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HOW TO WIN YOUR PREMISES LIABILITY CASE

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HOW TO WIN YOUR PREMISES LIABILITY CASE

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I. Introduction.

Any premises liability case involves the following essential elements: an injured consumer, identifiable hazard, causation, notice and duty. Establishing the hazard is the primary requirement to successfully prosecuting a premises liability case. The condition of the premises must present an unreasonable risk of harm to the pedestrian. Typically, the hazard is a physical feature or condition that caused the injury.1 A link between the physical feature or condition must establish a causable link to injury. Certainly, the injury must be consistent with mechanism of injury. A useful tool to establish a hazard includes some sort of statutory or standard of care that controls the facts and circumstances surrounding the premises liability injury.

The most common premises liability case involves a consumer wrongfully injured as a result of a fall. Falls are the leading non-automotive cause of accidental death in the United States. According to the Consumer Product Safety Commission, falls account for more than

1 Many times, injury and causation may be proven as a result of physical evidence at the scene (i.e. water, ice, foreign substance, deviation on walkway) or other evidence, such as surveillance or security tapes, incident reports, photographs, warning cones, etc.

14,000 fatalities2 per year.3 Falls are the number one initiator of violent deaths among the elderly. It is estimated that millions of consumers suffer serious personal injuries from falls that are not life threatening every year. Falls are the leading cause of injuries requiring medical treatment.4

Falls are common at home, in public places and at work. A fall may occur in the bathtub, at a restaurant or on a steel eye beam suspended one hundred feet about the earth. The mechanism of falls include slick floors, inadequate or non-existent handrails, non—uniform step size, inadequate warnings and poorly planned pedestrian walkways.

II. The Science of Slip and Fall Cases.

The following shall serve as an overview of the scientific principles involved in slip and fall claims. The scientific principles are based on industry standards and regulations governing slip resistance.5 There are a host of experts that may be employed in a premises liability claim. An engineer or other safety professional may identify building codes, government standards and industry guidelines and whether they have been adhered to in the construction,

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2 As of 2004, United States fall statistics were as follows: falls accounted for nine percent (9%) of all fatalities; falls accounted for thirty three percent (33%) of all hospitalizations; and, twenty one percent (21%) of consumers injured by falls did not receive hospital treatment. (Rice, et al.). From 1989 through 1993, basic injury statistics have remained consistent. Frequency of accidental injuries, ranked as most frequent to least frequent: motor vehicle accidents, falls, firearms, poison, fire and drowning.

3 *National Electronic Injury Surveillance System, 1993 (hereinafter, NEIS).*

4 NEIS.

5 ASTM, F1637-95, 1.1 *Scope* - This practice covers design and construction guidelines and minimum maintenance criteria for new and existing buildings and structures. This practice is intended to provide reasonably safe walking surfaces for pedestrians wearing ordinary footwear. These guidelines may not be adequate for those with certain mobility impairments.

remodeling and maintenance of a premises.6 A bio-mechanical engineer and human factors expert can testify about human behavior and locomotion.

A. SLIP AND FALL INCIDENTS

1. Why do Consumers Slip and Fall?

Research suggests that slip and fall incidents occur when there is a failure of the "traction between the pedestrian's foot and the walking surface."7 Expert's describe the mechanism of a slip and fall incident as "a breakdown between the interface of a persons shoes and the surface on which the person is walking."8 The vast majority of slips occur because of a wet or otherwise contaminated surface. i.e. oil, grease, water, cleaning fluid, floor wax, etc.9 However, "[i]t is possible to walk on a surface slipperier than ice, without falling down if one knows of the hazard. Most falls result from an unexpected, localized spot that is slipperier than the surrounding floor."10

In recent years, an expert witness specialty has blossomed in the scientific field known as Slip Resistance. Although Slip Resistance has only recently undergone popular acceptance, it claims a theoretical background more than sixty years. The American Society for Testing and Materials (*hereinafter, ASTM)* defined Slip Resistance as the "relative force which resists the

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6 ASTM, F1637-95, 1.2 *Application* – This practice addresses elements along and in walkways including floors and walkway surfaces, sidewalks, short flight stairs, gratings, wheel stops and speed bumps. **Swimming pools, bath tubs, showers, natural walks, and unimproved paths are beyond the scope of this practice.**

7 *Slips, Trips and Falls, Safety Engineering Guidelines,* William English, CSP, P.E.

8 *Slips, Trips and Falls, English,* 1989.

9 *Slips, Trips and Falls, English;* Armstrong & Lansing, 1978.

10 *Slips, Trips and Falls, English.*

tendency of the shoe or foot to slide along the walkway11 [or walkway] surface [hardware]12". (ASTM, F1637-95, *Practice for Safe Walking Surfaces)*.13 In any situation, Slip Resistance is affected by the following variables:

a. Floor material and its finish

b. Pedestrian shoe bottom material and texture

c. Environmental surface contaminants.

d. Pedestrian gait dynamics. (*ASTM).*

A walkway is slip resistant if the "provision of adequate slip resistance to reduce the likelihood of slip for pedestrians using reasonable care on the walking surface under expected use conditions."14 Certain situations and conditions may make it more likely that a slip may occur. Before a fall occurs, the pedestrian controls only the selection of footwear and gait. On the other hand, the landowner or occupier is responsible for the type of flooring, the type of floor finish, proper floor maintenance and the removal of floor contaminants that cause or contribute to slip and fall incidents.

