

# ASTM D1185 Test Result Summary

## Tests Conducted At: Virginia Polytechnic Institute and State University Pallet and Container Laboratory 2003

ASTM Test Standards: This protocol consists of four distinct pallet performance measures:

1. The Warehouse Racking Bending Strength Stiffness Test
2. Drop Test Impact Resistance
3. Top Deck Endboard Impact Resistance (Ram Test)
4. Forktine Tip Impact Resistance

In all tests, Lexite™ substantially exceeded both the industry standard and the performance of typical GMA wooden pallets.

### **1. The Warehouse Racking Bending Strength and Stiffness Test**

This test attempts to replicate the loads and stresses on a pallet when it is supported at either end while the remainder of the pallet is suspended between the end supports.

Pallets made from Lexite™ when compared to similar wooden pallets are 66% stronger than wooden pallets, experience 66% less deflection at creep load than wood, and recover their original shape 61% better than wood.

### **2. Drop Test Impact Resistance**

Corner drop testing is performed to evaluate the diagonal rigidity of the pallets and the resistance of the pallets to impact from multiple drops from a height of 40 inches. The pallet is essentially held at height from a corner and dropped on the opposite corner.

Lexite™ pallets are minimally ten times more rigid and diagonally stable than wooden pallets when dropped or subjected to rough handling, and arguably sixteen times more durable than comparable wooden pallets.

### **3. Top Deck Lead Edge Board Impact Resistance (Ram Test)**

This forklift endurance test evaluates how many times and how hard a forklift heel can impact the Lead Edge Board of a pallet before the board is either destroyed or ripped loose from the pallet.

Lexite™ was the first composite material tested that did not suffer from nail head pull through. Lexite™ stringers do not split or splinter when repaired and nailed

multiple times. Lexite™ pallets are 59% more impact resistant than similar wood pallets.

#### **4. Fork tine Tip Impact Resistance**

This evaluation subjects the end of the stringer board to multiple strikes from a fork tine tip. The resistance of Lexite™ pallets to impacts is significantly greater than a typical wooden pallet. Lexite™ pallets are nearly ten times more resistant to fork tine tip impacts than typical wooden pallets.