

QUALITY CONTROL OF WHEAT AND FLOUR

CONSISTOGRAPH

The Consistograph determines the water absorption capacity of wheat flour in only 4 minutes. Dough behavior (optimum development time, tolerance to mixing, and rate of breakdown during mixing) can then be evaluated in 8 minutes. The total test takes 8 + 4 = 12 minutes mixing time. The consistency of dough samples made up in any industrial mixer also can be measured in only 10 seconds.

Approved in 1998 by the AACC as Method # 54-50, it is an indispensable counterpart to the Alveograph NG when testing flour from extra hard or strong wheat types, or with high levels of starch damage. It rapidly provides the information needed to run the Alveograph test method at the optimum water absorption for these flour types.

The system consists of two parts: 1) a mixer equipped with a double arm mixing blade, with a pressure sensor on the rear wall. 2) An Alveolink NG modified to record mixing curves, and calculate the water absorption.

First a test is run at constant hydration. During this test, the pressure inside the mixer is recorded versus time. (Fig. 1) As the dough gains consistency it presses harder on the sensor, and as it breaks down it presses more softly on the sensor. At the end of mixing, the maximum pressure PrMax is found. This value then is used by the Alveolink NG to estimate the water absorption of the flour to reach the targeted consistency.

Next the Alveolink calculates the amount of flour and salt water to be used for evaluation of the dough mixing properties, keeping a constant dough weight. This second test at the adapted hydration evaluates dough tolerance, stability and optimum mixing time. The strength of the wheat is easily evaluated this way. (Fig. 2)

Software is also included to link to a PC for transferring and storage of curve data files. This data can be easily imported into spreadsheets for reporting or graphing as well.

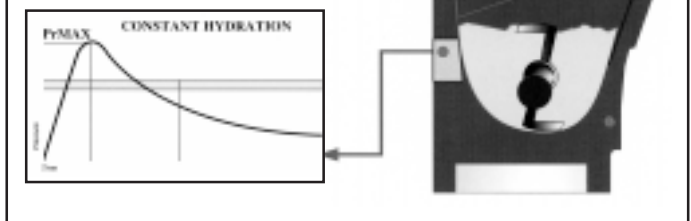
For more information on the use with the Alveograph, see the Alveo-Consistograph information on the following page.

220V, 1 PH, 50/60Hz. Dims. 1.2m L x 0.6m D x 0.6m H.
 Bench space: 1.5m, Net wt. Mixer 39 Kg., Link + printer 12 Kg., Ship wt. Mixer 46 Kg., Link + Printer 27 Kg.

CHOPIN

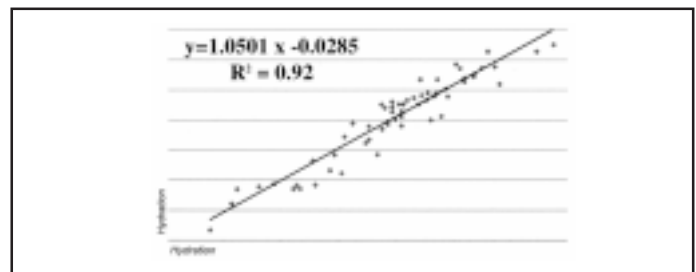
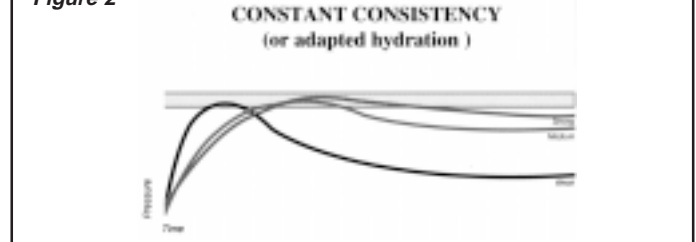


Figure 1



Mixer Configuration

Figure 2



Example of Mixing Curve and Water Absorption Correlation Plot

Consistograph No. CONLINK