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11 ASTM, F1637-95, 3.1.14 *walkway* - walking surfaces constructed for pedestrian usage including floors, ramps, walks, sidewalks, stair treads, parking lots and similar paved areas which may be reasonably foreseeable as pedestrian paths. Natural surfaces such as fields, playing fields, paths, walks or footpaths, or a combination thereof, are not included.

12 ASTM, F1637-95 3.1.113 *walkway surface hardware* – includes manhole covers, cellar doors used as walking surfaces, junction box covers, cleanout covers, hatches, sidewalk elevator covers, sewer grates, utility covers, and similar elements that pedestrians can reasonably be expected to walk on.

13 ASTM, F1637-95 3.1.11 *slip resistance* – the relative force that resists the tendency of the shoe or foot to slide along the walkway surface. Slip resistance is related to a combination of factors including the walkway surface, the footwear bottom, and the presence of foreign materials between them.

14 ASTM, F1637-95 3.1.12.

2. What is a safe level of traction?

The National Institute of Standards and Technology (formerly known as the National Bureau of Standards (*hereinafter, NBS)*) authored the recognized standard for the minimum "safe" level of Slip Resistance and also how to measure Slip Resistance.15 Many governmental organizations and independent groups have adopted the *NBS* Slip Resistance standard, including Underwriter Laboratories16, Occupational Safety and Health Administration17, ASTM18, National Fire Protection Association19, and various uniform building codes.

The industry standard for the *minimum* amount of allowable friction resistance is .50. The minimum allowable friction resistance is termed the co-efficient of friction (*hereinafter, COF20*). A *COF* of .50 shall be considered the minimum value for a safe wet or dry walkway surface.21 The measurement normally made by an expert to determine the static co-efficient of friction (*hereinafter, SCOF)* is defined as the:

"force required to initiate relative motion between an object and a surface it is resting

15 *NBS* Technical Note 985.

16 Underwriters Laboratories, 410.

17 Federal Register, April 10, 1990.

18 ASTM, D-2047.

19 NFPA 101, 1994.

20 "Static" friction is the force present when the slip begins, whereas, "dynamic" friction occurs during sliding. Static coefficient of friction is the "standard utilized in the United States. It's crucial to know if your expert supports static or dynamic coefficient of friction since the latter is approximately 75% less, indicating a potentially misleading and more slippery condition." *See,* Slips, Trips and Falls: A Primer, Nevada Lawyer (April, 1995).

21 "Interior walkways that are not slip resistant when wet shall be maintained dry during periods of pedestrian use." ASTM F1637-95, 4.1.1 *See,* Nevada Lawyer (April, 1995).

on, an articulated strut instrument can be used where the tangent of the angle from the vertical at which the slipping occurs is the *SCOF."*22

According to the *NBS, "SCOF* is the ratio of the force required to move the object to its mass."23 *SCOF* is measured between two surfaces (i.e. bottom of a shoe and a walkway surface) that are in direct contact with each other. The higher the friction resistance, the less likely that a slip will occur.24

For example, if five pounds of force are required to push a ten pound block resting on a floor, the *SCOF* is within minimum acceptable limits. The *SCOF* between the block and the floor would be.50. To the contrary, soapy water on a marble floor may have a *SCOF* lower than ice (as low as .10 and well below the minimum safety level). It must be stressed that the .50 *SCOF* level recognizes a *minimum* acceptable level of friction before a slip occurs. In a particular situation, a reasonable standard of care may be much greater25 depending on the anticipated use, the actual use and the volume of pedestrian traffic in the area.

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22 ASTM; *English, Learning to Speak Technobabble, 1995.*

23 *SCOF* is determined by the following mathematical calculation = Horizontal Force [that minimum force required to start the object slipping] divided by the Vertical Force [the mass of the object].

24 A numeric value between 0 and 1 are used to describe the ratio of force of friction to the weight of an object measured by sliding an object along the surface. The force necessary to slide the object is measured in pounds. The higher the number achieved, the more slip resistant the surface is considered. *Duke v. American Olean Tile Company,* 155 Mich.App. 555, 400 N.W.2d 677, 679.

25 In Marion County, Indiana, the *Housing and Environmental Standards Ordinance,* mandates that the "[e]very…floor…stair… and appurtenance thereto, shall be safe to use… and shall be kept in sound condition and good repair." Sec. 10-701. The purpose of the ordinance is to "protect, preserve and promote the physical…well being.. and to protect the safety of the people." Sec. 10-102. The ordinance "shall apply uniformly to the construction, maintenance, use and occupancy of all residential buildings and structures…[within Marion County, Indiana]." Sec. 10-103. A "safe" level of Slip Resistance is contingent upon many factors that may raise the applicable level of *SCOF* above the minimum .50 standard..

The *Americans with Disabilities Act26 (hereinafter, ADA)*, enacted on July 26, 1990 mandated a higher *SCOF* than the recognized industry standard of .50. The Architectural and Transportation Barriers Compliance Board authored the *ADA* to assist the Department of Justice to establish accessibility standards for new construction and significant remodels. The standards apply to commercial facilities and places of public accommodation. The *ADA* prescribed a minimum *SCOF* of .60 for level surfaces and .80 for walkway ramps. The *ADA SCOF* provides a higher standard of slip resistance for the physically challenged.

