
Causes of flexible package breakage and how to prevent it through testing

There are two main causes of flexible package breakage, breakage during filling process due to impact on the bottom of the pouch caused by product filling, and breakage during storage due to inner pressure increase from stacking finished products.

Many tests can measure the heat seal strength of finished packages and prevent the breakage during transportation and storage.

Tensile test: This test measures the stretching heat seal strength, which is unsuitable for storage pressure but useful for evaluating opening ease of the package.





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Labthink C610H Auto Tensile Tester is professionally applicable to measurement of tensile, peeling, deformation, tearing, heat sealing, adhesive, puncture force, opening force, pulling force and low speed unwrapping force as well as other properties of plastic films, composite materials, soft package materials, plastic flexible tube, adhesives, adhesive tapes, label stickers, medical plasters, release paper, protective films, combined caps, aluminum foils, diaphragms, back sheets, non-woven fabrics, rubber and paper, etc.

Leak and heat seal strength test: This test measures the expanding heat seal strength, which is suitable for assessing pressure resistance of the package. It pressurizes the pouch to find the weakest heat seal and measures the maximum breaking force and time.



Labthink C660M Leak and Seal Strength Tester is professionally applicable to quantitative determination of seal strength, seal quality, burst pressure, seal integrity, compression resistance, torsion force and joint/disengaging force of various flexible

packages, aseptic packages, plastic tamper-evident closures, flexible tubes, caps and other materials.

Hot Tack Force Testing: This test measures the peeling force of the heat seal before cooling. By analyzing the relationship between hot tack force, heat seal temperature, and time, manufacturers can find the optimal heat seal parameters for their production line.



Labthink C632B Hot Tack Tester is applicable in hot tack and heat seal performance tests for plastic films, laminated films and other packaging materials. It is applicable in peel test, tensile at break test, and other tests for adhesives, adhesive tapes, laminated films, plastic films, paper and other flexible materials.

These Test Results are used to improve packaging functionality and package design. Manufacturers can design the stacking structure of the packages to improve efficiency and prevent breakage. Heat seal parameters like temperature, pressure, and time should be



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adjusted based on test results, product characteristics (e.g., powdered products may require additional testing), and material properties.

Testing packaging seal integrity is crucial for selecting appropriate heat seal parameters that minimize breakage during filling, storage, and transportation. These parameters should be based on test data and consider product and material characteristics.



As the demand for functional packaging materials grows, testing methods are evolving to ensure a more comprehensive evaluation of packaging films.

Labthink encourages collaboration with packaging industry companies for quality control! Visit the website www.labthink.com to learn more!