

PULLING THINGS APART

One of the frustrating things about packaged snacks is trying to open the bag, especially when the strength of Hercules is needed to rip it open. We've all had that experience at least once on an airplane ride. You probably ask for another bag or sheepishly say nothing and simply slip the unopened bag into your pocket, resolving to cut it open with scissors when you get to your destination.

Quality Control has wrestled with this type of packaging issue for many a moon. The design of the bag provides for an adequate seal to preserve the snack for whatever storage period is needed, usually on the order of several months. The tear strength required to open the bag is the final issue and typically gets addressed by the design people who are responsible for packaging.



Figure 1:
Brookfield CT3
Texture Analyzer



Figure 2:
Close-up View
of the Tension Grips

The newest member of the design team who helps to quantify this tear strength is shown in Figure 1. This instrument is a compression/tension test device that can measure the force required to pull things apart. When equipped with the tension grips (see Figure 2), the packaging material can be pulled apart at a controlled rate, much like a customer trying to rip open the bag.

Versatility is one of the benefits that comes from using an instrument that can do

this general type of push/pull work. The tack test is a general method that can be applied to evaluating any material for its adhesion property. The type of data that comes from this test is shown in Figure 3. The force level measured by the CT3 builds to a

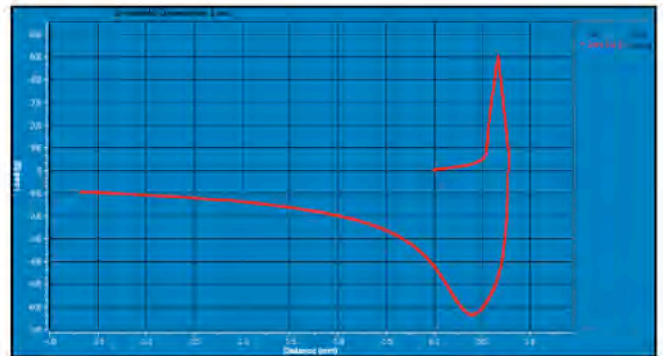


Figure 3:
Typical Data Plot from Tack Test

peak value (in this case, almost 700 grams) before the bonded material pulls apart. This peak value is equivalent to what the customer must apply to achieve the same effect.

Good news awaits those who have yet to try this scientific approach to evaluating packaging materials. This particular instrument is easy to use, requiring no more than a few minutes to set up and run the test. More importantly, this type of technology is highly affordable, thanks to recent improvements in component design and the reduced cost of electronics.

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