

Grades of Protection for Enclosure (IP ratings)

The grades of protection for enclosures containing apparatus are defined in BS 4752. The type of protection is defined by two digits, the first relating to accessibility and the second to environmental protection. The letters IP precedes the two numbers.

First Number	Degree of Protection	Second number	Degree of Protection
0	No protection of persons against contact with live or moving parts inside the enclosure	0	No protection
1	Protection against accidental or inadvertent contact with live or moving parts inside the enclosure by a large surface of the human body, for example, a hand, but not protection against deliberate access to such parts. Protection against ingress of large solid foreign bodies.	1	Protection against drops of condensed water. Drops of condensed water falling on the enclosure shall have no harmful effect.
2	Protection against contact with live or moving parts inside the enclosure by fingers. Protection against ingress of medium size solid foreign bodies.	2	Protection against drops of liquid. Drops of falling liquid shall have no harmful effect when the enclosure is tilted at any angle up to 15° from the vertical.
3	Protection against contact with live or moving parts inside the enclosure by tools, wires, or such objects of thickness greater than 2.5mm. Protection against ingress of small solid foreign bodies.	3	Protection against rain. Water falling in rain at an angle up to 60° with respect to the vertical shall have no harmful effect.
4	Protection against contact with live or moving parts inside the enclosure by tools, wires, or such objects of thickness greater than 1mm. Protection against ingress of small foreign bodies.	4	Protection against splashing. Liquid splashed from any direction shall have no harmful effect.
5	Complete protection against contact with live or moving parts inside the enclosure. Protection against harmful deposits of dust. The ingress of dust is not totally prevented, but dust cannot enter in any amount sufficient to interfere with satisfactory operation of the equipment enclosed.	5	Protection against water jets. Water projected by a nozzle from any direction under stated conditions shall have no harmful effect.
6	Complete protection against contact with live or moving parts inside enclosure. Protection against ingress of dust.	6	Protection against conditions on ships decks (deck watertight equipment). Water from heavy seas shall not enter the enclosure under prescribed conditions.
		7	Protection against immersion in water. It must not be possible for water to enter the enclosure under stated conditions of pressure and time.
		8	Protection against indefinite immersion in water under specified pressure. It must not be possible for water to enter the enclosure.