

— ATEQ PRESENTS LEAK TESTING 101

— The Who What When Where Why and How's of Leak Testing

ATEQ

WHAT is leak testing?

Leak testing is a non-destructive quality control test used to detect manufacturing defects to help verify the integrity of products. Leak testing makes sure fluids can't leak into or out of the part to improve consumer satisfaction and reduce production waste.



WHEN is leak testing used?

When people think of leak testing, they may think of a leaky water bottle or a gas tank, but there are many less obvious applications from all different types of industries that require leak testing.

Medical applications like syringes or appliance water circuits in washing machines or coffee makers also need to be leak tested to make sure water does not leak out of the product when it isn't supposed to. You may have a smartphone that claims to be waterproof. This claim means there are strict leak testing requirements that need to be met to ensure that the product will not let any liquids or dust into the phone.

WHERE is leak testing used?

Leak testing can be used throughout the manufacturing process. It can be used in the product development lab to bench test prototypes. Leak testers can also be incorporated into machines in the factory production line to automatically test parts to verify that assembly operations were completed properly and subcomponents are leak free.



WHY is leak testing necessary?

There are some products that may just be an inconvenience if they leak, like air getting into a bag of chips making them stale, but there are other applications where highly accurate leak testing can be the difference between life or death.

Imagine if you had a pacemaker inside your chest sending electrical pulses to prompt your heart to beat at a normal rate. Now imagine if that pacemaker had a microscopic hole that allowed liquid to seep into it. The liquid could short circuit the pacemaker causing it to stop working or send irregular dangerous shocks into your heart.

WHO makes leak testing decisions?

Leak testing requirements are usually determined by manufacturing engineers. Once they determine that a product they will be manufacturing will need leak testing, those engineers work with ATEQ's sales engineers to develop leak testing specifications to determine what type of leak testing will be best for the application and what the leak rate reject limit will be.

HOW is a leak test performed?

There are several different methods of leak testing. One of the most primitive and easy methods to conceptualize is a bubble test. This involves submerging a part underwater and seeing if any bubbles emerge from the product. There are several problems with this method. It is very time consuming and messy for the operator. It also does not give any precise measurements of exactly how much an application is leaking.

ATEQ's primary method of testing is pressure decay air leak testing. This means that the instrument injects the part with compressed air, measures the pressure, waits, then measures the pressure again to see how much the pressure dropped. If the measured leak rate is less than the designated reject limit, the part passes the test. There are also various other types of testing like mass flow, electrical, and gas tracing.

