

Chips Fracturability by Kramer Shear Cell

TVT Texture Analyzer

The TVT Texture Analyzer (Figure1) offers rapid and objective analysis for different products. The following parameters can be characterized for your product category:

- Fracturability
- Crispiness
- Toughness

Both international standard methods as well as customer tailor-made profiles are available.



Figure 1: TVT Texture Analyzer

Scope

- Determination of chips fracturability by Kramer shear cell, bulk measurements.

Method Description

The recording of the measurement data commences once the run button is pressed. The probe blades will then shear the sample to a pre-defined distance of the sample. After the shearing, the probe returns to its starting position.

Calibration

Make sure the instrument is correct calibrated before the measurements. Calibrate the blades (probe) towards the HDS with the standard insert to get the correct zero position. Replace the insert with the Kramer Cell. Lower the blades manually to see that they are in correct position to the Cell. Withdraw the blades before adding the sample.

Load cell (recommended) 50-100 kg

Probe/Rig

Kramer Shear Cell (Figure 2)

Part number: 67.01.04

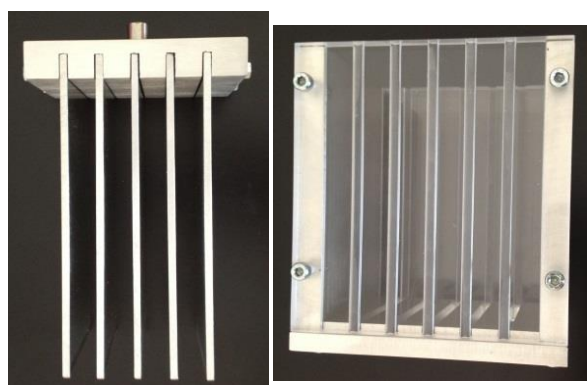


Figure 2: 67.01.04 Kramer Shear Cell

Profile Settings

Setting Parameter

Single Cycle Compression

Sample height [mm]	58.0
Starting distance from sample [mm]	0.0
Compression [mm]	40.00
Initial speed [mm/s]	2.0
Test speed [mm/s]	2.0
Retract speed [mm/s]	10.0
Trigger force [g]	0
Data rate [pps]	500

Sample preparation

Take the sample from the package just before the measurement. Fill the Shear Cell to approximately 50% of its capacity (Figure 3). Make sure the samples have similar weights. Before starting the measurement, check that the probe does not touch the sample when it is in its starting position.

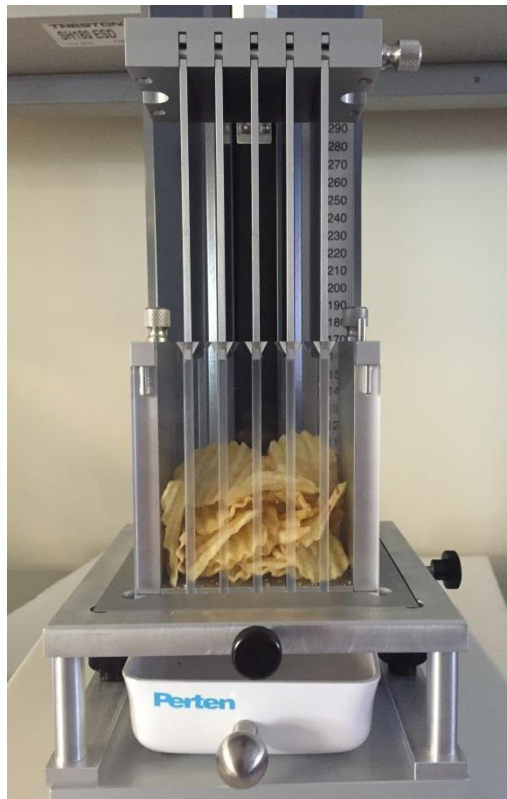


Figure 3: Sample set-up

Curve Description

In Figure 4 a Force-Time curve is illustrated. The maximum peak+ is here defined as the hardness of the sample, while the area is defined as work of shear.

