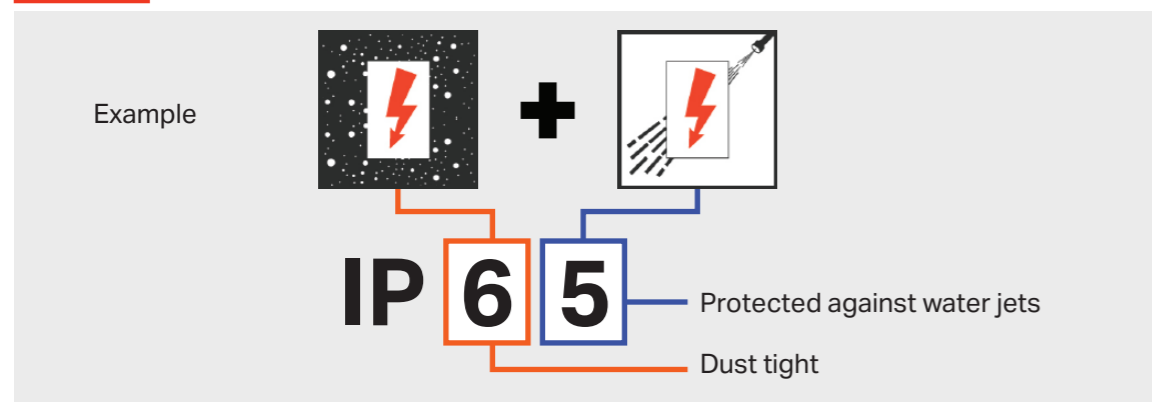


1st Numeral - Solid Foreign Objects

0		No protection against contact and ingress of objects.
1		Protection against solid foreign objects of ≥ 50 mm diameter. Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part.
2		Protection against solid foreign objects of ≥ 12.5 mm diameter. e.g: fingers or similar objects.
3		Protection against solid foreign objects ≥ 2.5 mm diameter. e.g: tools, thick wires, etc.
4		Protection against solid foreign objects ≥ 1 mm diameter. e.g: most wires, slender screws, large ants etc.
5		Dust protected. Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment.
6		Dust tight.

2nd Numeral - Water

0		No protection against ingress of water.
1		Protected against vertically falling drops. <i>Test:</i> Vertically falling drops shall have no harmful effects on the specimen when mounted in an upright position onto a turntable and rotated at 1 RPM. Test duration: 10 minutes. A drip volume of 1.0 ± 0.5 mm/min.
2		Protected against vertically falling drops when enclosure is tilted up to 15°. <i>Test:</i> Vertically falling drops shall have no harmful effects when enclosure is tilted up to 15° either side of its normal position. A total of four positions are tested within the two axis. Test duration: 2.5 minutes for every direction of tilt (10 minutes total), a drip volume of 3.0 ± 0.5 mm/min.
3		Protected against spraying water. <i>Test:</i> Water falling as a spray at any angle up to 60° from the vertical shall have no harmful effect, utilising either: Method A (Test duration 10 mins): An oscillating fixture is utilised for 5 minutes, then repeated with the specimen rotated horizontally by 90° for the second 5-minutes of test. Water volume: 0.07 litres per minute (0.00026 impgal/s) per hole in the spray head. Method B (Test duration 10 mins): A spray nozzle with a Baffle shield in place for 1 minute per square meter or 5 minutes minimum. Water volume: 10 litres per minute (0.037 impgal/s), pressure: 50–150 kPa (7.3–21.8 psi).
4		Protected against splashing water. Similar to IPX3 Tests. Method A (Test duration 10 Mins): In this test, the equipment used and the duration of the test are similar to the ones mentioned in the above IPX3. But the difference comes in the arc section angle where this test requires a 90° arc section on both sides of the center of the pendulum pipe instead of the 60 degrees used above. Also, the oscillating tube oscillates 180° vertically on both sides totaling to about 360°. And each swing (2x360°) should last about 12s. Method B: Same X3 with Baffle shield removed.
5		Protected against water jets. Water projected in jets against the enclosure from any direction shall have no harmful effects. <i>Test:</i> Place the sample 2.5m to 3m away from a spray nozzle with an inner diameter of 6.3 mm and hit with a steady water flow of 12.5l per minute (750ltrs per hour). Test duration: 1 minute per square meter or at least 3 minutes. Pressure: 30 kPa (4.4 psi), distance of 3 meters.
6		Protected against powerful water jets. Water projected in powerful jets against the enclosure from any direction shall have no harmful effects. <i>Test:</i> Place the sample 2.5m to 3m away from a spray nozzle with an inner diameter of 12.5mm and hit with a steady water flow of 100l per minute (6000 ltrs per hour) Test duration: 1 minute per square meter or at least 3 minutes. Pressure: 100 kPa (15 psi), distance of 3 meters.
7		Protected against the effects of temporary immersion in water. (Note 1) unsuitable for exposure to hosing or water jets. Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water under standardised conditions of pressure and time. Test duration: 30 minutes. Tested with the lowest point of the enclosure 1 meter below the surface of the water. Pressure: 9.80 kPa (1.5 psi) at a depth of 1 meter.
8		Protected against the effects of temporary immersion in water. (Note 1) unsuitable for exposure to hosing or water jets. Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water in conditions which shall be agreed between the Manufacturer & User but which are more severe than for IPX7. Generally, 30 minutes duration at 3 meters.



*NB IP65, 66 & 67 are considered waterproof under their appropriate test conditions. Neither are suitable for washing with direct contact from garden hoses with nozzles or with high pressure washers (Gerni etc) as the associated water pressure would be higher than the test conditions.