**Summary of Experiments (1/2)**

* To determine the spring constant of the cylinder, several experiments to measure the force exerted on the centers of three cylinder diameters — Ø32, 42 and 74 mm — were carried out by stretching the centers of the flexible cylinders without fibers.
* To measure the applied force and center’s movement, a screw was affixed precisely in the center of the cylinder, to which a steel cable was connected. The other end of the cable was connected to a dynamometer. These steps were taken when the cylinder was in a horizontal position and fastened at both ends.
* This set-up enabled the applied force to the center as well as the movement of the cylinder’s center to be measured.
* Attached further on is a description of the experimental array using the same set-up as that employed for all the fiber compression experiments, only without the fiber within the flexible cylinder.
* A continuous sampling was taken of the applied force on the cylinder center and the movement of the flexible cylinder from its starting centerline.
* In some of the flexible cylinder diameters, experiments were carried out until there was a movement of 65 mm of the cylinder’s center from the central axis at the start of the experiment.

**Summary of Experiments (2/2)**

* Each experiment was carried out in three iterations to test for hysteresis; that is, until reaching the required lengthening of the flexible cylinder and then releasing to the initial zero shortening.
* The summary of the results in the comparative graphs of the experiments indicates that with small movements of the flexible cylinder’s center (10 mm), the relation between the movement and the force is linear; with larger movements in Ø42 and 74 mm cylinders, the relationship is polynomial.
* The last slide shows a comparison of the implemented experiment on a Ø42 mm cylinder with the results obtained from the numerical simulation carried out with ABAQUS.