

GUIDE TO INGRESS PROTECTION (IP) CODES

BS EN 60529

The IP Code defined in international standard IEC 60529 classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact, and water in electrical enclosures. It consists of the letters IP (for "International Protection rating", sometimes also interpreted as "Ingress Protection rating") followed by two digits and an optional letter. The standard aims to provide users more detailed information than vague marketing terms such as "waterproof".

First number (Protection against solid objects)	
0	No protection
1	Protected against solids objects over 50mm diameter (e.g. accidental touch by hands)
2	Protected against solids objects over 12mm diameter (e.g. fingers)
3	Protected against solids objects over 2.5mm diameter (e.g. tools and wires)
4	Protected against solids objects over 1mm diameter (e.g. tools, wires and small wires)
5	Protected against dust - limited ingress (no harmful deposit)
6	Totally protected against dust

Second number (Protection against liquids)	
0	No protection
1	Protected against vertically falling drops of water
2	Protected against vertically falling drops of water with enclosure tilted up to 15° from the vertical
3	Protected against sprays of water up to 60° from the vertical
4	Protected against water splashed from all directions - limited ingress permitted
5	Protected against low pressure jets of water from all directions
6	Protected against strong jets of water from all directions (e.g. for use on ship decks)
7	Protected against the effects of temporary immersion between 15cm and 1m
8	Protected against long periods of immersion under pressure

Example:

IP65 Equipment is dust-tight and protected against low pressure water jets