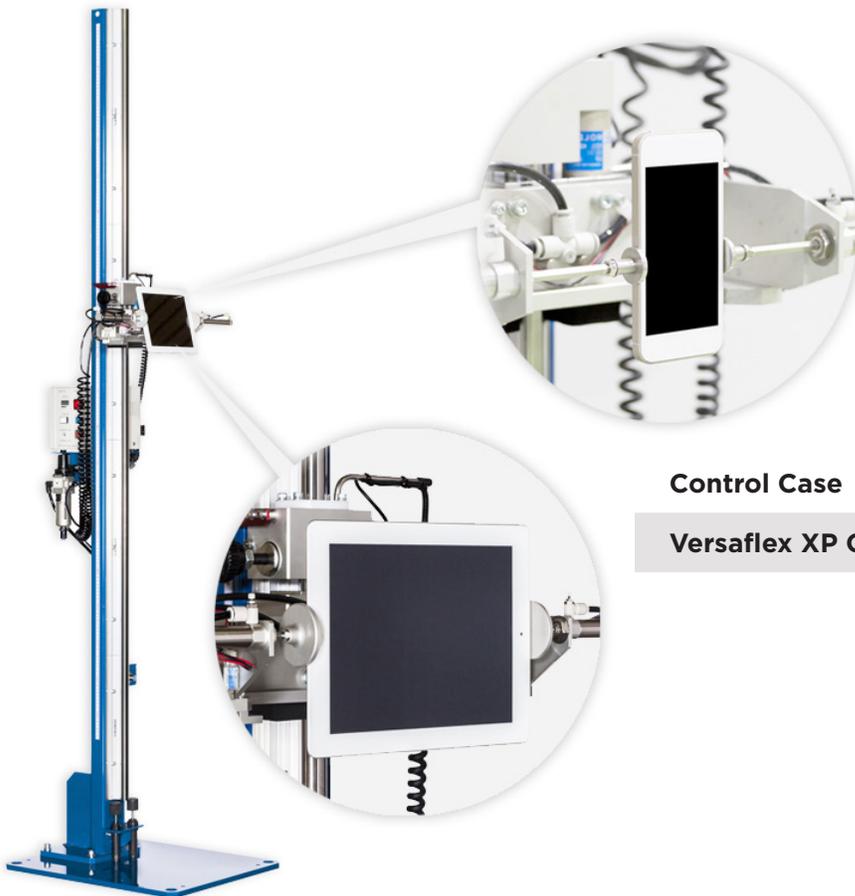




VERSAFLEX™ XP SHOCK ABSORBING TPES FOR IMPACT PROTECTION

Today's smartphones require cases with good impact protection to prevent damage to electronics and fragile glass when accidentally dropped. Phone case brands have historically turned to materials such as standard TPEs, TPU, silicone, and vibration damping TPEs for their design.

Developed from existing vibration damping technology, PolyOne's shock absorbing TPEs are specifically designed to boost impact protection in phone cases subjected to severe drops. To test impact protection performance versus TPU, the most commonly used material in phone cases, PolyOne performed a drop test experiment at an independent test lab.



TEST OBJECTS: iPHONE 6/7 CASES

To limit test variables, the same two-material phone case design was used for this drop experiment. The only variable was the internal case material.

TEST OBJECTS

	Exterior	Interior
Control Case	TPU 90A	TPU 85A
Versaflex XP Case	TPU 90A	Versaflex XP

TEST METHOD: DROP TESTING

The cases were dropped from a predetermined set of heights to measure the performance difference in varying levels of impact. To verify consistency, each drop was completed three times on the same corner of the phone, at each drop height. The phone's internal accelerometer measured the peak G on each drop to capture the amount of protection provided. Lower peak Gs are indicative of less potential damage.

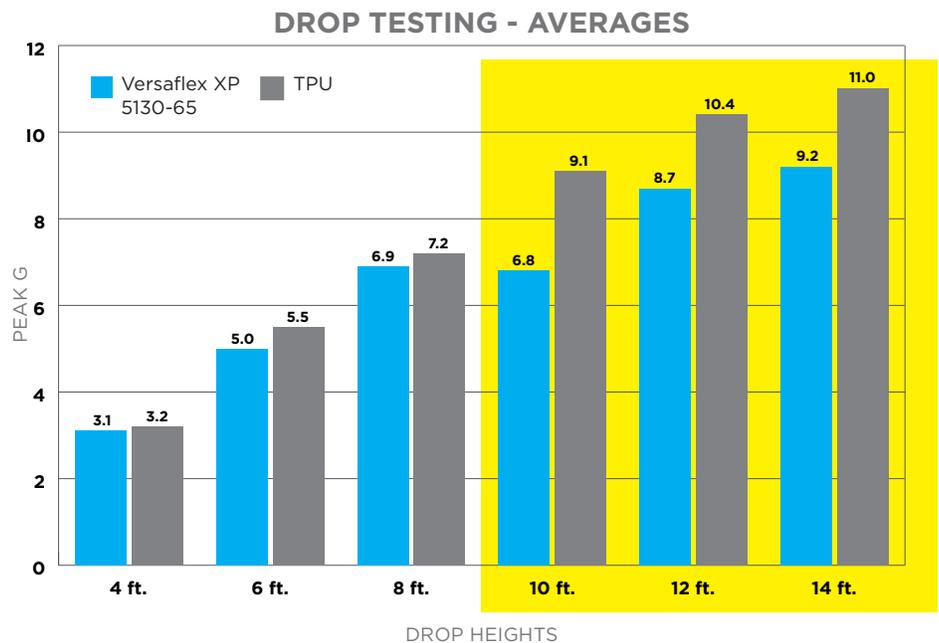
Note: Lower peak Gs mean less impact on the phone, which reduces risk of damage. This experiment utilized the internal iPhone accelerometer, which typically provides lower peak G results than accelerometers attached to a phone chassis.

INSTRUMENT SET-UP

Instrument:	Shinyei Technology Drop Tower DT-202 Series
Test Objects:	2 iPhone 6/7 Cases
Drop Heights:	4, 6, 8, 10, 12, 14 Feet
Methodology:	Internal iPhone Accelerometer
Measurement:	Peak G

TEST RESULTS

Versaflex XP performs better at drop heights of 10-14 feet. Versaflex XP at 14 feet performs nearly the same as TPU at 10 feet.



Note: Lower numbers indicate better performance.

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