3. How is Traction Measured?

At the present time, there are more than 40 manufacturers of devices to measure Slip Resistance. The devices are called Tribometric Devices (also known as a Slipmeter). There are three recognized Slipmeter models (Drag-Type Meter27, Articulated Strut Device28, Pendulum Device29). Although the three types of Slipmeters are very different in appearance, each consists of a "shoe" or material (i.e. rubber sole, leather sole) placed against the floor to measure the minimum amount of slip involved before a fall is likely.

Each Slipmeter model exhibits individual characteristics and biases. Slipmeter results

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26 *Americans with Disabilities Act,* Public Law 101-336.

27"[C]onsists of a weight of a known value, having a face of a certain shoe sole or heel material, which can be drawn across a floor surface in such a way as to permit the measurement of the force needed to initiate motion (static friction) or to maintain motion (dynamic friction)." *NBS Technical Note 953, 1977.*

28 "[A]pplies a known constant vertical force to a shoe faced with a certain sole or heel material and then applies an increasing lateral (forward) force until slip occurs. The ration of lateral force at lip to the known vertical force is the static coefficient of friction." *NBS Technical Note 953, 1977.*

29 "[C]onsists of a pendulum, faced with a certain shoe sole or heel material, which can be adjusted to sweep a path across a flooring surface so that the contact pressure between the facing and the floor follows a predetermined time-dependent path. The resulting loss of energy of the pendulum is claimed to be a measure of the dynamic friction." *NBS Technical Note 953, 1977.*

vary widely depending on the type of meter, the contaminants, and the type of material being tested30. As a general rule, most Drag-Type Slipmeters are accurate only when testing the amount of slip involved in a dry surface area. Some Slipmeter manufacturers claim (with varying results) that their product is relatively accurate in testing clean, wet surfaces.31 No Slipmeter product will generate reliable data where surfaces are contaminated with fluids like water, grease and wax in combination.32

It is important to note that Slipmeter calibration is very tricky and may yield drastically inaccurate results. A competent expert is essential to determine if the proper Slipmeter was selected for the appropriate test and whether the Slipmeter test results are accurate and scientifically verifiable.

4. Situations that Cause Slip and Fall Incidents.

Absent obvious causes (ice, snow, fluid spill) certain types of building materials may be a major culprit of slip and fall incidents. The most dangerous flooring material (even when dry)

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30 DRAG-TYPE SLIPMETER – Results may be seriously affected by the velocity at which the sled is being pulled across the floor. During the test, the sled may stick in some areas as opposed to others and cause inaccurate readings. Finally, the longer that the sled sits on the floor, any water or contaminant will be thinned such that the adhesion characteristics will be increased. This device is recommended only for use on dry surfaces.
ARTICULATED STRUT DEVICE – The most common strut device is the James Tester. This device patterns normal human gait. The James Tester is a reliable machine that must be adjusted frequently while in use to assure accurate results. This device is recommended only for use on dry surfaces. The James Tester is the only device referenced in the ASTM standard. The James Tester is recommended and generally reliable to determine SCOF of flooring materials (was, polish, stripping agents).
PENDULUM DEVICE – Adjustment of this device is critical. Critics argue that the speed of the pendulum is not representative of normal human motion. This is an excellent device to test slip resistance on wet surfaces. *NBS Technical Note 953, 1977.*

31 Wet surfaces present a unique problem since the COF of wet surfaces cannot be measured directly due to the effects of "adhesion" present in the test procedure. The best any expert can due under these conditions is to measure the "dry" COF and adjust it to those representative of "dynamic" conditions (approx. 75% of dry, static COF). *Nevada Lawyer*, April, 1995.

32 *English.*

include terrazzo, marble and may types of finished/polished tile. These materials are commonly used at high pedestrian traffic areas like mall entrances, airports, restaurants and the like. Terrazzo, even when dry, is among the most hazardous flooring material as its SCOF if very low.

Other recognized hazards include floor or ramp paints commonly applied to sidewalks, to crosswalks and to handicap parking spaces. All "[p]ainted walkways shall contain an abrasive additive, cross cut grooving, texturing or other appropriate means to render the surface slip resistant where wet conditions may be reasonably foreseeable."33 Unless slip resistant paint is used, painted walkway surfaces, when wet, may be as slick as ice. Such a situation will produce a lower *SCOF* than acceptable standards.

After installation, floor maintenance is also very important. Certain types of cleaning fluids, wax, polymers and floor finishes may cause very slick conditions. Also, cleaning technique may be a factor in creating or contributing to the possibility of a slip and fall incident. A safety professional can determine if floor/ramp paints, floor coverings and cleaning materials alter the *SCOF* to an unsafe level and provide expert testimony as to the standards in the industry for non-slip alternatives to reduce the dangerousness of the surface.

5. How to Reduce the Occurrence of Slip and Fall Incidents

The frequency of slip and fall incidents may be greatly reduced at relatively low cost. Abrasive materials including skid strips and slip resistant paint may be applied to reduce the

33 ASTM, F1637-95, 4.1.3.

SCOF of otherwise treacherous flooring.34 Floor mats, carpeting and warning devices may be useful in preventing or warning consumers of potential hazards. Finally, proper and frequent maintenance can reduce otherwise preventable hazards. A safety professional may provide compelling evidence not only on liability issues, but provide the ultimate trier of fact with practical solutions on how the incident (and future incidents) may be prevented.

