



Engineering Sciences Section – 2007

C47 Defining Sharpness for Safer Products

Victor A. Popp, MS, 75 Gardner Street, Hingham, MA 02043*

After attending this presentation, attendees will understand standards that exist for measuring sharpness of edges, how to measure and define sharpness when standards do not exist, and how to devise practical test methods to prove a point.

This presentation will impact the forensic community and/or humanity by helping attendees think about liability and product safety, as well as see how practical test methods can be devised when information and standards are lacking.

Sharp products are often injurious, and there is little information available to the forensics engineer who is trying to determine exactly how sharp an injurious product is. Lawsuits can result when debilitating injuries occur from contact with sharp product edges.

There are products that are supposed to be sharp such as knives and razors; and products that are not supposed to be sharp such as consumer goods and toys. There are few published standards that can be applied when trying to determine just how sharp an object is. In addition, there are huge liabilities when products injure consumers who inadvertently make contact with a sharp edge. Often life changing catastrophic accidents result when consumers perform seemingly innocuous tasks using products under the wrong circumstances.

Manufacturers often testify that their product was not sharp, or could not be made less sharp. These arguments often are absurd, given the injuries seen. The difficulty of determining sharpness is not to be underestimated. Even well meaning manufacturers struggle with how to define a sharp edge, and how to determine if their products pose a cutting hazard.

This presentation will educate the reader on:

- Available sharpness standards and limitations
- The process of cutting (i.e., how and why materials cut)
- Different types of stresses (axial and shear)
- How these stresses relate to the different types of cutting (press cutting, shearing, tearing, chopping; abrasion)
- Devising a practical test method to determine how to prevent sharp products

The audience will also get a glimpse into how a forensics engineer can devise his or her own practical test methods when industry standards are not readily available. They will also be exposed to engineering methods that can be used for determining overall product safety.

Sharpness, Cutting, Testing