Today, Sonoco Alcore® is leading the way in standardising Radial Crush Technology in the European paper core market. As the technology leader, Sonoco Alcore® focuses on understanding customers' needs as well as market changes. We realize that many producers are experiencing added pressure to reduce costs associated with production, packaging and inventory while at the same time increasing productivity. In particular, we are seeing significant focus by the European Commission to reduce packaging waste for both plastic and paper, as well as reduce carbon footprints. Cores designed using Radial Crush Technology allow producers to reduce costs and increase productivity by using the right core for the right application.

**THE RIGHT CORE FOR THE RIGHT APPLICATION**

Why is Radial Crush important for the film & textile industry?

When applying winding tension to elastic material, it elongates and, due to its memory effect, it tries to return to its original state, consequently creating radial pressure on the surface of the core. This means that the force is exerted uniformly around the circumference of the core surface as shown to the left in figure 1.

The core reacts to the radial pressure by reducing its inside and outside diameter and simultaneously the core length increases. Traditionally, the method for measuring core strength has been Flat Crush. However, the deformations occurring in this test are different from those when radial pressure is applied, thus not simulating the right conditions when film or textile are wound on the core.

There is not a consistent correlation between Flat Crush and Radial Crush meaning that Flat Crush is not an effective indicator of core performance in applications involving the winding of elastic material. This is shown above in figure 2.
WHAT DOES RADIAL CRUSH MEAN TO YOU?

The core must be designed to manage the radial forces occurring in your applications in order to retain the required dimensional stability and functionality.

THE SONOCO® ALCORE RADIAL CRUSH SOLUTION

Sonoco Alcore® designed the Radial Crush testing method to simulate the deformations occurring when elastic materials are wound on a core. During this test the core is placed in a compression chamber and a linear growing pressure is exerted evenly on the core. Pressure build-up stops when the core breaks or at a pre-determined level. Measurements are taken to assess the core’s strength and stability.

BENEFITS IN BRIEF

We combine Radial Testing with field tests at the customer’s site to match the strength requirements with the corresponding core properties. These requirements are influenced by both the material properties and machine parameters. For example, film gauge, lay-on roll, number of film layers, web tension and formulation type.

What benefits do Radial Crush optimised cores deliver?

- Cost performance - use optimised cores and reduce costs
- Increased productivity - consistent and reliable performance by adjusting the safety margin
- Decreased waste - less film / textile product is lost due to core failures
- Optimised production process - deliver insights into a customer’s different machines, settings and material types

Sonoco’s radial crush tester has been endorsed by the Composite Can and Tube Institute in the USA as an accepted test method (CCTI Standard Testing Procedure T-158) as of June 2012. Commercial testers are now available directly from Sonoco Alcore® so you can independently test the radial crush strength of your cores.