

Nelipak Laboratory Services Your Reliable Test Partner

 **Nelipak**[®]
laboratory services

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ABOUT NELIPAK LABORATORY

Established in 2009 and accredited by the Irish National Accreditation Board (INAB) to ISO / IEC 17025, Nelipak Laboratory Services is an independent testing facility within the Nelipak Healthcare Packaging Corporation.

Nelipak Laboratory Services offers a comprehensive range of tests, including Aging, Package and Material Testing, Transportation and Analytical Testing, for the Medical Device, Pharmaceutical, Packaging, Life Science and Food & Beverage Industries.

In addition to providing high quality testing and analysis, our team of experts have considerable experience in advising, problem solving and consulting on all aspects of packaging regulation and standards.

QUALITY

We are committed to achieving and maintaining a high standard of quality and service in all aspects of our laboratory testing. This commitment is underpinned by the support of our management team to provide a highly professional and confidential service in our secure facility to all of our customers.



TRANSPORTATION TESTING / DISTRIBUTION TESTING TO ASTM D4169 AND ISTA

Transportation tests simulate the hazards the product can potentially encounter in the distribution process. We at Nelipak Laboratory can advise transportation studies to meet customers' requirements and provide detailed reports that outline the package performance. Typically Seal and Pack Integrity Testing is carried out in conjunction with Transportation Testing to ensure the pack has not been compromised.

ASTM D4332 - CONDITIONING

Test specimens are exposed to known temperatures and humidities to simulate environmental conditions that they may encounter during transport or life cycle. Typically the specimens are exposed to cold/hot/humid conditions.

ASTM D5276 - DROP TESTING

Evaluates the capability of a container to withstand sudden shock resulting from a free fall and to study the capability of a container and its inner packaging to protect its contents.

ASTM D642 & ASTM D4577 - COMPRESSION RESISTANCE TESTING

Test simulates Vehicle / Warehouse stacking forces based on the mass and dimensions of the specimens. It will determine the Compressive Resistance of containers under a constant load for either a specified time or to failure.

ASTM D999 - FIXED DISPLACEMENT VIBRATION TESTING (LOOSE LOAD VIBRATION)

Test specimens are subjected to a constant fixed vibration frequency, to simulate repetitive shocks encountered during transportation.

ASTM D4728 - RANDOM VIBRATION

Test specimens are subjected to random vibrations and varying frequencies to simulate truck and air transit.

ASTM D6653 - HIGH ALTITUDE SIMULATION

Simulates the effects of high altitude / low pressure during airtravel or travel over mountain passes. The packaging systems are subjected to a controlled vacuum. This is only required for specimens sensitive to low pressure, e.g. non porous packaging.

ASTM D6344 - CONCENTRATED IMPACT

Resistance against concentrated low level impacts typical of those encountered in distribution environments. This test is most commonly used for lighter grade corrugated boards.





PACKAGING INTEGRITY / SAMPLE TESTING

Sample Testing is a vital part of packaging validation. This testing verifies the packaging and the package seal has remained intact, keeping the product sterile. Packaging failures can compromise the sterility of the product which can be hazardous to the end-user.

ASTM F88 - SEAL STRENGTH TESTING

Establishes the strength of a seal on flexible packaging materials such as blisters, pouches and header bags. Tests can be either supported or unsupported depending on the customer requirements.

Technique A – Unsupported.

Technique B – Supported 90°C - by hand.

Technique C – Supported 180°C - backing plate.

ASTM F1140 - BURST TESTING

This test determines the ability of the seal to withstand internal pressurisation until the seal fails. It can identify the weakest point in the packaging.

ASTM F1929 & ASTM F3039 – DYE PENETRATION TESTING

A dye penetrate solution is applied locally to the material sample or sealed edge. After contact with the dye for a specified time, the samples or seals are visually inspected for channels. The integrity of the materials or seals formed between film and porous or non-porous materials are analysed.

