

Production: CHOCOLATE COATED WAFER BISCUITS

Objective: Comparison of resistance to cutting of chocolate coated wafer biscuits by a knife blade from two different manufacturing batches.

Type of action: Cutting

Test setting:

Speed	Test mode	Trigger	Target	Hold
2 mm/s	Distance (c)	10 gf	17 mm	0 sec

Accessory:

Blade of Warner Bratzler, Platform

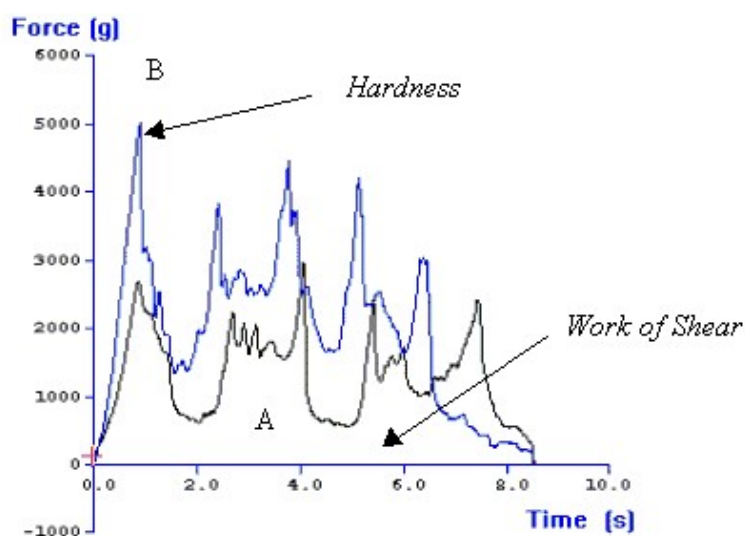
Sample Preparation:

Samples are removed from their place of storage just prior to testing. Samples may need to be cut to allow them to fit on the platform. For comparison purposes, sample dimensions should be noted and kept constant. The sample is then placed centrally under the Knife Edge.

Test Set-Up:

The Slotted Insert is secured on the Heavy Duty Platform. The Knife Edge is attached to the load cell carrier and lowered into the slotted insert. The Heavy Duty Platform is repositioned so that there is no contact between the blade and slot surfaces and a 'blank' test run as a check. The blade is then raised to allow placement of the sample.

Typical plots:



The above curves were produced from chocolate coated wafer biscuits, tested at 20C.

Observations:

The first peak force readings (i.e. cutting of the first wafer layer) for each type appear to be considerably different - type B being much harder than type A. The blade continues to shear each layer of wafer, each followed by a layer of cream. These are seen as four comparative major peaks and troughs sets for each wafer biscuit batch.

Data Analysis:

- ☒ Max Force
- ☒ Area (+)

Results

Wafer Type	Mean First Peak Force 'Hardness' (+/- S.D.) (kg)	Mean Total Area 'Work of Shear' (+/- S.D.) (kg s)
A	2.64 +/- 0.49	1.42 +/- 0.38
B	4.06 +/- 0.07	1.98 +/- 0.22

Notes:

- The Noise emitted during this test can be measured and analysed using an Acoustic Envelope Detector.
- Storage, packaging and handling of the sample before testing are considered variable conditions under which the biscuits are tested. These conditions should be identified and kept constant for comparison purposes.
- When attempting to optimise test settings it is suggested that the first tests are performed on the hardest samples to anticipate the maximum testing range required and ensure that the force capacity allows testing of all future samples.