What happens to your product when it leaves your facility?

Whether you make cosmetics, food, medical devices, or power tools you want to guarantee that your product reaches the customer in the same condition that it left your facility. As a manufacturer you go to great lengths to ensure the quality of your product, but unknowingly you could be subjecting your product to damaging conditions on the way to its final destination. For this reason, shipment testing is critical.

Proper transit tests should reflect the true shipping environment as much as possible. Variables to be considered when developing a test include packaging, transit method, vibration level, and of course, temperature/humidity. Since many shipping environments will include harsh climatic conditions, it is important to see the effect of these conditions along with random vibration profiles.

When designing a test you must consider all of the conditions that may impact your products as they are in transit. For example, if you are shipping something on an open bed trailer, sun simulation may be important; or if you are shipping via cargo ship you may need to consider salt spray testing to ensure your packaging will hold up. If you are shipping something like finished doors or flooring you want to ensure that the vibration in transit will not rub off or scratch the finish.

A key consideration in vibration testing is the type of transportation being used, as it can alter the type of vibration experienced. This means that you could be testing for vibration based on shipping via rail, but if your product is actually being shipped by motor freight you could be missing key issues. When looking for a shipping vibration testing lab, you will want to make sure that they are capable of accommodating a variety of vibration types to simulate the actual forces that will be exerted on your product.

Once you have the right vibration pattern(s) you also need to ensure that temperature and humidity are both considered. To best test for this, you need to "shake and bake" as we like to call it. This refers to placing the product on a vibration table inside of an environmental chamber, allowing you to see how it holds up under vibration at varying temperatures and levels of humidity.

How can J.A. King help?

Our testing facility in Greenville, SC has a number of resources available to help you with transit testing. Our lab has multiple environmental, sun simulation, and salt spray chambers able to accommodate very large parts. We also have a vibration system capable of frequencies up to 3000 Hz, with peak to peak displacement of three inches, a capacity of up to 600kg, and an expanded head which can hold a standard

size pallet. It is controlled by an LDS LASER$_{USB}$™ which can accommodate sine, random, sine on sine, sine on random, and random on random exotic spectra as well as random, sine, and half-sine shock force. If you have recorded the experienced vibration using accelerometers and acquisition software, our system can reproduce those specific patterns allowing you to replicate exact shipping conditions. Additionally, this system can be utilized in conjunction with one of our environmental chambers enabling us to vibrate at varying temperatures and humidity levels. With this chamber we can test from -50°C to +120°C and humidity from 10% to 95%.

Contact us today to discuss how we can help you ensure the safety of your product when it leaves your facility. *Please note that we are not currently ISTA certified for shipment testing, but are planning to acquire this certification in the near future. If this particular certification is important to you, please let us know.*