ASTM F2096 - BUBBLE LEAK TESTING

Packaging is submerged in water and internally pressurised to the pre-established pressure. During testing, package is visually inspected for steady streams of bubbles indicating punctures and tears in substrates or channels and voids in seals.





AGE TESTING

Age Testing is performed to determine a product's shelf life and is a requirement of ISO 11607-1. At Nelipak Laboratory we have a number of chambers operating at various conditions offering choice to customers, we can also operate chambers to a customer's specific request.

ASTM F1980 - ACCELERATED AGING / STABILITY TESTING

Exposing specimens to elevated controlled temperatures and humidities to simulate the effects of real time aging over a shorter period of time. Calculating the length of time to age the specimen is determined by the Arrhenius Equation. This states that an increase of 10°C doubles the rate of a reaction.

For example, exposing product to 55°C for 38 days would simulate 1 year real time aging.

ASTM F1980 - REAL TIME AGING

Specimens are stored in a designated area and exposed to continuously monitored ambient conditions, for a specific period of time.

MATERIAL ANALYTICAL TESTING

At Nelipak Laboratory, we can use FTIR and DSC separately or in combination to identify polymer blends and compositions. This can be most useful when identifying problem batches and monitoring quality control.

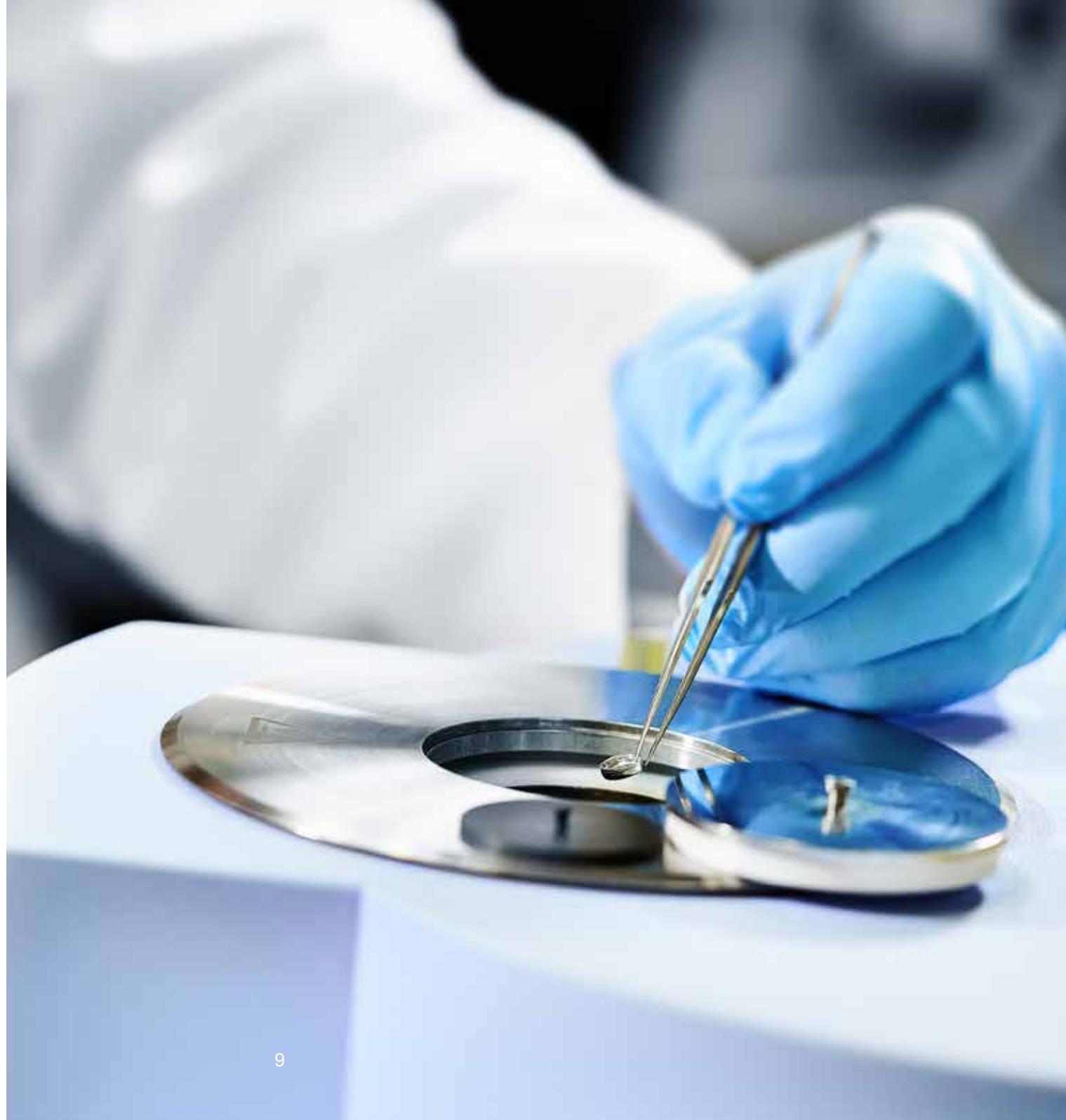
ISO 11357-1, ISO 11357-2 & ISO 11357-3 - DIFFERENTIAL SCANNING CALORIMETRY

DSC is a thermo-analytical test which characterises the thermal behaviour of a polymeric material. We are accredited to measure Temperature and Enthalpy of Melting and Crystallisation and also Glass Transition Temperature and Step Height

ASTM E1252 & ASTM E573 - Fourier-Transform IR Spectroscopy (FTIR)

