

ROCHON REPORT

ROCHON ENGINEERING INCORPORATED

The Brungraber Mark II Slip Tester – An Engineering Tool for Slip and Fall Investigations

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February 2004

Pedestrian slip and fall incidents often result in debilitating injuries and in some cases, death. Unintentional falls resulted in 107,218 hospital admissions and 5,045 in-hospital deaths in Canada in 1999 according to the Canadian Institute for Health Information. The annual direct health care costs associated with unintentional falls in Canada between 1995 and 1996 were estimated at \$2.4 billion dollars according to a study titled “The Economic Burden of Unintentional Injury in Canada” conducted by the Hygeia Group in 1998. Unintentional falls can also lead to costly insurance claims and lawsuits in which liability is called into question.

Several factors can contribute to a slip and fall incident, some of these factors include:

- Environmental Factors
 - Construction and maintenance of the fall location (non-compliance with Building Code and Standards requirements)
 - Walking surface material type and contamination/condition
 - Transitions between walking surfaces
- Pedestrian Contact Surface Factors
 - Footwear material type and contamination/condition
- Human Factors
 - Physical and mental condition
 - Impairment by alcohol or drugs

- Behavioural Factors
 - Walking/running speed



An Engineer can analyze the slip and fall location and evaluate its characteristics and determine whether it complies with the Ontario Building Code and other applicable standards requirements.

Often a critical consideration in evaluating slip and fall incidents is the level of slip resistance available between the pedestrian’s footwear and the walking surface.

Rochon Engineering Incorporated uses the **Brungraber Mark II slip tester** (a portable inclineable articulated strut slip tester) to aid in slip and fall investigations. The Brungraber slip tester measures the static coefficient of friction value of a wet or dry walking surface. Tests are conducted in a

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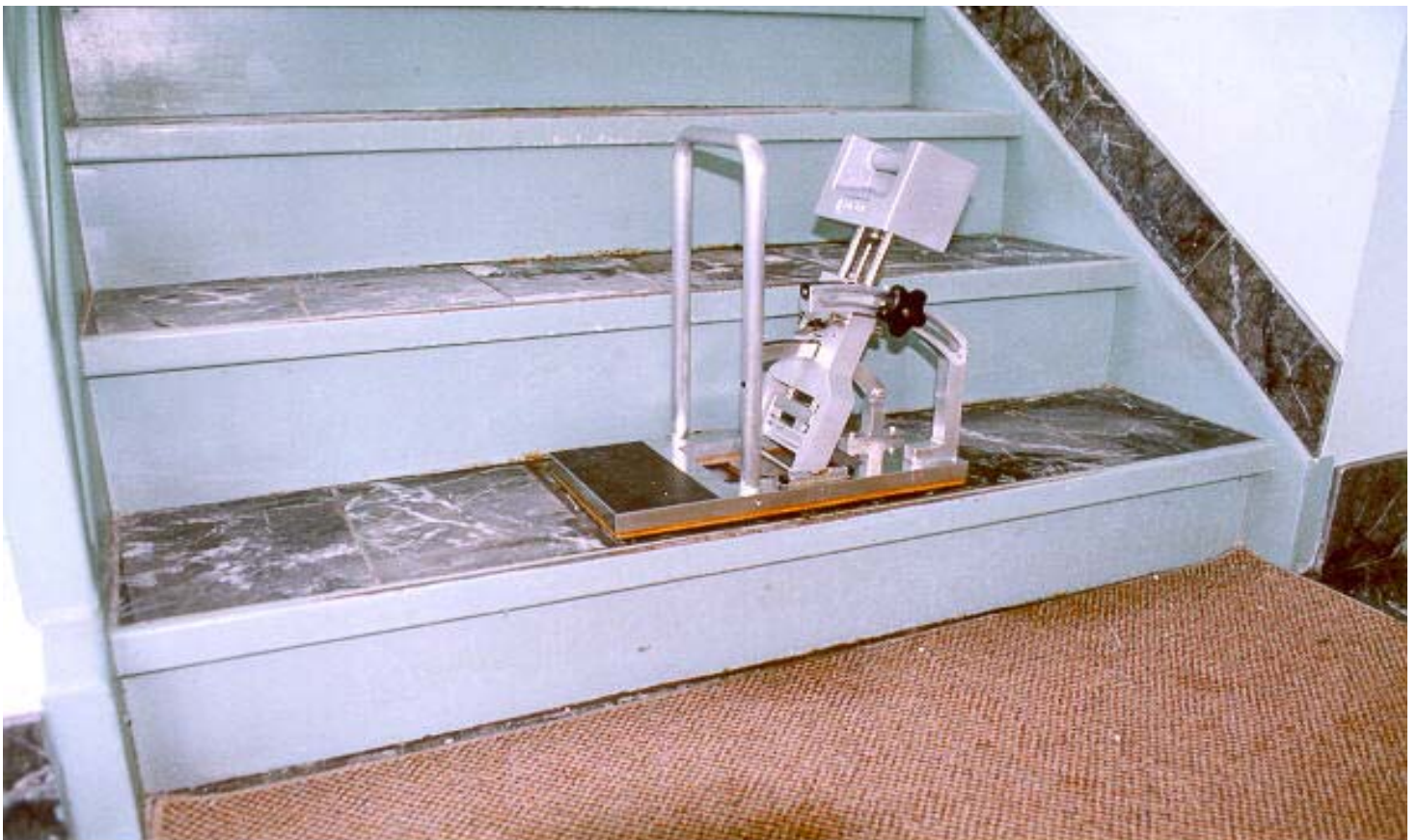
non-destructive manner on site or in our lab on a sample of walking surface material. A higher friction value represents a higher level of slip resistance.

The **Brungraber Mark II** slip tester is an approved test recognized by the American Society for Testing and Materials (ASTM) and the National Fire Protection Association (NFPA). The Brungraber slip tester also has been used in various private industries for slip resistance testing of walking surfaces.

The measured static coefficient of friction value can be compared to values obtained on other floor surface materials. The sensor pad material used on the

Brungraber slip tester can be varied to evaluate different footwear, different walking surfaces, and different conditions such as wet, dry and/or contaminated surfaces. The Brungraber slip tester can be used for interior or exterior applications, in showers or bathtubs or on stairs.

An Engineering Evaluation of a slip and fall incident will lead to timely and effective management of insurance claims including the identification of possible avenues for subrogation and will also provide a foundation for litigation.



Brungraber Mark II Slip Tester on stair tread