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## FBF 2006-1 - FASTFOOT® ANGLE OF INTERFACE FRICTION

Location: Fab-Form warehouse
Date: Thursday April 20 2006, 5:00 PM for about 2 hours
Objectives of Test
To measure the angle of interface friction of Fastfoot $®$ standard fabric.
Present: Rick Fearn
Description of Apparatus \& Test


One end of the fabric was wrapped around a 1 "x2", stapled, and attached to the end of the work bench. A second piece of fabric was wrapped around a $1^{\prime \prime} \times 4$ " and attached to a spring scale and pulling mechanism.

Various amounts of sand (and steel bars on top of the sand) were placed in a plastic shopping bag and placed on the top of the two sheets of plastic. The weight of the sand was measured with the same scale as used to measure the force to ensure proper calibration. Force measurements were made three times for each weight as shown in the table below:

| Weight | Force1 | Force2 | Force3 | Average <br> Force |
| ---: | ---: | ---: | ---: | ---: |
| $\mathbf{0 . 0}$ | 0.0 | 0.0 | 0.0 | $\mathbf{0 . 0}$ |
| $\mathbf{1 7 . 2}$ | 12.0 | 11.0 | 10.0 | $\mathbf{1 1 . 0}$ |
| $\mathbf{2 8 . 0}$ | 16.0 | 17.0 | 17.0 | $\mathbf{1 6 . 7}$ |
| $\mathbf{3 4 . 8}$ | 21.0 | 21.0 | 21.0 | $\mathbf{2 1 . 0}$ |
| $\mathbf{4 6 . 6}$ | 29.0 | 29.0 | 29.0 | $\mathbf{2 9 . 0}$ |
| $\mathbf{6 1 . 6}$ | 38.5 | 38.5 | 38.5 | $\mathbf{3 8 . 5}$ |

It was not possible to measure any difference between the starting friction and sliding friction - the bag moved continuously once sufficient force had been applied.

## Analysis of Test Results

The graph is a straight line function going through the origin, at an angle of 32 degrees to the horizontal.


## Angle of Interface Friction = $\mathbf{3 2}$ degrees