Most states adopted the Uniform Building Code (hereinafter, *UBC*)[35] The *UBC* was first enacted in 1927 and is updated every three years. In Indiana, a building is only required to comply with the code in force at the time that a building permit was issued. Buildings are not required to be retrofitted for future changes to the *UBC*. However, buildings that have undergone substantial remodeling must follow the current *UBC* standards.

34 Some floor manufacturers recognize the need to reduce the likelihood of slip ad fall incidents. American Olean, manufacturer of popular DALTILE products that are commonly used in office buildings, malls, restaurants and other public areas recommends:
"a" Surface Coatings – A simple, painless, quick fix; however, the negative is that they wear off and have to be replaced on a regular basis.
B. Surface Etchings – Hydrochloric acid is normally used, causing damage to the glaze and thus improve the slip resistance. In the long-term the glaze has been damaged and maintenance will increasingly become more difficult. How that balances against an improved COF must be determined by the end user. This product is endorsed by major national restaurant chains in increasing slip resistance of tile floors.
c. Shot Blasting – Least desirable alternative because the surface will be rough. Proven viable on unglazed quarry tile and porcelains, but should be done lightly on exterior applications only." DALTILE, *The FAQ's on Slip Resistance.*

[35]The *UBC* has been adopted by the State of Indiana. See, 675 IAC 13-2.1-1; 675 IAC 13-3.1-1; IC 22-13-2, 4, 9. The International Building Code is the universally recognized building code standard, upon which Indiana's code is based.

The *UBC* is "dedicated to the development of better building construction and greater safety to the public by uniformity in building laws.[36] The *UBC* mandates several functions with the ultimate goal to protect users of the premises. Such protection includes structural requisites (how a building must perform), building layout (interior building size and layout) and egress components (requirements for stairways, handrails, ramps and doorways). The *UBC* is an excellent resource of minimum, acceptable, safety standards applicable to all buildings[37] and is frequently the subject of expert testimony. Violations of the *UBC* may be the subject of a negligence per se jury instruction.[38]

III. UBC Overview.

As a general rule, "[e]very stairway having two or more risers (steps) serving any building or portion thereof . . ." shall have a handrail on each side of the stairway.[39] The handrail shall be placed not less than 34 inches nor more than 38 inches above the step. The handrail itself shall not be less than one and one half (1.5) inches nor more than two (2) inches as measured by cross section. Each handrail shall project no closer than one and one half (1.5) inches from the wall. There shall be no sharp corners on a handrail. Each handrail must run the

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[36]*Preface, Uniform Building Code,* International Conference of Building Officials, 1988.

[37] *UBC* does not apply to one and two family dwellings which are covered by a one and two family dwelling code.

[38]"In order for violation of statute or ordinance to be held as negligence *per se*, a trier of fact must determine whether the statute is applicable. It must decide whether the statute was designed to protect the class of persons in which the plaintiff is included against the risk of the type of harm which has occurred as a result of its violation." *Dawson by Dawson v. Long*, 546 N.E.2d 1265, 1268 (Ind.App. 4 Dist. 1989).

[39]*Section 3306 {a}{j}, UBC, International Conference of Building officials, 1988.*

entire length of the stairway. At least one handrail shall extend at least six (6) inches beyond the top and bottom risers.[40]

Hand rails serve three primary purposes:

a. To provide the approaching pedestrian with a visual cue as to the change in elevation and the presence of stairs.

b. To provide a support to the stair user, especially the elderly and others who may be motor-impaired.

c. To offer the victim of slipping or tripping incidents a chance to arrest an incipient fall by grasping the railing.[41]

An inadequate handrail may be as useless as no handrail at all and in most cases is an excellent theory of liability. Few expert witnesses will deny that handrails are nothing less than excellent safety measures and are available at relatively low to modest cost. A safety professional (and medical expert) may provide an adequate causal connection between the type of injury sustained and the improper system design.

IV. Stairway Requirements - An Overview

Most building codes provide uniform, minimum standards for the construction (and subsequent remodeling) of stairways.[42] The purpose of the uniform standards are to provide a

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[40] *UBC, Section 3306 {j}.*

[41] *English.*

[42] *See,* Marion county, Indiana, *Housing and environmental Standards Ordinance (HESO),* "[e]very . . . inside and outside stair . . . shall be safe to use and shall be kept in sound condition and good repair." Sec. 10-701. *HESO* applies to all Marion County buildings regardless of when building permit issued or remodel completed. In addition, *HESO* requires

"common experience" for consumers traveling from stairway to stairway.[43] It is believed that most persons "normally ascend or descend stairs without much conscious thought. This process depends on uniformity of step geometry, however. Recent research has shown that it is common for subjects' feet to clear step nosings[44] by less than [a quarter of an inch] 1/4" so that variations in riser height or tread depth predictably lead to missteps."[45]

Stairs with less than three steps shall be avoided.[46] If a short flight of stairs (less than three steps) or a single step transition exists, appropriate warning cues are required. Such warning cues include, "[h]andrails, delineated nosing edges, tactile cues, warning signs, contrast in surface colors and accent lighting . . . ."[47] The visual cues are necessary to warn pedestrians of an unusual step down or stairway. Even though visual cues may be used, such "cues or warnings do not necessarily negate the need for safe design construction."[48]

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that "every stair or step shall have uniform risers and uniform treads."

[43]*English.*

[44]ASTM, F1637-95, 6.1.2; F1637-07, 7.1.2 - Step nosings shall be readily discernible, slip resistant, and adequately demarcated. Random, pictorial, floral, or geometric designs are examples that can camouflage a step nosing.

