

**QUALITY BY DESIGN,
EXCELLENCE AS STANDARD.**

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PALLITE

INTRODUCTION

John Ruskin, leading author, writer and art critic of the Victorian era, is credited with once saying: “Quality is never an accident. It is always the result of intelligent effort. There must be the will to produce a superior thing.”

At PALLITE®, we strive to be the best in everything we do. Putting our customers and their needs at the front and centre, we work hard to produce the finest products that not only meet customers’ requirements but exceed them, and to offer the very best service that we can.

Quality. Excellence. Hard work. In everything we do. These are fundamental principles that we all live and work by.

“For some businesses, quality is about quality control for their products”, our quality manager Matthew Marks explains. “For us, we look at the bigger picture. We want to provide quality across our entire business – not just our products but our processes as well. We want to understand how what we do impacts on our customers and their supply chains, how our products can benefit their businesses, and the added value that we can bring to our customers’ experience with us.”

Quality does not happen by accident. We don’t take it for granted, and neither do we expect you to accept our assurances of quality without independent, evidential proof. For that reason, at PALLITE® we invest heavily in rigorous testing of our products and processes, working with independent experts to verify our current offering and on a constant programme of development and refinements.

In this whitepaper, we outline the testing we do and invite you to read on to judge for yourselves.

PRODUCT TESTING

Quality may be about more than just products for PALLITE®, but our products are a good place to start.

Before bringing them to market, all our standard products – including our pallets and award-winning pallet boxes – undergo a range of independent tests carried out by specialist test companies /certified to verify their suitability for use in packaging, transporting and storing goods.

Our own exacting standards mean we also carry out a number of in-house tests, including on the quality of the paper we use in their manufacture, to ensure consistency and continued excellence.

Once we have developed a fantastic product, we don't rest on our laurels, but continue to push the boundaries by developing new designs and testing their efficacy in a safe environment before passing improvements and refinements onto customers. New products too. Sometimes these are as the result of customer feedback, sometimes we do it off our own back because we want to be the best – own desire for excellence

Finally, we can also test our products to customer requirements. If a customer comes to us with a particular need, we are happy to try to modify our products if possible or come up with a bespoke design, and then arrange for testing to make sure we meet the customers' needs.

All products are carried out in ISTA-certified laboratories, using standard ISTA 3B general simulation tests as guidance. – testing with ista packaging standard.

STANDARD PRODUCT TESTING

Environmental testing

In order to ensure the PALLITE® range is capable of performing to the same high standards in different climates, every product is conditioned for 48 hours in a climate chamber prior to testing. Two of each size and specification of product are conditioned, one to ambient temperature of approximately 23°C and 50% relative humidity, and the other to a temperature of around 38°C and relative humidity of approximately 85%, to simulate a hot and humid environment. The same range of tests is then carried out on each of the conditioned products to determine their capabilities and tolerances, and the results compared.

We do not routinely test our products in sub-zero conditions, but we are very happy to do so at customers' request.

Standard tests carried out on products once they have acclimatised include:

Compression testing

Acclimatised products are compressed using a two horizontal steel plates moving at a standard speed of 10mm/minute. This test allows us to calculate the load capacity of our products, the maximum weight they can withstand while being moved around on forklifts in the warehouse or elsewhere in the supply chain without

weakening or breaking. By knowing this, we can advise customers on how best to achieve the loading results they want without compromising employee safety or the safety of their consignment.

In the independent tests carried out, PALLITE® products remained unchanged and held strong until 4,000kgf of compression.

Deflection testing

Deflection testing allows us to ascertain how much weight our products can hold in a situation where they are static, for example when holding items in storage racking in a warehouse. We carry out this testing on individual components of our designs, as well as on the finished items. A weight is applied to the product and left over a set period of time. The amount of “bend” or deflection in the product is recorded against time. Once this deflection goes above a certain limit the product is deemed to be damaged and the test ends.

This type of testing allows us to determine how heavy a weight our products can hold, over what period of time. From the independent tests that we have had carried out, we know that PALLITE® products

Two pallets tested over 28 days, each marked up with datum points, distance between these and floor measured and recorded every 24 hours.

Dynamic load (capability to span open beamed racking) - **PASS**

- ✓ 750kg load - deflected PALLITE® pallet by 7.2%
- ✓ 1,000kg load - deflected PALLITE® pallet by only 9.1%

Lift test (lifted 300mm with standard fork truck) - **PASS**

- ✓ 750kg load - no deformation
- ✓ 1,000kg load - 8mm deflection

The same test was repeated in-house multiple times to simulate the same load being lifted, driven, placed in racking several times, resulting in a maximum of 18mm deflection at 750kg, and 26mm at 1,000kg.

Drop testing

Drop testing is used to check how well our products will protect the goods they carry in the event of them accidentally being dropped during handling. This test involves hoisting the pallet or pallet box, with weighted load, two metres into the air and dropping it onto the ground. The pallet or pallet box is then reviewed for signs of strain, and the goods it carries inspected for damage or breakages.

