. Limited ingress permitted.
7		7	Protected against the effects of immersion between 15cm and 1m.
8		8	Protected against long periods of immersion under pressure.

Nema Rating Chart

Nema ratings have some correlation to IP ratings however IP ratings relate to the protection against dust and moisture, where as Nema ratings have more stringent testing requirements to verify protection from external ice, corrosive materials, oil immersion etc.

Nema ratings are rarely applied to mobile devices and are mainly applied to fixed enclosures e.g. a fixed electrical box mounted outside, or a fixed enclosure used to house a wireless access point.

Consult the internet for the full Nema definitions the table below provides a general read across.

Nema Rating	IP Equivalent
1	10
2	11
3	54
3R	14
3S	54
4	56
4X	56
5	52
6	67
6P	67
12 & 12K	52
13	54

* Most enclosures rated for use in an outside environment include a Nema 4 rating.