An analytical test where infrared light passes through a specimen and results in a spectrum. The spectrum provides a chemical "fingerprint" unique to that specimen.

It can be used to identify unknown samples or determine the quality / consistency of a sample.





MATERIAL TESTING

Material Testing is an important way to characterise certain features of materials. The information gathered allows customers to compare materials and select the most suitable application / combination of materials.

ASTM D1894 - SLIP TESTING / COEFFICIENT OF FRICTION

Determines the starting and sliding friction of plastic film, sliding over itself or other substances. Slip properties are important to consider when looking at automated filling processes, stacking properties of filled packages.

ASTM D882 - TENSILE TESTING

Determines the mechanical properties of films such as tensile yield, strength, elongation and modulus. The sample is subjected to a known and controlled tension until failure.

ASTM F1306 - PUNCTURE TEST

The test allows a flexible barrier sample to be characterised for slow rate penetration resistance with a driven probe. The test is performed by applying a biaxial stress at a single test velocity to the sample until perforation occurs.

ASTM F392 - GELBO FLEX TESTING

Determines the flexural resistance of flexible barrier material by applying repetitive strain through a combination of twisting and compression motions. Measures the materials resistance to pin holing.

ISO 5636-3 - BENDTSEN POROSITY TESTING

Determines the air permeance of a porous material by measuring the resistance of airflow through the material.

ASTM D5035 - BREAKING FORCE AND ELONGATION OF TEXTILE FABRICS

Determines the resilience of the material by applying a force until the sample breaks, e.g. Tyvek®.