This pass/fail test allows us to confirm that our product designs are effective for carrying and protecting consignments during storage, handling and transit.

Vibration testing

Vibrational testing simulates our products being taken on an on-road or off-road journey. Similar to drop testing, products are loaded with a test weight, before being placed on a vibrating plate for a set amount of time. During the test, the vibrational plate oscillates to replicate the chosen journey method. After the test, the product and load are reviewed for signs of strain and damage.



This pass/fail test allows us to confirm that our product designs will effectively protect goods in transit.

Independent tests showed that PALLITE® products are able to hold a consignment in position and secure it during a one-way trip with the worst vibration scenario possible.

IN-HOUSE TESTING

We understand how important it is to our customers to minimise disruptions in their supply chains, and so we strive to ensure our products are consistently of the highest standards, in order to ensure that customers can rely on the service they provide.

In addition to the mandatory external testing that we must carry out on our products, we also proactively carry out our own in-house testing and quality checks to ensure consistency and continued excellence.

Paper testing

We perform quantitative and qualitative quality checks on every reel of paper that enters our warehouse to ensure that the raw materials we use are of the highest quality. Carrying out these checks enables us to remove any potential faults prior to the manufacturing process that could otherwise end up in a customer's supply chain.

Visual check

Firstly, we examine the paper fibre size and check for any contamination or tears.

Measurements

Next, we check the thickness and grammage of the paper to ensure it confirms to what we are expecting.

Water absorption

Finally, we carry out a water absorption, or COBB test. This is important, as it will ensure that the paper absorbs the correct amount of glue during the manufacturing process. Products that become saturated with glue during production could be less stable.

Thermal conductivity testing

We have extensively tested the honeycomb deck at the heart of PALLITE®'s innovative packaging products, in order to determine its thermal properties. This is important because many of our clients transport food or pharmaceutical products that must be kept below a certain temperature at all times.

Our standard and insulated pallet boxes were filled with frozen goods and left for 100 hours at an ambient temperature of 21°C, with temperature sensors monitoring the temperature of the goods during that time. The tests found that our honeycomb has high thermal efficiency, meaning it takes a long time for heat to pass through it. Our PALLITE® pallet boxes performed better than a standard corrugate box, while a dual-insulated PALLITE® pallet box kept the goods below 6°C for 80 hours, and below 11°C for the duration of the test. With a K value of 0.01W/mK, the thermal efficiency of the dual-insulated box is better than expanded polystyrene.



PRODUCT REFINEMENT

PALLITE® has won awards for its pioneering designs, so we are no stranger to innovation. We are perfectionists, always striving to improve our products in any way we can. We continue to add new products to our range, and to refine those we already offer to make them even better for our customers.

Whenever we create a new specification, or test an innovative idea for a product refinement, we extensively test it before we bring it to market to ensure nothing is left to chance, either in-house or through an accredited third party.

These tests include:

- ✓ Board deflection
- ✓ Stress point testing
- ✓ Load/weight validation
- ✓ Manual handling within the supply chain
- ✓ Best practice and usage of our range.

CUSTOMER REQUESTS

Where customers have specific requirements for the goods they need to package that may not be met by our existing products, we are happy to work with them to develop a design that will meet their needs.

It may be that one of our existing products can be used, but we may need to carry out additional testing to be certain that it can meet the customer's unique needs. Alternatively, we may be able to modify an existing design to allow it to match the specification required. Where our existing designs cannot be used or modified to suit, we are also happy to work in partnership with companies to design bespoke products for very specific needs.

Whatever the brief, we work hard to fully understand our customer's problem and what they need the product to do, and subject all prototype designs to full product testing prior to implementation.

AWARDS AND ACCREDITATIONS

Our hard work and commitment to quality in everything we do is further evidenced by the awards and accreditations we hold.

Awards

- ✓ Winner – Growth company of the year – Northamptonshire Logistics Awards 2018
- ✓ Winner – Innovation award – Northamptonshire Logistics Awards 2017

Accreditations

- ✓ ISO9001 Quality Management
- ✓ ISO14001 Environmental Management



PALLITE® is also a member of the following associations aimed at promoting best practice within our industries:

- ✓ The Chartered Institute of Logistics and Transport
- ✓ Logistics Leaders Network
- ✓ Made in Britain
- ✓ British Exporters Association (BExA)
- ✓ Sheet Plant Association
- ✓ Northamptonshire Chamber of Commerce
- ✓ Northamptonshire Logistics Forum
- ✓ UK Warehousing Association.

NEXT STEPS

At PALLITE®, our commitment to quality runs deep. We work hard to provide the finest products and the very best service possible for all our customers.

If you think your business could benefit from switching to PALLITE® products for your packaging and transport needs, why not get in touch to discuss next steps? You can give us a call on **01933 283920** or email us at **enquiries@pallite.co.uk**