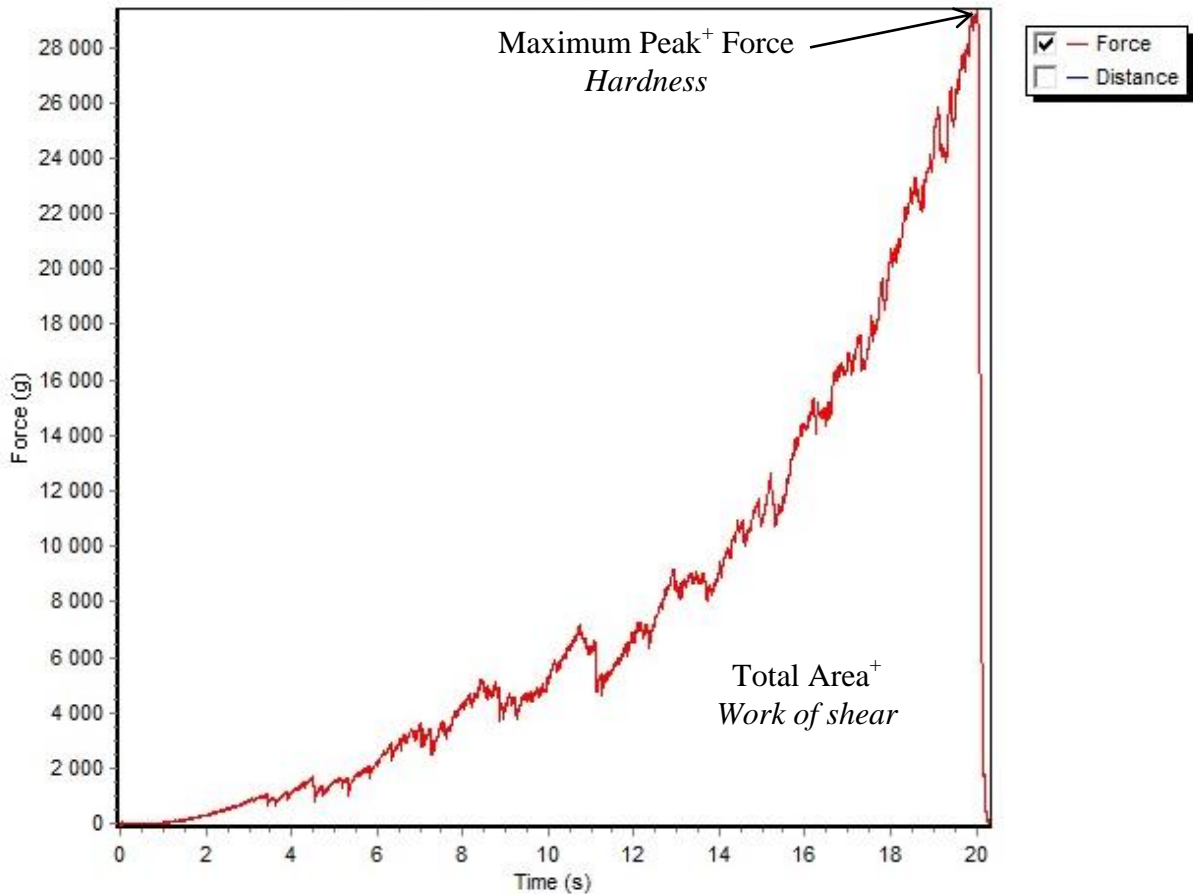


Figure 4: Example graph for potato chips measurement

Data Analysis

The force required shearing the sample to a certain strain or distance can be measured in the units [g] or [N]. Except raw data (force, time and distance) the program also directly provides calculated results such as *mean value* and *standard deviation*.