

Water Resistance Testing - Hydrostatic Pressure Test

This test procedure is applicable to all fabrics that are inherently water repellent or have been treated to impart protection against water penetration.



The test is referenced extensively in performance specifications for products ranging from rain protection in heavy canvas tents to medical textiles used for biohazard protection.

Hydrostatic pressure is a force distributed over an area exerted by water. It is a measure of the fabric's resistance to the passage of water through it. One surface of the specimen is subjected to a uniformly increasing pressure of water until penetration occurs in three different places. The hydrostatic pressure at which water penetrates the fabric at the third place is noted.

Unless specified otherwise, the face of each specimen is placed face down in the tester, exposed to the test water, and clamped between two rubber gaskets rings to prevent leakage through the side of the assembly. The water pressure is then increased at a steady rate, (e.g. AS 2001.2.17 ranges between 1 kPa/min or a result achieved in 10+/- 2 min) until three droplets form on the surface. The pressure increase in pressure is ceased and is the end of the test. The pressure required to penetrate the material is measured using a manometer or pressure gauge.

Measurement methods:

- *Manometer* - pressure is measured in either mmH₂O or cmH₂O, usually used on fabrics with low resistance.
- *Low pressure gauge* - used when hydrostatic pressure is less than 100 kPa.
- *High Pressure gauge* - used when hydrostatic pressure is greater than 100 kPa. Maximum machine readings can range from 200-250 kPa depending on the specimen being tested.

CONTACT US:

If you require any further information on hydrostatic head testing or any matters relating to fabric water repellency performance, please feel free to contact the Technical Staff at AWTA Product Testing for further assistance or a quote.

Contact Us: ☎ Phone: (03) 9371 2400 ✉ Email: producttesting@awta.com.au