

PEOPLE | PROPERTY | REPUTATION

# ASSET PROTECTION



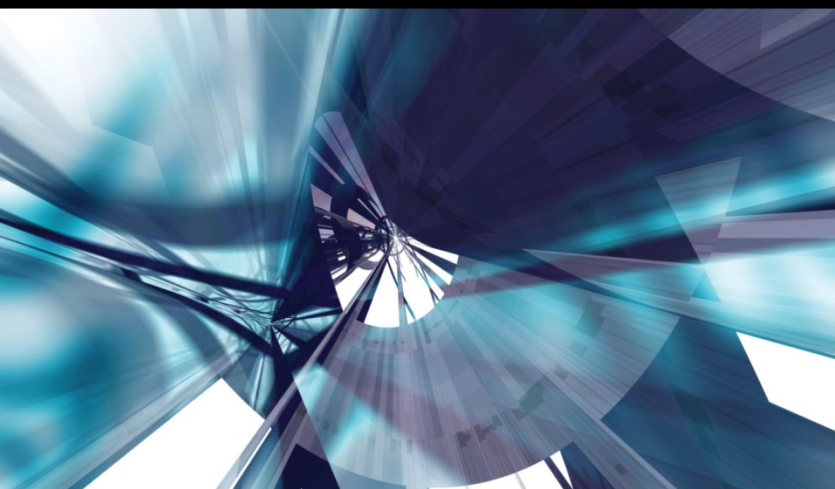
THE VOICE OF FOOD RETAIL 



# Roundtable

## Sharing Solutions for Slips, Trips and Falls

Fred Norton, Technical Director  
Liberty Mutual Insurance



# Roundtable

- More discussion on a few important topics for preventing falls
  - Walkway slip resistance
  - Fall hazard inspections
  - Incident investigation
- What other topics do you want to discuss?

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# Factors Impacting the Risk of Slipping

## Walkway

- Type, surface roughness, friction/slip resistance, wear/condition

## Footwear

- Type, wear/condition, cleanliness

## Contaminants

- Type, amount

## Person's walking

- Gait, balance, perception

# Tribology and Slip Resistance

- Study of the interaction of sliding surfaces
  - Friction
  - Lubrication
  - Wear



# How Do You Measure Slipperiness?

## Slipmeters or Tribometers



Brungraber Mark II (PIAST)  
Slip-Test Mark III  
Output = “slip resistance value”

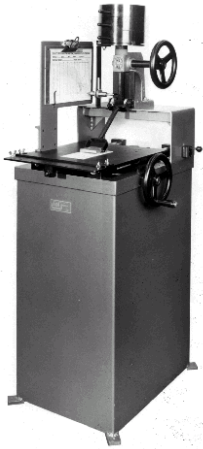


Horizontal Pull  
Slip Meter (HPS)  
Output = “slip index”

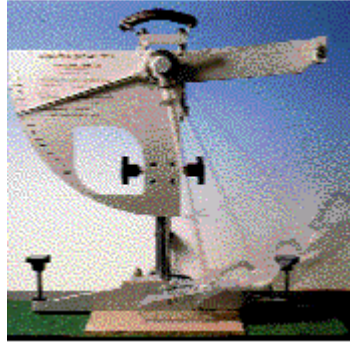


Excel (English) XL (VIT)  
Output = “slip index”

# Other Tribometers



James Machine  
ASTM D2047  
and UL 410



British Pendulum Tester  
TRRL Tester (BPST)



American Slip Meter



BOT 3000E Regan Scientific, Inc

# Selecting and Validating Slipmeters

- Research used to establish a process to examine the effectiveness of slipmeters. (Powers, et al., 2010 Journal of Forensic Science)
- Standard reference tiles are identified with varying levels of slip resistance.
- Slipmeters must accurately differentiate the four standard reference tiles.
- 12 Meters tested in this study
- Led to development of **ASTM F2508 – 11** *Standard Practice for Validation and Calibration of Walkway Tribometers Using Reference Surfaces*



# Walkway Surface Slip Resistance

- Different slip meters will give different results that may not be comparable
- Some slip meter manufacturers are moving toward defining a 'threshold value' for the specific type of slip meter used
- COF of .5 or higher doesn't guarantee a "safe" floor
- Transitions in levels of slip resistance may also be higher risk (example- higher to lower slip)

# Other Standards

- ANSI A137.1 – 2012 Specifications for Ceramic Tile
- ANSI/ASSE A1264.1 Safety Requirements for Workplace Walking/Working Surfaces
- ANSI/NFSI B101.1 Test Method for Measuring Wet SCOF of Common Hard-Surface Floor Materials
- ANSI/NFSI B101.2 Test Method for Determining the Impact on Wet DCOF of Various Chemical or Physical Walkway Surface Treatments
- ANSI/NFSI B101.3 Test Method for Measuring Wet DCOF of Common Hard-Surface Floor Materials

# Using Slip Resistance Information

Beware of laboratory product testing COF test data. May not reflect conditions of real world.

Floors behave differently wet, greasy and worn.

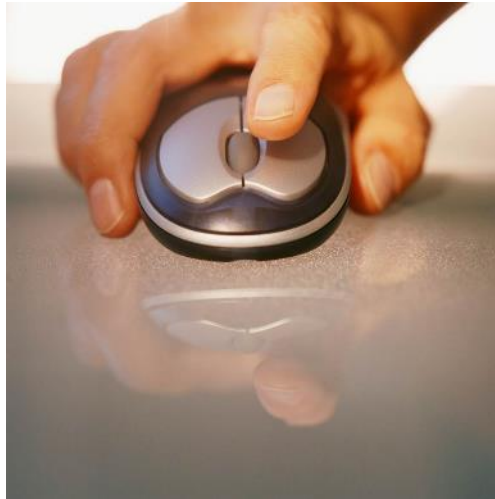
Evaluate flooring and finishes by slip-resistance wet, dry, and durability over time.

