A significant recent development was testing results for a new client wishing to protect a highly fragile, technical electronic product. We are not able to discuss who the client is. However, this testing demonstrates the high performance of our solution, to prove our ability to go mass market.

This test was for packaged product with overall packaging size smaller than 1.2m x 80cm x 80cm and with a total weight less than 45Kg. The weight shall include the product, media and all packaging including transit straps, tapes and or transit pallets.

CONDITIONING

- A minimum of 24hrs at normal room temperature and relative humidity conditions.
- Temperature Cycling: 7 Cycles of -25C to +70C.
- Dwell of between 4 and 5hrs at each temperature.

Relative humidity shall be controlled such that it is between 70% and 80% at +70°C and then reduced down to between 20% and 30% for temperatures between +50°C and +5°C. Relative humidity may be uncontrolled when below +5°C.

Temperature transitions shall be between 0.3°C/min and 0.5°C/min.

A minimum of 12hrs at normal room temperature and relative humidity conditions after which the external surfaces.

After temperature and humidity cycling, the test package was inspected for any external degradation.

STATIC LOAD

A spreader plate for distributing the weight evenly across the top of the package was used under test; A evenly distributed Test Mass was placed on the package Under Test for between 26 hours. The Test Mass was equivalent to the total mass of packages in a 1.2-metre to 1.5-metre stack minus the mass of one package.

This test assumed all packages on the pallet are of equal mass and were stacked directly on top of each other.

VIBRATION

The package under test was mounted to the vibration equipment by clamping the sealed package to the vibration table. The preferred method was to use two flat spreader plates, one on the top and one on the bottom, that were the same size as the Package under test. Then a clamp or strap was placed on Package under test to the vibration table such that the Package under test was secure but did not show any obvious visual indications of deformation.

The spreader plated was of suitable material and depth so as not to bow and unduly load or deform the package under test. The package under test shall was subject to Swept in line of each of the 3 mutually perpendicular axes:

2-5Hz to 350hz at a rate of 1.0 octaves per minute, as follows: -

+/- 6mm 2-5 to 9hz,

2g 9-350 Hz for 10 sweep cycles.

DROP

The package test was subject to 10 drops (corner, edges & faces) from a height dependent on:

Mass (Kg):	Height (mm):
<10	970
10 to 19	810
19 to 28	660
28 to 45	510

Face of the Package under test: top=1, right=2, bottom=3, left=4, near side=5, far side=6. Edges are identified by as two adjacent faces e.g. 1-2 (edge between top & right) and corners are identified by three adjacent faces e.g. 1-2-5 (top, right hand near side corner).

Drop 1	corner 2-3-5	Drop 6	flat on the opposite smallest face
Drop 2	shortest edge radiating from corner 2-3-5	Drop 7	flat on one of the medium faces
Drop 3	next longest edge radiating from corner 2-3-5	Drop 8	flat on the opposite medium face
Drop 4	longest edge radiating from corner 2-3-5	Drop 9	flat on one of the largest faces
Drop 5	flat on one of the smallest faces	Drop 10	flat on the opposite largest face

After vibration testing, the Package under test was inspected for any external degradation and then the test package was carefully opened and the contents and inner packing carefully removed for inspection.

Inner carton only sustained minor deformation but did not have any holes or tears. No deformation such or crumpling to corners and edges did not contact the Equipment Under Test. Result was a pass.