

Ingress Protection Ratings

The IP Code, or Ingress Protection code, IEC standard 60529, sometimes interpreted as International Protection marketing, classifies and rates the degree of protection provided by mechanical casings and electrical enclosures against intrusion, dust, accidental contact, and water. It is published by the International Electrotechnical Commission (IEC). The equivalent European standard is EN 60529.

The standard aims to provide users more detailed information than vague marketing terms such as waterproof. For example, a cellular phone rated at IP68 is "dust resistant" and can be "immersed in 1.5 meters of freshwater for up to 30 minutes".

The digits indicate conformity with the conditions summarized in the tables below. The digit 0 is used where no protection is provided. The digit is replaced with the letter X when insufficient data has been gathered to assign a protection level.

	Protection against solid objects		Protection against fluids
1st No.	Description	2nd No.	Description
0	No protection	0	No protection
1	Protection against solid objects over 50mm e.g. hands	1	Protection against vertically falling water drops
2	Protection against solid objects over 12mm e.g.fingers	2	Protection against direct water spray up to 15 degrees
3	Protection against solid objects over 2.5mm e.g.tools	3	Protection against direct water spray up to 60 degrees
4	Protection against solid objects over 1mm e.g.wires	4	Protection against water spray from all directions
5	Protection against dust	5	Protection against low water pressure in all directions
6	Total protection against dust	6	Total protection against strong water jets
		7	Protection against immersions between 15cm-1m
		8	Protection against immersion periods under pressure