

The IP rating system provides a means of classifying the degrees of protection from dust, water and impact afforded by electrical equipment and enclosures. The system is recognised in most European countries and is set out in a number of British and European standards. These include BS5490:1977 (IEC529:1976) Classification of Degrees of Protection Provided by Enclosures, BS5420:1977

(IEC 144:1963) Specification for Degrees of Protection of Enclosures of Switchgear and Control Gear for Voltages up to and including 1000V a.c. and 1200V d.c.

Details of a third IP numeral are also shown. Whilst not specified by the British Standards Institute, this figure is used in corresponding international standards, to indicate degrees of resistances to impact.

FIRST NUMBER Protection against solid objects		SECOND NUMBER Protection against liquids		THIRD NUMBER Protection against mechanical impacts	
IP	TESTS	IP	TESTS	IP	TESTS
0	no protection	0	no protection	0	no protection
1	protected against solid objects over 50 mm, eg accidental touch by hands.	1	protected against vertically falling drops of water.	1	impact 0,225 joule
2	protected against solid objects over 12 mm, eg fingers.	2	protected against direct sprays of water up to 15° from the vertical.	2	impact 0,375 joule
3	protected against solid objects over 2.5 mm (tools + wires).	3	protected against sprays to 60° from the vertical.	3	impact 0,50 joule
4	protected against solid objects over 1 mm (tools, wires + small wires).	4	protected against water sprayed from all directions – limited ingress permitted.	5	impact 2,00 joule
5	protected against dust – limited ingress (no harmful deposit).	5	protected against low pressure jets of water from all directions – limited ingress permitted.	7	impact 6,00 joule
6	totally protected against dust.	6	protected against strong jets of water, eg for use on shipdecks – limited ingress permitted.	9	impact 20,000 joule
		7	protected against the effects of immersion between 15cm and 1m.		
		8	protected against long periods of immersion under pressure.		