Production: DOUGH

Objective: Proving force of dough due to yeast performance using a cylinder probe

Type of action: Creep test

Test mode settings:

Speed	Test mode	Trigger	Target	Hold
0.5 mm/s	Creep test	300 gf	301 gf	1800 sec

Accessory:
Dough hardness rig, φ 50 mm cylinder probe.

Sample Preparation:
Immediately after kneading, place a 100g ball of the prepared dough into an oiled dough pot. Flatten the ball by placing the extending dough pot lid into the pot cavity and pressing down gently. This should be carried out just prior to testing.

Test Set-Up:
Place a controlled temperature water bath e.g. 40C on the machine base. Position the dough pot centrally under the probe in the water bath. Commence the test immediately.

Typical plots:
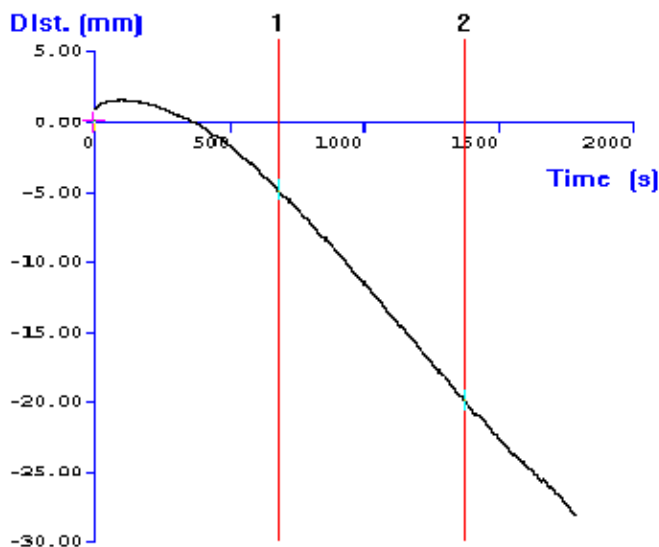
The above curve was produced from 100g of bread dough, tested at 40C.

Observations:
Once the trigger force of 300g is attained, the probe then proceeds to compress the sample until a force of 301g is attained. The increase in the positive displacement region is as a result of the probe compressing to such a distance as to achieve this specified constant force. The plot will cease to increase at such time as the dough begins to prove. The rise in the sample is indicated by a decrease in the compression distance caused by the force of the sample pushing the probe upwards whilst maintaining the specified constant force. The sample will then proceed to prove for approximately 30 minutes and will subsequently continue to push the probe upwards.

Data Analysis:

☒Cursor mark find point by user (Gradient From700 to 1400 second)

Notes:

● In order to make comparisons between tests, it is crucial that the sample preparation is exactly the same. As time is a critical variable, this should also be carefully controlled.

● The positive region of the plot should not be included in the analysis of the data as this region is potentially variable between samples due to possible differences in contact area when the trigger force is attained and the time at which the sample begins to prove; yeast multiplication, which causes dough to rise, will be paused in stressed conditions. It is suggested for this reason that, in order to allow comparison of samples, a linear region of the negative plot should be selected, and a macro set up for all subsequent samples.