IEC 60529 Degrees of Protection Provided by Enclosures (IP Code) – IPX5 IPX6 Testing Equipment

Description

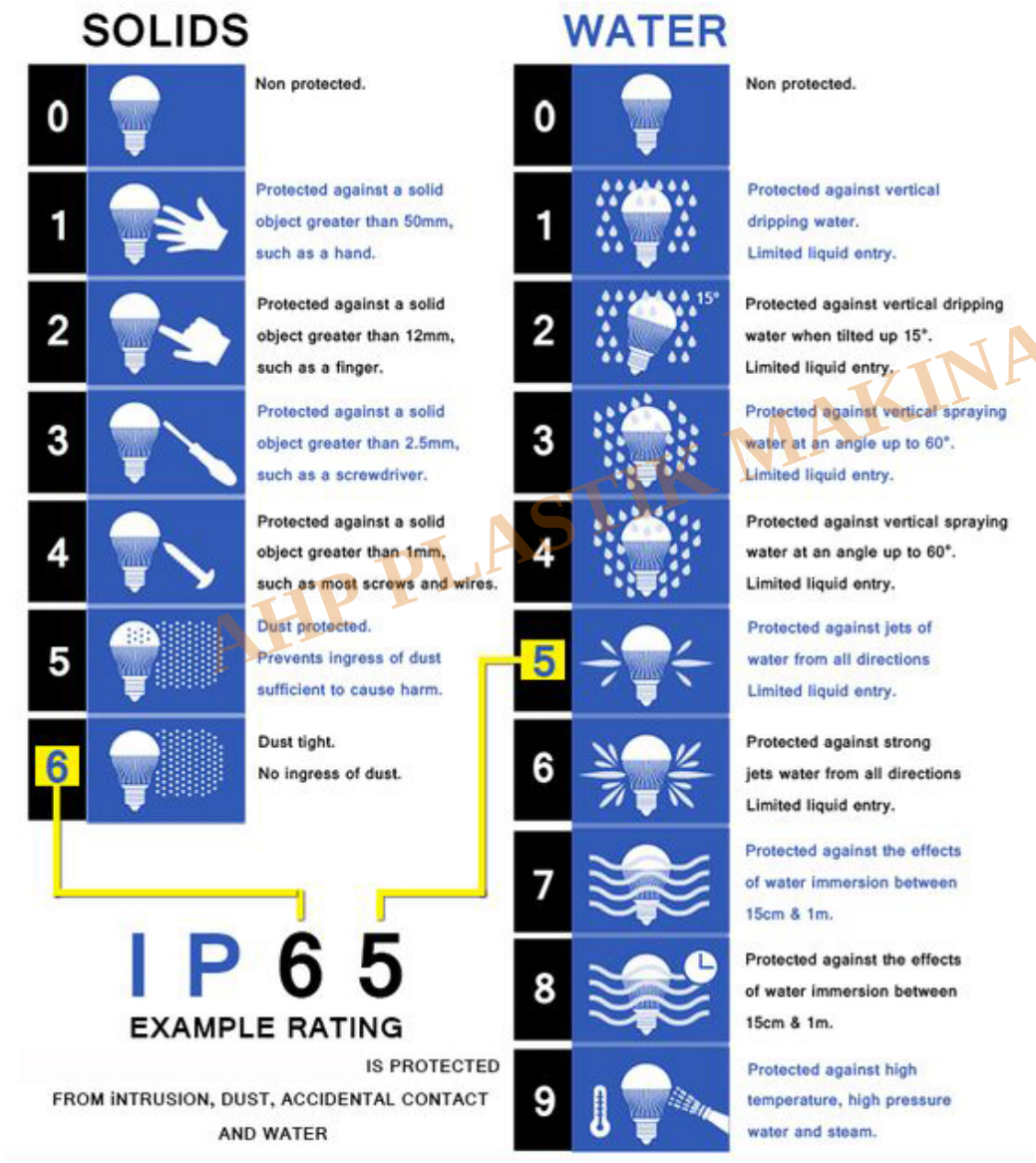


Table 8 – Test means and main test conditions for the tests for protection against water