ASTM D1709 - DART DROP TEST

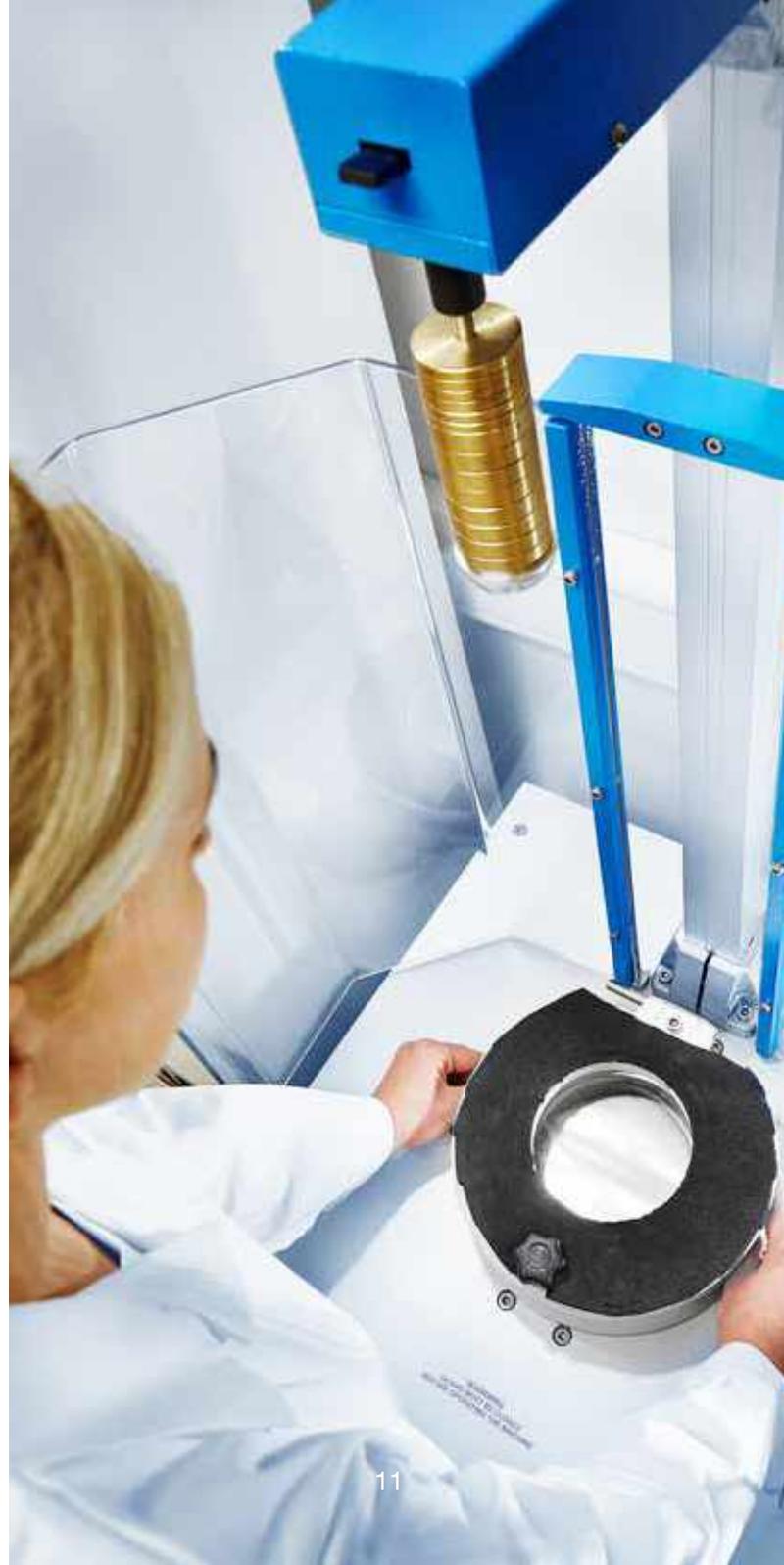
Determines the impact resistance of plastic films by Free-Falling Dart Method. The test determines the energy needed to cause a plastic film to fail under the impact of a free-falling dart.

ASTM D4321 - YIELD TESTING

This test method is used to determine area per unit mass of flexible materials.

ISO 536 - DETERMINATION OF GRAMMAGE – PAPER AND BOARD

Basis weight per unit area.



OTHER TESTS PROVIDED BY NELIPAK HEALTHCARE PACKAGING.

ISO 5636-5 - GURLEY POROSITY

ISO 8791 - BENDTSEN ROUGHNESS

ASTM D4320 - SPENCER IMPACT

ISO 2758 - BURSTING STRENGTH OF PAPER

ISO 1974 - TEAR RESISTANCE (PAPER)

ASTM D1922 - TEAR RESISTANCE (FILMS)

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