

November 2017

## Dossier: Changes in transport simulations

A transport simulation is a uniform and repeatable test method to evaluate packaging. It simulates the effects that a packaging can encounter throughout the entire distribution chain. This involves not only the simulation of the transport itself (road transport, air transport, overseas, ...), but also the manipulations before and after transport as well as the storage conditions are taken into account. (more information: see our dossier "Transport simulations").

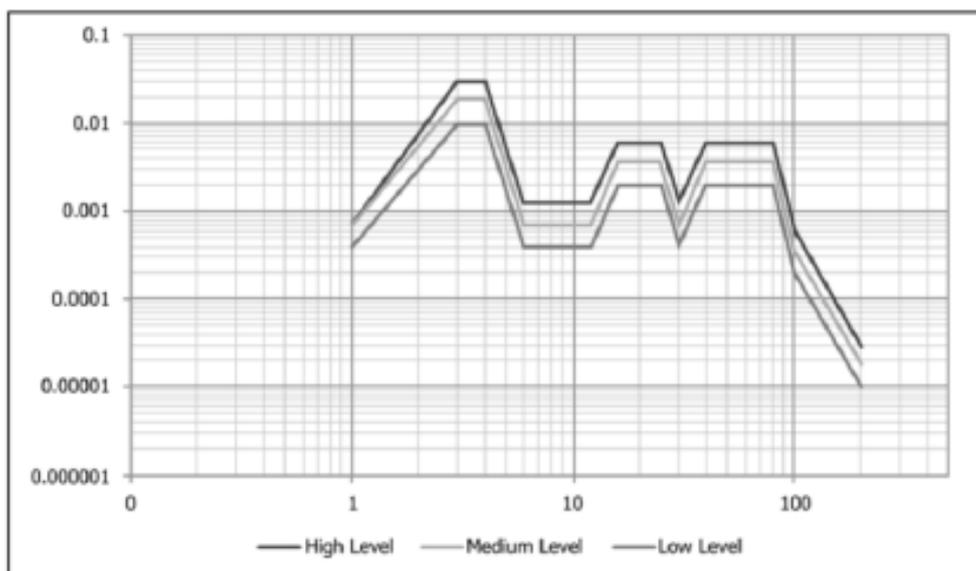
ASTM and ISTA are, in the framework of transport simulations, the most commonly used standards and just in these test methods a number of changes were made, which we like to explain you further.

In the latest version of the test method **ASTM D4169-16** (Standard Practice for Performance Testing of Shipping Containers and Systems) changes have been made with regard to the truck vibration Profile.

Previously, users selected one of the three specified assurance levels. Typically for these assurance levels is their difference in intensity. The truck vibration test was then performed at the selected assurance level for the whole duration of the test.

Actually, the truck vibration profile is no longer associated with these test levels I, II, III. The updated truck vibration is based on levels of intensity which are now defined as low, medium and high level intensity

### New Profile



A one hour Truck Profile loop is composed as a combination of the three test levels:

- (1) Low Level for 40 minutes.
- (2) Medium Level for 15 minutes.
- (3) High Level for 5 minutes

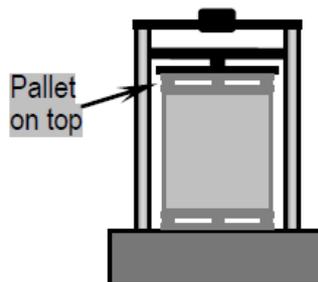
This new truck vibration profile aligns more closely with other test standards such as ASTM D7386 and ISTA 3 Series performance tests.

The Air and Rail vibration Profile remains unchanged.

In April 2017, some technical changes have been made in the 2017 Resource Book regarding Procedure **ISTA 3E**.

The vehicle and warehouse compression formulas are combined into one enhanced formula which now accounts for a broader range of real world warehouse and vehicle stacking scenarios.

During the compression testing sequence, a pallet must be placed on top of the unitized load, to simulate more closely the reality.



Other changes:

- Regarding the shock testing sequence, the rotational edge drop height has been changed from a fixed height to a variable height, depending on the weight of the pallet.
- Also the speed for the incline impact and horizontal impact were increased from 1,1m/second to 1,2m/second.
- Finally the title, scope and preface of this procedure have been changed (editorial change) in:

ISTA 3E - 'Similar Packaged-Products in Unitized Loads for Truckload Shipment'



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