[45]*English.*

[46]ASTM, F1637-95, 6.2.1, 2; F1637-07, 7.2.2 - Where a short flight of stairs cannot be avoided, "obvious visual cues shall be provided to facilitate step identification."

[47]ASTM, F1637-95, 6.2.2; F1637-07, 7.2.2.

[48]ASTM, F1637-95, 10.1; F1637-07, 11.1.

The *UBC* prescribes the minimum physical dimensions of a stairway. The width of a stairway shall not be less than 44 inches or 36 inches for an occupant load less than 49 persons.[49] The rise (height) of the step shall not be less than four (4) inches or greater than seven (7) inches.[50] The run of the step (flat portion of the step) shall not be less than 11 inches as measured horizontally.[51] The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch.[52] No door shall open over a stairway.[53] Further, a stairway with a distracting view shall be avoided.[54]

In general, uniform stairway dimensions are crucial for safe pedestrian movement. A safety professional may take into account the physical dimensions of the stairway, human locomotion and behavioral studies and render a scientifically verifiable opinion on whether the stairway was designed, constructed and maintained in a safe fashion.

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[49]*UBC, Section 3306 {b}.*

[50]*UBC, Section 3306 {c}.*

[51]*UBC, Section 3306{c}.*

[52]*UBC, Section 3306 {c}; See,* Marion County, Indiana, *Housing and Environmental Standards Ordinance,* "[e]very inside and outside stair or step shall have uniform risers and uniform treads." *Id.*

[53]ASTM, F1637-95, 6.1.3; ASTM F1637-07, 7.1.3.

[54]ASTM. F1637-95, 6.1.1; F1637-07, 7.1.1 - Stairways with "distracting" forward or side views shall be avoided. A "distracting" view is one which can attract the stair user's attention (i.e. advertisements, store displays), thus distracting the stair user.

V. ASTM Overview

The American Society for Testing and Materials (ASTM) was founded in 1898. Since that time, ASTM has developed into one of the largest voluntary standards development systems in the world. ASTM is a not-for-profit organization[55] which provides a forum for "producers, users, ultimate consumers, and those having a general interest to meet on common ground and write standards for materials, products, systems, and services."[56] Presently, there are 130 standards-writing committees that produce more than 10,700 standards each year. The standards are published in 73 volumes and divided among 16 sections.[57]

ASTM standards are reviewed, discussed, implemented and followed throughout the world. Although voluntary, the standards are an important step in establishing a basic level or minimum standard of care to be followed by individuals, businesses and manufacturers. Compliance with an ASTM standard does not necessarily equate compliance with a reasonable standard of care under individual circumstances.

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[55] Individuals may apply for membership in ASTM at the rate of $65.00 per year. A membership application or additional information (including standards) may be obtained by contacting ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428; Telephone: 610-832-9693; or, online at http://www.astm.org.

[56] ASTM, Foreword, p., iii. Note: Most members of ASTM Committees are comprised of members of industry and corporate America.

[57] ASTM Sections are identified as follows: Section 1-Iron and Steel Products; Section 2-Nonferrous Metal Products; Section 3-Metals Test Methods and Analytical Procedures; Section 4-Construction; Section 5-Petroleum Products, Lubricants and Fossil Fuels; Section 6-Paints, Related Coatings and Aromatics; Section 7-Textiles; Section 8-Plastics; Section 9-Rubber; Section 10-Electrical Insulation and Electronics; Section 11-Water and Environmental Technology; Section 12-Nuclear, Solar, and Geothermal Energy; Section 13-Medical Devices and Services; Section 14-General Methods and Instrumentation; Section 15-General Products, Chemical Specialties, and End Use Products; Section 00-Index.

A. Definitions, as prescribed by the ASTM -

1. Standard (noun) - a document that has been developed and established within the consensus principles of the Society and that meets the approval requirements of ASTM procedures and regulations.

2. Standard (adjective) - indicates consensus approval in accordance with ASTM procedures and regulations.

3. Provisional Standard - a document published for a limited period of time by the Society to meet a demand for rapid issuance of specific documents, such as an emergency situation, regulatory requirements, or other special circumstances.

4. Discussion - committee members review and comment on a provisional standard. A provisional standard is accepted upon subcommittee consensus.[58]

5. Classification - a systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use.

6. Guide - compendium of information or series of options that do not recommend a specific course of action.

7. Practice - a definitive set of instructions for performing one or more specific operations or functions that does not produce a test result.

[58] Regulations Governing ASTM Technical Committees, Section 14.

8. Specification - an explicit set of requirements to be satisfied by a material, product, system, or service.

9. Terminology - a document comprising definition of terms; description of terms; explanation of symbols, etc.

10. Test Method - a definitive procedure that produces a test result.

B. Initial Considerations - Does the Standard Apply?

The standards are published in booklet format each designated as a "Book of Standards". Each volume is published annually and approximately 30% of each volume contains revisions of standards previously adopted or entirely new standards.

The following procedure should be used to initially evaluate whether a standard may apply in a premises liability claim:

1. Has the Standard been adopted? If the standard is provisional (meaning that the standard has not yet been approved and adopted by an ASTM Committee), its applicability is questioned until unconditional approval has been made.

2. When was the Standard adopted? It is presumed that ASTM standards do not have retroactive application to factual situations that arose at prior to formal approval or adoption of the same.

3. Has the Standard been subject to revision? It is important to obtain the subject standards for the year prior to, during and after desired application to determine whether any fundamental changes have occurred, and if so, why

were the revisions made.[59]

4. Has the Standard been the subject of proposed revision or other discussion? If so, the ASTM Committee representative assigned to the subject standard will maintain all comments, discussions, voting patterns, etc. This information may be invaluable as Committee members (typically representatives of manufacturers or other industry peers) will submit their concerns in writing. These writings are maintained as a permanent Committee record.

There are several types of common hazards that cause pedestrian falls and are subject to expert testimony.

1. Speed Bumps

[59] Each Standard contains the following information: Designation Number (Internal code to easily access a Standard within a particular volume); the ASTM Committee and Subcommittee directly responsible for the standard; Year Standard was adopted, reapproved or revised.

Parking lots should be designed without speed bumps.[60] If a speed bump is located in a foreseeable pedestrian walkway or path, the protrusion shall be "transitioned by means of a ramp."[61] The speed bump shall be 'clearly marked with safety color coding to contrast with surrounding . . . ."[62] A painted speed bump must be slip resistant. "Caution" signs are recommended to warn pedestrians of the existence of the speed bump."[63]

2. Wheel Stops

[60]ASTM, F1637-95, 7.1; F 1637-07, 8.1.

[61]ASTM, F1637-95, 7.2, 7.3, 4.2.4; F 1637-07, 8.2,8.3,5.2.4.

[62]ASTM, F1637-95, 7.3; F1637-07, 8.3; ANSI Z535.1.

[63]ASTM, F1637-95, 7.3; F1637-07, 8.3.

Parking lots should be designed so that wheel stops are not necessary.[64] If wheel stops are used, the wheel stops should not be located in an area that can reasonably be foreseen as a pedestrian walkway.[65] Wheel stops should be made of concrete, not such material as landscape timbers.[66] All wheel stops should be in painted or identified in "contrast" from their surrounding.[67] Wheel stops shall be no longer than six (6) feet long and six and one-half (6½) inches in height above the parking surface.[68] The minimum width of pedestrian passage between wheel stops is three (3) feet.[69] There shall be adequate illumination of the parking lot so that pedestrians will be able to visually discern the presence of wheel stops.[70]

3. Carpet

Carpet shall be maintained so as to not create a pedestrian hazard.[71] Carpet shall be firmly secured and seams tightly maintained. *Id.* At no time shall there exist "loose or frayed edges, unsecured seams, worn areas, holes, wrinkles or other hazards that may cause trip occurrence." *Id.* All carpet shall be routinely inspected.[72] At no time shall shag-type carpet be

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[64]ASTM, F1637-95, 8.1; F1637-07, 9.1.

[65]ASTM, F1637-95, 8.2, 8.3; F 1637-07, 9.2,9.3.

[66]*English.*

[67]ASTM F1637-95, 8.3; F 1637-07, 9.3.

[68]ASTM F1637-95, 8.4, 8.5; F 1637-07, 9.4,9.5.

[69]ASTM F1637-95, 8.4; F 1637-07, 9.4.

[70]ASTM F1637-95, 8.6; F 1637-07, 9.6.

[71]ASTM F1637-95, 4.3.1; F 1637-07, 5.3.1.

[72]ASTM F1637-95, 4.3.2; F 1637-07, 5.3.2.

used on a stairway.[73]

4. Floor Mats and Runners

Building entrances shall be provided with mats or runners, or other means to help remove foreign particles and other contaminants from the bottom of pedestrian footwear.[74] Mats and runners shall be used, as needed, in inclement weather to keep building entrances and interior walkways dry.[75] Replacement of the mats or runners when saturated is mandatory.[76] Mats and runners shall be of sufficient design and area to control the tracking of contaminants onto the floor surfaces "reducing the likelihood of the floors becoming slipper."[77]

5. Exterior and Interior Illumination

Interior and exterior pedestrian walkways shall be adequately illuminated.[78] The illumination must be free of glare and shall be designed to eliminate the presence shadows. Also, of interest are provisions of the International Building Code and Life Safety Code. Each prescribes minimum footcandle[79] requirements for lighting. In general, a footcandle is measured by a light meter. The minimum standard for exterior illumination on walkway

[73]ASTM F1637-95, 4.3.4; F 1637-07, 5.3.4.

[74]ASTM F1637-95, 4.4.2; F 1637-07, 5.4.2.

[75]ASTM F1637-95, 4.4.1; F 1637-07, 5.4.1.

[76]ASTM F1637-95, 4.4.2; F 1637-07, 5.4.2.

[77]ASTM F1637-95, 4.4.3, 4.4.4; F 1637-07, 5.4.3, 5.4.4.

[78]ASTM F1637-95, 4.5.1, *et al.*; F 1637-07, 5.4.1, *et al.*

[79] Loosely defined as the amount of light falling on a given surface. The footcandle is equal to one lumen per square foot.

surfaces is 3-10 footcandle's. Other footcandle measurements typically used in litigation include: Restaurants (quick service, 50), (intimate, 15-30), Office Buildings (20-30), Retail Stores (30), Hotels (halls and elevators, 20-30), (lobby, 30-45), Residence (10-25).

6. Changes in Walkway Level

Adjoining walkway surfaces shall be made flush.[80] Unlike most codes, the ASTM requires that new construction as well as existing facilities comply with this requirement.[81] Where adjoining walkway surfaces meet, the following standards shall apply:

a. changes in levels greater than one-half of an inch (½) require a ramp or stairway to make the transition;

[80]ASTM F1637-95, 4.2.1; F 1637-07, 5.2.1.

[81]ASTM F1637-95, 4.2.1; F 1637-07, 5.2.1.

b. Changes in levels between one-quarter of an inch (¼) and one-half of an inch (½) shall be beveled between surfaces; and,

c. Changes in levels less than one-quarter of an inch may be made without any treatment.[82]

Most experts agree that pedestrian walkways should be designed to "facilitate foot traffic without introducing unnecessary impediments. It is better to find out how and where people tend to walk and design to that pattern than to try and conform everyone's behavior. . . ."[83] A safety professional should be utilized to present scientifically verifiable concepts for the design, construction and maintenance of parking lots and pedestrian walkways.

THE OPPONENT EXPERT - "THE BATTLE OF THE EXPERTS"

An Expert can play a pivotal role in a particular case and may often be instrumental in achieving a favorable outcome. In a premise liability case, an engineer or safety professional, in combination with a bio-mechanical engineer and human factors expert, may overcome the burden that the plaintiff was not injured, either wholly or in part, as a result of a self-initiated act. In addition, a credible expert may offer critical advice in handling pre-litigation matters and in conducting discovery after the filing of a lawsuit.

[82]ASTM F1637-95, 4.2.2, 4.2.3, 4.2.4; F 1637-07, 5.2.2; 5.2.3; 5.2.4.

[83]ASTM F1637-95, 4.2.2, 4.2.3, 4.2.4; F 1637-07, 5.2.2, 5.2.3, 5.2.4.

An expert witness may offer an opinion on the ultimate question, based neither on fact or reasonable conclusion, but on whether the client's interests are protected. Such an opinion may be grounded in nothing more than mere conjecture, speculation and at worst, intellectual and scientific fraud. There are many variables and contingencies in the causal analysis of a premises liability case. Expert conclusions may be massaged to assure a desired outcome *or* are contingent on many factors including the proper selection of testing devices and testing procedures, environmental conditions and accurate reporting.

To defeat the abuse of an expert witness opinion in a premises liability claim, it is important to hire a credible, reliable and honest expert to review, to document and to expose any inconsistencies in the proffered opinion. An expert opinion may be attacked on many grounds including a foundational deficiency, and that the opinion is not based on verifiable "scientific reasoning". There is no shortcut for adequate case preparation and the study and application of government standards, building codes and industry guidelines to the premise liability case.

Defense Expert Deposition Outline

I. Identification
- A. Name
- B. Business address
- C. Residence address
- D. Occupation or title

II. Professional License
- A. Licensed as a professional engineer and in Indiana?
  - 1. License number
  - 2. Field of specialty or registration
  - 3. Basis of license
    - a) Examination
    - b) Experience

c) "Grandfather clause"
d) Other

B. Licensed or registered in other fields in this state?
1. License or registration number
2. Field of registration or specialty

C. Licenses, registration or certification in other states?
1. License or registration number
2. Field of registration or specialty
3. Still active in other states?

III. Education

A. College or university attended
1. Degree awarded, if any
2. Years of attendance
3. Major or area of specialization

B. Graduate work or extended studies
1. Degree awarded, if any
2. Years of attendance
3. Major area of specialization

C. Specialized training
1. Area of study
2. Years of study
3. Areas of specialization

D. Academic honors or special recognition
1. When obtained
2. Sponsoring organization

E. Vanity Organizations

IV. Employment Background

A. Employment experience
1. For each employment
a) Job title
b) Field of activity
c) Percentage of time involved in safety
(1) Percentage of time involved in evaluating slip and fall accidents
(2) Duties and activities related to slip and fall cases
2. For each role as a consultant or expert witness
a) Hired by plaintiff or defendant?
(1) Percentage for each
b) Activities performed
(1) Measurements and testing
(2) Accident reconstruction
(3) Consultation

(4) Testimony
(a) Deposition
(b) Courtroom
(c) Declaration

3. Have any of your opinions been rejected or excluded by any Court? If so, when, case name, Court, attorneys involved, subject matter involved.

B. Background in premises management

1. Familiarity with industry maintenance procedures and policies (retail stores, apartments, hospitals, public buildings, etc.)
a) Basis of knowledge
b) How was it acquired?
c) When was it acquired?
d) Expert's employment within the industry in question
(1) Who was employer?
(2) When was employment?
(3) What duties gave expert specific knowledge?

2. Any documents form the basis of expert's knowledge of maintenance procedures?
a) Describe documents
(1) Name
(2) Author
(3) Publisher
b) Source of documents
(1) Trade journals
(2) Text books or treatises
(3) Discovery documents in other litigation
(4) Other
c) Location of books and documents
(1) Sufficient identity for subpena
(2) Physical location
(a) Address
(b) Custodian
d) Authoritative documents or text
(1) Author
(2) Reason

C. Witness publications

1. Has witness authored any books or articles on subject of slip and fall cases or premises liability?
a) Publisher
b) Name of book or article
c) When published?

2. Has witness published technical or scientific articles in other fields?

a) Publisher
b) Name of article
c) When published?

3. Has witness authored any treatise, article or other documents that have been rejected from publication.
a) Publisher
b) Name of treatise, article or other documents

V. Retention and Investigation

A. Retention

1. When was witness first retained by defendant?
a) Initial contact
(1) In person
(a) By whom?
(b) When contacted?
(2) By letter
(a) By whom?
(b) When contacted?
(c) Identify and mark as exhibit
(3) By telephone
(a) By whom?
(b) When contacted?
(c) Identify and mark notes from phone conversation as exhibit

2. What duties were assigned by defense attorney?
a) Review documents
b) Conduct examination
c) Reconstruct accident
d) Supply opinion testimony to counsel regarding any of the following:
(1) Hazard
(2) Notice
(3) Duty
(4) Causation
(5) Code violations
(6) Custom and practice of industry
(7) Other opinions
e) Did you suggest any other work, testing or the like that the defense counsel refused to authorize?
f) Did the defense counsel request any other work, testing or the like that you refused to do or were otherwise not qualified to do?

3. What information or documents were supplied to expert?

a) Identify and mark each document (including notes made by the witness based on personal conversations with defense attorney)

b) What was witness told of the plaintiff expert's theory and conclusions?

(1) Has expert seen a report or written document?

(2) Has expert been provided with plaintiff's photograph of accident site?

(a) What association?

(b) How long?

(c) Expert's opinion of the plaintiff's expert

c) Does witness agree with conclusions and opinions of plaintiff's expert?

(1) Measurements

(2) Testing

(3) Factual foundation

(4) Interpretation of field data

(5) Interpretation of codes or ordinances

(6) Other

4. What documents were reviewed prior to field examination by witness?

5. What did witness do in regard to this case between time of retention and field examination of accident site?

6. Has witness reached any opinions and conclusions in this case?

a) List each opinion

b) Was opinion or conclusion reached before or after inspection of accident site?

c) Please tell us each and every reason, fact or other information that supports each opinion.

d) How do you prove your opinions.

e) Have your opinions changed at all during your review of this case.

f) What assumptions have you made and why?

g) Assume your opinions are incorrect or invalid, what steps would you go through to analyze and asses the opinion to find your error.

h) What further work do you intend to do and why?

i) What further work have you been asked to do in this case and why?

j) Have you made any credibility judgments as part of your analysis in this case and why?

k) Are any of your opinions subject to any scientific principles? If so, what principles? How calculated? Variables? Replication? Testing? Rate of Error? Maintenance of Standards?

l) Have you told us the extent of your knowledge, skill, education

and experience that you believe qualifies you testify to your opinions in this case.

B. Examination of accident site

1. Time and location of inspection

a) Specific feature examined

b) Date and time of inspection

c) Participants present at inspection

(1) Conversations between witness and other parties

Note: Defense experts are nearly always accompanied to the accident site by an agent of the defendant, frequently a party to the action. Conversations between the expert and the defendant may have supplied some foundational facts for the opinion (i.e., the condition of the floor was the same as on the day of the accident). It is not uncommon for the defendant to make a statement regarding prior accidents or conditions.

(a) Specific statements made by each

(b) Notations made by witness regarding each conversation

(2) In forming an opinion, did witness rely on statement made by any party at inspection?

(a) Describe statement

(b) By whom?

2. Describe tests or measurements made at accident site

a) Photographs and documents

(1) Identify each photograph taken by witness

(a) Compare with any photographs supplied by defendant to witness

(b) Compare with any other photographs supplied to witness

(2) Identify each drawing or sketch made

(3) Identify each data sheet made by witness

(4) Identify each sheet of field notes or comments

(a) Measurement of coefficient of friction

(b) Other measurements

(5) Describe method of measurement

(6) Reason for using this method

(7) Does witness feel this a valid method?

(a) Reasons

(b) What authority?

(8) Any written directions available describing method?

(a) Who published method?

(b) Is method recognized by other safety professionals?

(9) Explain each entry on data sheets
- (a) Purpose of entry
- (b) Numerical value
- (c) Dimensions (inches, feet, pounds, etc.)
- (d) Is each test represented by a single entry?
- (e) Is the recorded data an average of readings?

(10) Describe any formulas used and explain how calculations were performed

(11) Explain results of coefficient of friction tests
- (a) Conditions existing at time of accident repeated?
  - i) Dry
  - ii) Wet
  - iii) Debris
  - iv) Other
- (b) Tests to plaintiff's shoes or exemplar
  - i) Standard leather
  - ii) Rubber
  - iii) other shoe materials

(12) Describe opinion regarding slipperiness of floor
- (a) Basis of opinion
- (b) Is opinion the same under all test conditions?
  - i) How different?

(13) Under what conditions does floor present a hazard to pedestrian?

VI. Opinions Regarding Negligence

A. Duty to inspect

1. Was area reasonably inspected and maintained by defendant?
   - a) Basis of opinion
     - (1) Maintenance policy
     - (2) Inspection policy
     - (3) Condition of walkway
     - (4) Outside factors
     - (5) Other
2. For premises of this type and under conditions existing at time of accident, what is proper or recommended inspection policy?
   - a) Basis for opinion
   - b) What documentation?
3. "Would you agree that if a condition may present a hazard to the pedestrian, and the condition could be corrected using reasonable and available means, as a reasonable safety practice it should be corrected?"

B. Specific qualifications

1. What specific education and experience qualifies expert to render opinion in this case?
2. Restate each opinion, and for each determine the following:
    a) Qualifications for opinion
    b) Foundational facts on which it is based