A Comparison of Friction Measurement Results Using Two Slipmeters

李開偉,洪菁穗
Industrial Engineering and System Management
Management
kai@chu.edu.tw

Abstract

Assessment of floor slip slipperiness is of paramount importance in quantifying the risk of slipping and falling incidents. Friction measurement is one of the major approaches in assessing floor slipperiness. The Brungraber Mark II is one of the slipmeters commonly used in the USA. Operation of the Mark II requires repetitive strikes of the footwear pad on the floor for a single reading. One of the disadvantages of the Mark II is that the operator needs to lift a 4.54 kg weight and releases it with an awkward kneeing posture for every trial. To remedy this drawback, the designer of Mark II has fabricated a new slipmeter named Mark III. Instead of been driven by a 4.54 kg weight, the Mark III is activated by a spring. This requires less physical effort in both carrying and operating as compared to that of the Mark II. However, there is no published data examining the reliability and consistency of this new device. In this study, we compare the friction measurement results of the two slipmeters under four floors, four footwear materials, and three surface conditions.

Keyword：slips & falls, friction measurement, coefficient of friction, slipmeter