

## CXLT Certification Program

### Program Outline

#### **BASIC SAFETY ENGINEERING PRINCIPLES**

- Methodologies related to walkway safety and footwear safety.

#### **DEFINE THE HAZARD**

- Possibilities for slip and fall injury and in various environments and circumstances.
- Define human ambulation dynamics, stride phases and length, heel strike velocity, the ankle, biofeedback, and expectation.
- Physics of slipping. When do slips occur?
- Define *required* slip resistance and *available* slip resistance.
- Rationale for 0.50, and what does it mean.

#### **ASSESS THE RISK**

- Probabilities and magnitudes for injury and loss.
- Accurate reporting of fall injury events.

#### **MITIGATE HAZARDS OF SIGNIFICANT RISK**

- Measure *available* slip resistance, then compare with *required* slip resistance, to identify materials and conditions of significant risk.
- Define measures to correct conditions where the *available* slip resistance is less than the *required* slip resistance, including increase the *available* slip resistance, restrict access/exposure, and/or provide warnings.
- Factors that affect traction.
- Control the risk.

#### **SLIPMETER TECHNOLOGY: MEASURE AVAILABLE SLIP RESISTANCE**

- What is slip resistance, SCOF and DCOF. What about roughness?
- Must measure contaminated as well as clean and dry.

- Liquid contaminants: squeeze film, sticktion, residence time.
- Available slipmeter technology, historical and current.
- Test foot material.
- Why the reference tile? How slippery is ice?
- References, standards and codes

## **COMPETENT OPERATION OF THE ENGLISH XL VIT**

- Objectives: precision and consistency.
- Hands-on demonstrations and practice throughout the program.
- Basic principles of operation.
- The XL VIT machine: significant components, their functions, and what effects proper functioning.
- Loading the CO2 cartridge, using the regulator and setting actuation pressure.
- Proper firing of the slip meter: operator positions, grips, pressing the actuator button, timing of actuations, duration of application of force, delay between actuations to achieve a quiet cylinder and stable pressure, and other techniques.
- Test foot preparation, cleaning the test foot, and how test foot conditions effect results.
- Calibration of the test foot, significance of variations, remedies.
- Setup at the sampling location, and test surface preparation.
- Dry, wet-with-water, and special test conditions.
- Orthogonal test directions, and other test locations.
- Directional properties of test surfaces.
- Results patterns, when is enough enough?
- Absorptive and contaminated materials.
- Temperature and relative humidity affects on the slip meter and at the sampling location.
- Testing stairs treads.
- Testing grossly textured surfaces.
- Cleaning, storage, and shipping of your slip meter.
- Maintenance of your slip meter.

## **DOCUMENTATION METHODS**

- Recording test results.
- Reporting test results

**INDIVIDUAL OPERATIONAL COMPETENCY VERIFICATION  
DEMONSTRATION**

**SHORT ANSWER WRITTEN EXAMINATION ON WALKWAY SAFETY AND  
SLIP RESISTANCE SCIENCE AND TECHNOLOGY**

EXCEL TRIBOMETERS, LLC

237 Hanbury Rd East  
Suite 17, PMB 254  
Chesapeake, VA 23322

757 897-2853  
888 804-3727 fax

[pwidas@EXCELTRIBOMETERS.com](mailto:pwidas@EXCELTRIBOMETERS.com)

[www.EXCELTRIBOMETERS.com](http://www.EXCELTRIBOMETERS.com)

© EXCEL TRIBOMETERS, LLC. All Rights Reserved Worldwide. You may print off any information on this Web Site for your personal use, but no part of these documents may be otherwise reproduced in part or in full in other publications without the express, written approval of EXCEL TRIBOMETERS, LLC.