

Watch water resistance

Pressure measurement

The water resistance of watches is measured in atmospheres (atm.). Without allowing for rounding differences, 1 bar equals 1 atm, but the exact conversion is: 1 bar = 0.980665 atm.

Water resistance tests in accordance with DIN 8310

The term “water resistant” is specified in the DIN 8310 standard. According to this standard, a watch is water resistant when, in new condition, it passes the pressure test in accordance with DIN 8310:

30 minutes 10 m water column (approx. 1 bar), followed by 90 seconds 20 m water column (approx. 2 bar).

With the test pressure 10 metres of water column correspond to approx. 1 bar. Watches in this test are subject to a maximum pressure of 3 bar. Nevertheless, it is important to note that the force acting on the watch case is uniform and static, but that a diving depth of 20 metres creates added forces acting laterally on the watch and increasing stress distinctly. This means that watches that are water resistant up to 3 bar cannot be used for diving depths of 20 metres! Note: The term “waterproof” employed for many years, has been replaced with "water resistant".

Grading

The maximum allowable pressure is generally inscribed on the watch. The pressure in atm is indicated on the case back and the depth in metres is shown on the dial. The table below provides information on the pressure withstanding capability of a watch; they are general empirical values and do not constitute standards.

Specification on case back	Description	Minimum contact with water (washing hands, rain)	Contact with water (washing dishes, bathing)	Water sports (swimming, snorkelling, showering)	Scuba diving (with compressed air)	Deep diving (with helium-oxygen mix)
No specification	---	---	---	---	---	---
3 atm	water resistant	X	---	---	---	---
5 atm	water resistant down to 50 m	X	X	---	---	---
10 atm	water resistant down to 100 m	X	X	X	---	---
20 atm	water resistant down to 200 m	X	X	X	X	---

Practical information

- Have water resistance checked regularly, preferably once a year. Many watchmakers provide this service at a reasonable price; the case joint may also be replaced as part of this check.
- To use the watch in water, make sure that the crown is properly pushed/screwed tight and that the and pushers are barred (if function is available).
- Do not actuate the crown or pushers under water.
- Have the water resistance checked as a precaution following excessive stress; for example, a fall or strong impact.
- Following contact with salt water, rinse the watch with soft water to prevent corrosion.
- Avoid extreme temperature fluctuations. Going from a sauna into icy water or from direct sunlight into cold seas exerts extreme stress on the watch's water resistance systems.
- Immersion caused by diving into water creates very high pressures that act on watch case and joints. The stress thus caused is well above the pressure indication in the specifications on the watch, with water entering the watch as a consequence.
- Take your watch to a specialist watchmaker immediately on detecting water entry.