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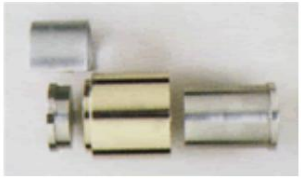
Guideline for the Determination of Resiliency (by KAREVA Marketing GmbH)

Resiliency Testing Protocol.

A test piston and cylinder like the Carver 2090 is an off the shelf item suitable for this testing:

No. 2090 - 1.125" I.D. Stainless Steel Test Cylinder and Pellet Mold
For use with pellet presses for molding, forming bricks, briquettes, pressure forming, crushing, pressing plant and animal tissues, fluid extraction, extrusion and flow tests.



1. In this picture the small piston on the left is placed in the bottom of the cylinder. The sample is loaded from the other end and the large piston is placed on top of the sample
2. The baseline distance is from end to end of the pistons without sample. $L_{baseline}$
3. A small amount of material is loaded into the test cylinder, depending on the size of cylinder and the bulk density of the material being tested. The length from piston to piston is measured. L_{sample}
4. The sample is pressurized in a to 10,000 psi, held for about a minute and the length from piston to piston is measured. $L_{compressed}$
5. The pressure is slowly removed to 0 psi and the length from piston to piston is measured. $L_{recovered}$
6. Steps 4 and 5 should be repeated until the lengths no longer change. It may take several cycles.

The resiliency can be determined using the following formula:

$L_1 = L_{baseline} - L_{compressed}$

$L_2 = L_{baseline} - L_{recovered}$

$\%\ Resiliency = (L_2 - L_1)/ L_1 * 100$

A lab press that is suitable for this experiment is:

Carver Standard Presses:
12, 25 and 30 ton capacity

Press No. 3851
(Model C) Twelve ton, manual, two-column hydraulic lab press. Similar to Mini C above, but larger, heavier construction with daylight to 18". Easy-to-read dual scale gauge is calibrated in pounds and metric tons.

CE available