Second characteristic numeral	Test means	Water flow rate	Duration of test	Test conditions, see
0	No test required	–	–	–
1	Drip box Figure 3 Enclosure on turntable	$1^{+0,5}_{0}$ mm/min	10 min	14.2.1
2	Drip box Figure 3 Enclosure in 4 fixed positions of 15° tilt	$3^{+0,5}_{0}$ mm/min	2,5 min for each position of tilt	14.2.2
3	Oscillating tube Figure 4 Spray ± 60° from vertical, distance max. 200 mm or Spray nozzle Figure 5 Spray ± 60° from vertical	0,07 l/min ± 5 % per hole, multiplied by number of holes 10 l/min ± 5 %	10 min 1 min/m² at least 5 min	14.2.3 a) 14.2.3 b)
4	As for numeral 3 Spray ± 180° from vertical	As for numeral 3		14.2.4
5	Water jet hose nozzle Figure 6 Nozzle 6,3 mm diameter, distance 2,5 m to 3 m	12,5 l/min ± 5 %	1 min/m² at least 3 min	14.2.5
6	Water jet hose nozzle Figure 6 Nozzle 12,5 mm diameter, distance 2,5 m to 3 m	100 l/min ± 5 %	1 min/m² at least 3 min	14.2.6
7	Immersion tank Water-level on enclosure: 0,15 m above top 1 m above bottom	–	30 min	14.2.7
8	Immersion tank Water-level: by agreement	–	by agreement	14.2.8
9	Fan jet nozzle Figure 7 Test of small enclosure on turntable Figure 12 Turntable speed (5 ± 1) r/min Spray at 0°, 30°, 60°, 90° Or Test of large enclosures as per intended use Spray from all practical directions Distance (175 ± 25) mm	(15 ± 1) l/min	30 s per position 1 min/m2 at least 3 min	14.2.9 a) 14.2.9 b)

14.2 Test conditions

During the tests for IPXl to IPX6 the water temperature should not differ by more than 5 K from the temperature of the specimen under test. If the water temperature is more than 5 K below the temperature of the specimen a pressure balance shall be provided for the enclosure.

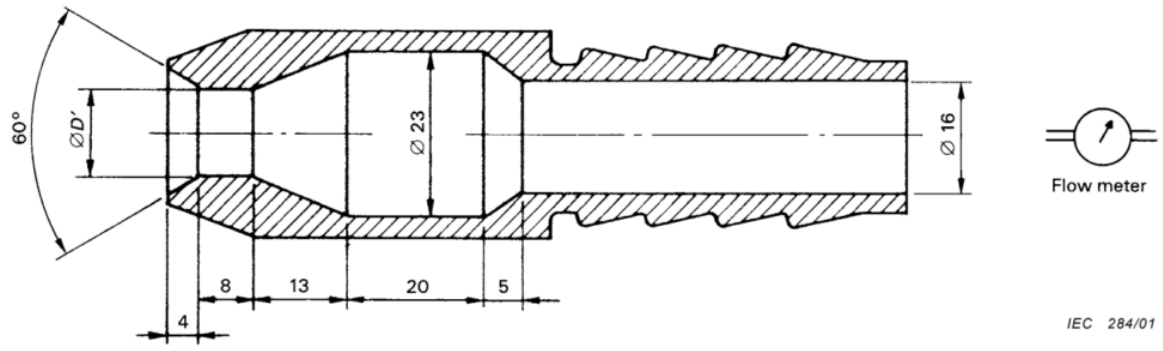
Adequate safety precautions should be taken when testing the equipment in the energized condition.

14.2.5 Test for second characteristic numeral 5 with the 6,3 mm nozzle

The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure 6.
The conditions to be observed are as follows:
– internal diameter of the nozzle: 6,3 mm;
– delivery rate: 12,5 l/min ± 5 %;
– water pressure: to be adjusted to achieve the specified delivery rate;
– core of the substantial stream: circle of approximately 40 mm diameter at 2,5 m distance from nozzle;
– test duration per square metre of enclosure surface area likely to be sprayed: 1 min;
– minimum test duration: 3 min;
– distance from nozzle to enclosure surface: between 2,5 m and 3 m.

14.2.6 Test for second characteristic numeral 6 with the 12,5 mm nozzle

The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure 6.
The conditions to be observed are as follows:
– internal diameter of the nozzle: 12,5 mm;
– delivery rate: 100 l/min ± 5 %;
– water pressure: to be adjusted to achieve the specified delivery rate;
– core of the substantial stream: circle of approximately 120 mm diameter at 2,5 m distance from nozzle;
– test duration per square metre of enclosure surface area likely to be sprayed: 1 min;
– minimum test duration: 3 min;
– distance from nozzle to enclosure surface: between 2,5 m and 3 m.



Dimensions in millimetres

D′ = 6,3 for the test of 14.2.5 (second characteristic numeral 5)
D′ = 12,5 for the test of 14.2.6 (second characteristic numeral 6)

Figure 6 – Test device to verify protection against water jets (hose nozzle)

IPX5 IPX6 Rain Jet Test Chamber

- IP Rate: IPX5 IPX6;
- Water Flow Rate:12.5L/min ±5%;100L/min ±5%;
- Water Re-circulation System;
- Diameter of Turntable (mm): 400
- Turntable loads: 20kgs Max
- Turntable Rotation Speed: 0~7r/min (Adjustable)
- Internal Diameter of IPX5 Nozzle: 6.3mm
- Internal Diameter of IPX6 Nozzle: 12.5mm
- Chamber soize: 600*600*600mm
- External cabin steel Plate with protective coating
- Internal chamber SS304
- Door with observing window
- Water purifier: mainly purification from water source to water tank
- Rotation of table: forward, reverse
- Regulate the pressure according to prescribed water flow
- Water jet distance: 2.5m (nozzle away from the center of the turntable

Category

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