Consider surface roughness.

# Poll

Does your organization have a formal slip, trip and fall hazard inspection process?

- a. Yes, formal documented inspections
- b. Yes, but informal observations and no documentation
- c. No, not yet

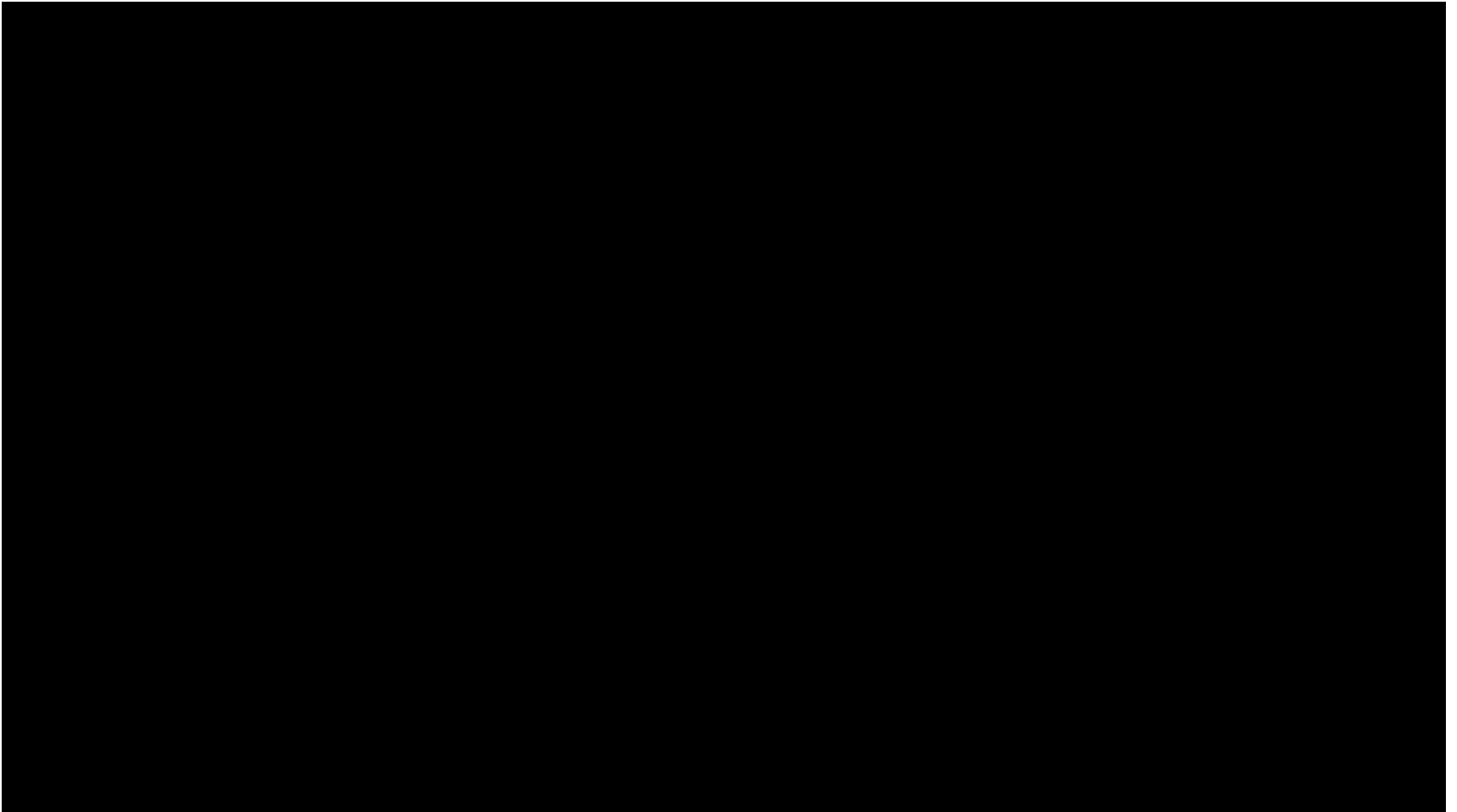


# Hazard Identification Process for Inspections

- Planned periodic inspections to identify and correct STF hazards
  - Checklists can be helpful but should be customized
  - Floor cleaning and inspection logs
- Training for ‘inspectors’
  - Security, safety committee, etc.
- Defined process for responding to the inspection findings
- Accountability and audits
  - Include vendors and cleaning contractors
- Employee involvement and responsibility
  - Behavioral observation processes



# Incident Investigation Video Clip



# Incident Investigation and Surveillance

## STF Incidents Will Occur – Be Prepared

- Incident investigation
  - Process to investigate conditions, analyze causes/contributing factors and develop action plan to correct hazards
- Prevent future incidents and correct hazards
- Claim management
- Fraud deterrence



# Incident Investigation

- Training for staff
  - Those will be first to the scene and respond to public
  - Those who will secure the scene, conduct investigation and document
- Do's and don'ts on what to say or not say
- Witness statements
- Documentation and critical evidence for managing and defending claims



# Fall Safety Management

## Comprehensive and Systematic Process

