August 1974 B74-10111

NASA TECH BRIEF

Ames Research Center

Accurate Thickness Measurement of Easily Compressed Materials

The problem:

To obtain a meaningful measurement of the thickness of a sheet of easily compressed material.

The solution:

Sandwich the material between two sheets of glass under slight pressure.

How it's done:

Place the sheet of material (such as fabric or wet paper) between two thin, uniform, and flat sheets of glass of known thickness; apply a light pressure of the order of 40 to 80 g/cm^2 by means of weights. With the aid of a micrometer, measure the thickness of the sandwich and then subtract the thickness of the two sheets of glass.

Microscope slides are usually quite uniform in thickness and are of a size adequate for most measurements. Alternatively, two flat surfaces of metal can be used. Lead shot and even large machine nuts may be used to press the sandwich. Uniform loading of the material can also be obtained by use of thick plates of smooth metal or lead glass.

Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Ames Research Center
Moffett Field, California 94035
Reference: B74-10111

Patent status:

NASA has decided not to apply for a patent.

Source: Larry W. Carlson of
Rocketdyne/North American Rockwell
under contract to
Ames Research Center
(ARC-10551)

Category 04