

## Deformation Tests of Polishing Pads on CMP Tester mod. CP-4

### Samples:

Polishing pads consisted of two layers, polyurethane 2 mm thick, and foam 1.5 mm thick, connected with an adhesive film. We separated the layers by peeling off and conducted the tests on the polyurethane and foam layers separately.

### Testing Procedure and Parameters:

A  $\varnothing 6''$  pad was mounted as a stationary lower specimen. Its upper surface was brought into contact with an upper metal specimen  $\varnothing 1''$ , moving in vertical direction. A compressive normal load  $F_z$  was applied by lowering the upper specimen with a constant speed of 5 micron/sec. During the test, both pad deformation and normal force

were continuously monitored and recorded. Before starting pad compression tests, a similar testing procedure was conducted without a pad to establish a baseline; data of this pre-test was subtracted from the pad results.

### Observations:

1. The results of the compression test confirmed that the foam layers on both groups of pads were practically identical.
2. The field-observed differences in durability of the pads were due to deformation properties of their polyurethane layers.

### Data Examples:

