



Standard Guide for Composing Walkway Surface Investigation, Evaluation and Incident Report Forms for Slips, Stumbles, Trips, and Falls¹

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1. Scope

1.1 This guide provides a listing of items that may be useful in recording and evaluating the conditions of a walkway surface, including ramps and stairs, that may involve a slip, stumble, or trip that may result in a fall.

1.2 This guide provides a listing of data that may be useful in investigating, evaluating, and reporting a slip, stumble, trip, slip and fall, stumble and fall, or trip and fall incident.

1.3 Nomenclature is provided to obtain uniform language for reports.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[F1646 Terminology Relating to Safety and Traction for Footwear](#)

[F2048 Practice for Reporting Slip Resistance Test Results](#)

3. Terminology

3.1 *Definitions:*

3.1.1 The standard terms listed in Section 6 shall be used.

3.1.2 The standard terms listed in Terminology [F1646](#) shall be used when there is no term(s) provided in this guide.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

4. Significance and Use

4.1 This guide provides recommendations for recording walkway surface investigation, evaluation, and incident report data pertaining to slips, trips, stumbles, and falls. It is intended to aid individuals or entities in the development of their own special reporting system. It is recognized that a user may use this guide in its entirety or may extract only those segments providing the level of information recommended. Depending on the intended use, a report form may be designed to be used alone or as a supplement to or incorporated within another report form. This guide is not a final report form. It lists items that may be considered for inclusion into a questionnaire, document, or report.

4.2 Potential users include persons interested in the prevention and investigation of slip, trip, stumble, and fall phenomena, such as insurance company loss control specialists, industrial and commercial safety professionals, plant and facilities management personnel, forensic engineers, and research personnel concerned with factor correlation, statistics acquisition, loss control, and cost control.

4.3 This guide provides uniform language appropriate for creating a form for manually recording information regarding pedestrian walkway evaluations and slip, trip, and fall incidents.

4.4 *Recommendations for Reporting*—Information specific to site location and case identification is given in [6.2](#); information specific to walkway evaluation is given in [6.3](#); information specific to slip, trip, and fall incidents is given in [6.4](#).

5. Procedure

5.1 *Preparing Report Form(s)*—Consider the recommendations in [6.1 – 6.3](#) when preparing a walkway surface evaluation report. Use the recommendations in Section 6 when preparing slip and fall, stumble and fall, and trip and fall incident reports and reports of near falls.

6. Report

6.1 *Form of Report*—The report may be in narrative or coded format. The form may be hard copy or electronic media, or the original data may be hard copy and then converted to electronic or computerized format. The form of the report will be left up to the user.

6.1.1 A form may be composed with a simply stated question on the form. Possible responses may be listed adjacent to the question, in a supplement, in instructions that the entity issues regarding the form, or on the reverse side of the form. See **X1.3** for a sample walkway evaluation report form and **X1.4** for a sample incident report form.

6.1.2 Photos and diagrams may be useful to illustrate and explain the information collected.

6.2 Case Identity:

6.2.1 *Date and Time of Report*—Enter date as mm/dd/yy, where mm indicates the month, 01 through 12; dd indicates the day of the month, 01 through 31; and yy indicates the last two digits of the year. Record the time that the evaluation is being made using a 24-h system in the form “hh/mm,” where hh represents the hour of day and mm represents the minutes. Examples are 0908 is 8 min after 9 a.m., and 2108 is 8 min after 9 p.m.

6.2.2 *Report Type*—Walkway evaluation only or walkway evaluation and incident report. An incident report may also include a walkway evaluation.

6.2.3 *Owner Location*—Report the company name, mailing address, city, state, mail zip code, country, telephone number, and fax machine number.

6.2.3.1 *Contact Person at Owner Location*—Record the last name, first name, and middle initial; and telephone number, including area code; telephone extension; email address; and fax machine number.

6.2.4 *Site Location*—Record the site name, physical address, city, state, zip code, country and specific location of the walkway being evaluated.

6.2.4.1 *Interior or Outdoors*—Record as interior or outdoors.

6.2.4.2 *Contact Person at Site Location*—Record the last name, first name, and middle initial; telephone number, including area code; telephone extension; email address; and fax machine number.

6.2.5 *Person Preparing Report*—Record the last name, first name, and middle initial; the individual’s telephone number, telephone extension, and email address; company name; mailing address, city, state, mail zip code, and country; and company telephone number.

6.3 Walkway Evaluation:

6.3.1 *Slip Resistance Measurement*—The investigator determines which measurements are necessary and the instrument(s) used to make the measurements. The choice of whether to test a walkway surface with a standard test foot, a test foot directly related to an incident, or a test foot selected for other reasons lies with the investigator. Details of the surface test are recorded in accordance with **6.3.1.1**. The details of tests the investigator may require for a particular sole material, or a particular heel material, with a surface other than the walkway under investigation, are recorded according to **6.3.1.2**.

6.3.1.1 *Walkway Surface Slip Resistance*—Record the identity of the instrument used to measure the surface slip resistance. Test result details may include the ASTM standard for the instrument or the make and model. Record a description of the surface tested, instrument test foot material, slip resistance of the surface clean and dry, and slip resistance of surface

contaminated. Record contaminant(s). Refer to **F2048** for additional data to be recorded and a Sample Slip Resistance Test Results Report.

6.3.1.2 *Footwear Sole and Heel Slip Resistance*—Record the ASTM standard for the measuring instrument, or otherwise identify the instrument. Record the instrument test foot sole material, test surface material, contaminant(s), slip resistance of the sole material dry, and slip resistance of the sole material contaminated.

6.3.2 Walkway Structure:

6.3.2.1 *Walkway Type*—Record one of the following: curb, floor, parking lot, ramp, sidewalk, stair, street, threshold, unpaved ground, or other. Drawings/sketches may be used to aid in documentation, especially if the walkway type is complex or comprised of multiple types.

6.3.2.2 *Walkway Construction Material*—Include the area of interest as well as the immediately surrounding areas, since slips often occur at transitions from surfaces of greater to lesser slip resistance. Record one of the following standard walkway constructions: surface coatings (acrylic, urethane, or epoxy), asphalt plank flooring, asphaltic concrete paving, brick, carpet sheet, carpet tile, carpet indoor/outdoor type, non-mosaic ceramic or porcelain tile, ceramic mosaic tile, concrete, conductive elastomeric liquid flooring, conductive resilient, conductive terrazzo, cut natural stone tile, earth, elastomeric liquid flooring, epoxy marble chip, flagstone flooring, floor mat, fluid-applied resilient, foot grille, granite, granular paving, crushed stone or cinders, grass, gratings, magnesium oxychloride, marble, mastic fills, metal floor plates, pedestal flooring, plastic laminate flooring, Portland cement concrete paving, quarry tile, resilient tile flooring, resilient sheet flooring, resilient flooring static control, resinous, rugs, seamless quartz, slip-resistant finishes, slate, steel deck, stone, thin brick tile, Portland cement terrazzo, precast terrazzo, conductive terrazzo, plastic matrix terrazzo, pressed concrete unit flooring, quarry tile, synthetic grass surfacing, vinyl composition tile or vinyl flooring, wood, wood decking, wood block, wood composition, wood parquet, wood strip, or other.

6.3.2.3 *Surface Texture*—Include the area of interest as well as the immediately surrounding areas, since slips often occur at transitions from surfaces of greater to lesser slip resistance. Record whether abrasive, button, or cross-cut grooving; note the direction of grooves in relation to the travel path, texturing, or other means intended to render the surface slip resistant; describe smooth, coarse, carpet unidentified surface, carpet runner plastic, or carpet runner other than plastic; and describe carpet shag, carpet with smooth nap, or carpet with medium nap.

6.3.2.4 *Walkway Irregularities*—Note whether the walkway is stable, planar, flush, and even. Record the nature of any irregularities. Examples for carpet condition are as follows: regular, irregular carpet; and raised edge, open seam, torn, worn, and buckled. Examples for other surfaces are as follows: broken, even, rough, smooth, uneven.

6.3.2.5 *Walkway Load*—Record any known walkway load support issues based on applicable load requirements. Record in a written report comments and stipulations such as the nature of the irregularities or deviations from applicable requirements.

6.3.2.6 *Surface Changes in Elevation*—Record whether the walkway includes any changes in elevation (such as stairs, ramps, or other walkway height transitions) and whether such transitions comply with applicable standards/requirements. Record in a written report standards applying to the walkway and comments and qualifications such as the nature of the irregularities or deviations from the requirements.

6.3.2.7 *Handrails/Guardrails*—Record whether the location complies with the requirements for handrails and guardrails. Note applicable requirements such as those in the building code, those relating to the disabled, such as the Americans with Disabilities Act (ADA) and related regulations, and occupational safety and health (OSHA) regulations and standards. Describe the construction of those not in compliance, and note how they are deficient. Record whether there is information regarding if the handrail was utilized at the time of the incident. Record the source of this information.

6.3.2.8 *Intended Use*—Record whether this surface is intended for use as a pedestrian walkway. If this is a multi-use surface provide details.

6.3.2.9 *Stairs/Steps Supplemental*—If stairs or steps are involved record characteristics of step geometry including rise, run of step where incident occurred, uniformity of steps in the stairway, and slope of stairs; specific location on steps where fall occurred; record direction of travel on steps (up or down).

6.3.3 *Surface Contaminants:*

6.3.3.1 *Contaminants Present*—Record the contamination status at the time of examination: clean, cleaning solution, dirt (soil, unidentified), dust, grease, ice, liquid (other than substances in this listing), oil, overspray, particulate (paper clips, paper), refuse (food waste), snow, water, residual ice melt or friction product, or other (identify).

6.3.3.2 *Expected Contaminants*—Record the contaminants expected to be present on the walkway surface even though not present when the walkway was examined.

6.3.4 *Janitorial Practices:*

6.3.4.1 *Manufacturer's Instructions for Use*—Record whether the manufacturer's recommendations are available to the users. Record deviations from the instructions when using janitorial products at this location. Specify instances in which the manufacturer's instructions are not followed.

6.3.4.2 *Scrubbers*—Record how often squeegees on automatic scrubbers are replaced and whether automatic scrubbers are maintained if/as applicable, so they do not leave a trail of water on the floor.

6.3.4.3 *Floor Dust*—Record whether floor dust is mopped immediately after burnishing to remove particulate residue.

6.3.4.4 *Products*—Record whether the contents of all products used on or in the vicinity of the walkway are known.

6.3.4.5 *Mats*—Record whether walk-off mats are placed adjacent to outside entrances and wet carpet.

6.3.4.6 *Rugs and Mats*—Record whether rugs and mats have a slip-resistant backing that is functional, if/as applicable. Record whether the rug or mat lies flat in the area of intended use. Additionally, record whether the edges are flush and planar with the walkway surface (that is, no curling of edges). Also record the length of mat and number of mats used in the path of travel. If possible, measure the vertical change in elevation

at the mat or rug edge to the nearest $\frac{1}{32}$ in. If applicable, record whether any residual contaminant, normally denoted by footprints, exists on the walkway surface beyond the last mat or rug of an entrance. If a door swings over a mat or rug, comment if clearance maintained between door bottom and rug.

6.3.4.7 *Spray Products*—Record whether sprays used in the vicinity of the floor contain mineral oil, silicone, other lubricants, or ingredients that may contaminate a walkway surface.

6.3.4.8 *Contaminants and Refuse*—Record whether spilled contaminants and refuse are required to be cleaned up promptly. Record observed or reported failures to clean residue promptly.

6.3.4.9 *Surface Process*—Record whether sealed, polished, coated, or no surface process. Record the name by brand and manufacturer, polish, sealer, wax, ultra high-speed buffing polish, plastic type polish, or spray buff product.

6.3.4.10 *Cleaning Method*—Record the cleaning method as mopped, wet mop, dry buff, dry mop, machine washed, shampoo (carpet), spot clean, strip, dusted, or other. Describe prior cleaning methods if different from most recent cleaning methods. Describe other processes specific for wood, terrazzo, marble, concrete, metal, or other types of walkway material, if/as applicable.

6.3.4.11 *Buffing or High-Speed Burnishing Method*—Record the brand, model, and revolutions per minute of the buffing or burnishing machine(s). Record the coarseness/color and manufacturer of the buffing pad.

6.3.4.12 *Products Used on Floor*—Record the brand name, manufacturer, and other identifying product information. Note known incompatibilities between products. Such products may include stripper, sealer, polish or wax, spray buff product, general purpose cleaner, cleaner used in automatic scrubber, spot cleaning product, aerosol products such as metal cleaners used in vicinity of the floor (as on door guards), buffing burnishing machine, buffing pads, dust mop, wet mop, and other products.

6.3.4.13 *Compliance with Standards*—Record which janitorial products are in compliance with the applicable slip resistance or safety standards and which are not in compliance. Record the standard(s).

6.3.5 *Maintenance Records*—Record whether there are service and maintenance records and whether the maintenance records are maintained regularly.

6.3.5.1 *Record Retention Policy*—Summarize the record retention policy. Record whether the required records are maintained in accordance with the policy.

6.3.5.2 *Janitorial Products*—Record whether a record is kept for the brand and name of each janitorial product used on the floor.

6.3.5.3 *Janitorial Procedures*—Record whether a record is kept of the date and time each maintenance procedure was performed.

6.3.5.4 *Janitorial Employee*—Record whether a record is kept of who performed each service.

6.3.5.5 *Incident Reports*—Record whether a record is kept of slip, trip, stumble, and fall incidents.

6.3.5.6 *Time of Service*—Record whether a log is kept of the time of service and the kind of service and whether the log is maintained in a timely manner.

6.3.6 *Safety Program*—Record whether there is consideration of slip and fall issues and appropriate enforcement in the safety program.

6.3.6.1 *Review*—Record whether there is a policy for the review of incident reports for trending or follow-up, or both.

6.3.6.2 *Training Program*—Record whether there is a regular training program for personnel and environmental services staff and outside service contractors regarding safety procedures and slip and fall prevention.

6.3.7 *Signs and Warnings:*

6.3.7.1 Describe whether caution and warning signs are used at the examination site and are visible from all directions of approach.

6.3.7.2 Record whether the warning signs comply with applicable standards/requirements.

6.3.7.3 Record whether the warning signs are temporary or permanent.

6.3.7.4 Describe other warning methods used and the specific conditions cautioned against.

6.3.7.5 Record the graphics, background color, lettering color, and description of the signs.

6.3.8 *Walkway Illumination*—Record the illumination level as measured by an appropriate illumination-measuring device (such as a light meter), device used, and location of illumination measurement(s) including distance above walkway surface. Record the measurements at time and illumination levels consistent with time of incident.

6.3.8.1 Record whether the illumination is in compliance with applicable standards/requirements.

6.3.8.2 Record whether the illumination causes glare on the walkway surface.

6.3.8.3 Describe if the illumination is distracting or interferes with the pedestrian’s ability to see the walkway surface.

6.3.8.4 Describe if obscuring shadows are cast by pedestrians or other objects on the walking surface, especially at changes.

6.3.8.5 Record the source and type(s) of illumination.

6.3.9 *Headroom Clearance:*

6.3.9.1 Is there minimum headroom clearance of 6 ft 8 in. (2.03 m)?

6.3.9.2 Is a low headroom clearance safely padded?

6.3.9.3 Is a low headroom clearance marked with safety contrast color coding?

6.3.10 *Horizontal Clearance/Obstructions*—Describe any permanent obstructions (for example, not debris or storage) in the walkway, such as low shelves, items hanging on the wall that protrude into walkway, or other construction that limits horizontal clearance. Measure nominal width of walkway; width of walkway at obstruction; length, width and height of obstruction; and vertical distance of obstruction from walkway surface.

6.3.11 *Visual Cues/Distractions*—Describe the appearance of incident area that may make falls less likely or more likely, such as contrasting colors or patterns at changes in elevation,

obstructions and changes in surface slip resistance; accent lighting; appearance of carpet or tile patterns; appearance of displays; etc.

6.3.12 *Changes in Conditions*—Describe any known changes in conditions or procedures, or repairs made, between time of incident and time of walkway evaluation that might affect measured slip resistance, measured illumination level, or answers to any questions above.

6.4 *Incident Report:*

6.4.1 *Case Types*—Define case types as follows: ankle roll, ankle and fall, heel slip, heel slip and fall, toe slip, toe slip and fall, stumble, stumble and fall, trip, and trip and fall.

6.4.2 *Incident Date*—Record the numerical designation of mm/dd/yy, where mm indicates the month; dd indicates the day of the month, 01 through 31; and yy indicates the last two digits of the year.

6.4.3 *Incident Time*—Record the time that the incident occurred using a 24-h system in the form “hh/mm,” where hh represents the hour of day and mm represents the minutes. Examples are 0908 is 8 min after 9 a.m., and 2108 is 8 min after 9 p.m. When the incident occurred during employment, additionally record the hour of the shift or after the beginning of the workday or the time when required by the individual company policy, using a field length and private alphanumeric designation, as desired.

6.4.3.1 *Date/Time Incident Reported*—If incident was not reported immediately by the person involved, note date and time reported, and reason for delay.

6.4.4 *Weather Conditions*—Record whether rain, snow, sleet, dry, or not applicable (indoors).

6.4.4.1 Record as reported for the time of the incident.

6.4.4.2 Record the weather conditions during the period immediately previous to the incident.

6.4.4.3 Record the weather conditions during the 24 h prior to the incident.

6.4.5 *Lighting Conditions:*

6.4.5.1 *Natural Outdoor Light*—Record whether sunny, overcast, twilight, night dark, night moonlit, or other at the time of the incident, and describe.

6.4.5.2 *Supplemental Light*—Describe what lighting fixtures were illuminated at the time of the incident.

6.4.6 *Number of People Involved*—Prepare a separate report using the data listed in 6.4 for each person. A copy of the information included in 6.2 and 6.3 may be attached to each report.

6.4.7 *Incident Category*—Record whether personal injury, property damage, personal injury and property damage, or no personal injury and no property damage.

6.4.7.1 *Height*—Record as a fall on the same level or a fall from elevation. If a fall from elevation, record the measurement of fall height.

6.4.7.2 *Personal Injury Severity*—Record incident severity whether a fatality, lost time, or no lost time, or other applicable measure of incident severity.

6.4.7.3 *Lost Work Time*—Record the days lost or hours lost, if/as applicable. Record as work days lost for full days lost and work hours lost for partial days lost.

6.4.7.4 *Property Damage Severity*—Describe the damage, and estimate the cost of repair or replacement, or both.

6.4.8 *Individual Involved in Incident*—Record the name: last, first, and middle initial; and record the employer and home physical mailing addresses, telephone numbers, and email addresses as applicable.

6.4.8.1 *Personnel or Visitor Category*—Record whether an employee, volunteer, invited visitor, contractor/vendor, customer, inpatient, outpatient, client, trespasser, other (describe), or unknown.

6.4.8.2 *Gender*—Record as male or female.

6.4.8.3 *Date of Birth*—Enter a numerical designation of mm/dd/yy, where mm indicates the month; dd indicates the day of the month, 01 through 31; and yy indicates the last two digits of the year. When the date is not available, leave blank.

6.4.8.4 *Age*—When the date of birth is not available, record as child, teen, adult, aged. If a child, indicate whether they were under the supervision of a responsible adult.

6.4.8.5 *Employer*—If individual involved in incident is not an employee, record the employer name, mailing address, telephone number and fax machine number; and physical address, telephone number, and fax machine number.

6.4.8.6 *Result*—Record whether recovered or fell.

6.4.8.7 *Part of Body Affected*—Use standard nomenclature designated by the entity for whom the report is written.

6.4.8.8 *Nature of Injury*—Use standard nomenclature designated by the entity for whom the report is written. Examples might include fracture, contusion, concussion, cut, scrape, none, etc.

6.4.8.9 *Eyesight Devices*—Note whether the person was wearing eyesight devices, such as corrective eyeglasses, contact lenses, sunglasses, or protective glasses. Note the condition of the various appliances, including eye protection. Note whether glasses/contacts are bifocals, for distance or reading, prescription or over-the-counter.

6.4.8.10 *Ambulatory Assistive Devices*—Note whether the person was using any ambulatory assistive devices at the time of the incident, such as crutches, cane, walker, wheelchair, mobility scooter, etc. Describe the device and any deficiencies.

6.4.8.11 *Medication/Substances*—Note whether the person was using any medications or other substances at the time of incident and describe them, including name of medication/substance, prescription or non-prescription, whether complying with instructions, and suspected impairment by the medication or recreational drug/alcohol use.

6.4.8.12 *Physical/Behavioral Challenges*—Note whether person had any physical and/or behavioral challenges at the time of the incident and describe them.

6.4.8.13 *Medical Treatment/Transportation Provided*—Note any medical treatment provided on site, any transportation provided to medical facilities, and names/badge numbers and affiliations of individuals involved.

6.4.9 *Type of Locomotion and Activity Performed at Time of Incident:*

6.4.9.1 *Gait*—Record whether a run, stand, walk, normal, abnormal (describe), or other (describe).

6.4.9.2 *Activity at Time of Incident*—Record whether carrying, lifting, lowering, pulling, pushing, standing, or dis-

tracted (talking to a companion, using a mobile communication device, or not looking at the tread surface while moving).

6.4.10 *Footwear*—Record the brand name, style, and model designation. Describe the footwear materials that contact the walkway surface, as described in the following sections.

6.4.10.1 *Type of Footwear*—Record whether athletic, barefoot, protective toe, work >6-in. (152-mm) height, work <6-in. (152-mm) height, men's dress laced, men's dress slip-on, women's dress laced, women's dress pump, sling back, mule, heel height, overshoes, rubber boots, slippers, sandals, or other.

6.4.10.2 *Fit of Footwear*—Record whether good, poor (describe), or loose.

6.4.10.3 *Footwear Condition (Appearance)*—Record whether new, moderate wear (includes upper surface scuffing), heavy wear, and describe closure method. Describe if closure method is improperly secured (such as lace(s) not tied).

6.4.10.4 *Heel Material*—When the heel contains a lift, record both the heel material and the lift material. Include a sketch showing the location of the lift on the heel. Typical heel materials may be barefoot, crepe, elastomer, leather, Neolite®,³ plasticized poly(vinyl chloride) (PVC), rubber, TPU (thermoplastic polyurethane), EVA (ethylene vinyl acetate), or other (describe). The heel may need to be sent to a firm qualified to test and evaluate its contents.

6.4.10.5 *Heel Condition*—Record whether new, worn rear edge, or worn contacting surface (general wear).

6.4.10.6 *Heel Wearing Surface Texture*—Record whether smooth, ribbed, pattern, or other (describe).

6.4.10.7 *Heel Hardness*—Record whether Shore A or D and the value.

6.4.10.8 *Sole Material*—Record whether barefoot, elastomer (unidentified), ethylene vinyl acetate (EVA), leather, Neolite®,³ other (describe), polyurethane, PVC, rubber, natural rubber, nitrile butadiene rubber (NBR), styrene butadiene rubber (SBR), thermoplastic rubber (TPR), crepe, or vulcanized rubber.

6.4.10.9 *Sole Tread*—Record whether ribbed, pattern, or smooth.

6.4.10.10 *Sole Hardness*—Record whether Shore A or D and the value.

6.4.10.11 *Defects*—Record whether loose sole, missing heel, missing heel lift, strap broken, and other defects.

6.4.10.12 *Other Shoe Inserts or Modifications*—Describe and note condition, such as cushions, heel wedges, arch supports, etc. Note whether over-the-counter or professionally fitted.

6.4.11 *Contaminants at Time of Incident and Last Surface Process:*

6.4.11.1 *Shoe Surface Contaminants*—Record whether the shoe(s) are contaminated by dust, grease, oil, water, particulate, soil, or other shoe contaminants. Include contaminants tracked in from another location(s) and that are not necessarily the contaminants that may be present on the walkway surface.

6.4.11.2 *Walkway Surface Contaminants*—List the contaminants present at the time of the incident, whether clean,

³ Neolite® is a registered trademark of the Goodyear Tire and Rubber Co., Shoe Product Division, 24 Hampshire Dr., Hudson, NH 03051.

cleaning solution, dirt (soil, unidentified), dust, grease, ice, liquid (other than substances in this listing), oil, overspray, particulate (paper clips, paper, or food waste), refuse, snow, water, or other (identify).

6.4.11.3 *Type of Last Surface Process Before Incident*—Describe the last surface process on the walkway as polished, spray buffed, dry mopped, wet mopped, machine scrubbed, buffed, high-speed burnished, dust mopped, spot cleaned, or other surface process.

6.4.11.4 *Date and Time of Last Surface Process*—Record the date and time of the last surface process before the incident.

6.4.12 *Summary of Causes of Incident:*

6.4.12.1 *Summary of Contributing Factors*—Summarize significant items from 6.3 and 6.4.

6.4.12.2 *Cause*—State an opinion as to the primary and secondary causes of the incident.

6.4.13 *Witness Information*—Record the name(s) of any witness(es) to the incident, relationship to the individual involved in the incident (none, friend, relative, etc.), witness' employer name, address, telephone number and fax machine number.

6.4.14 *Individual Preparing Report*—Record the name: last, first, and middle initial; and record the employer name, address, telephone number and fax machine number.

6.4.15 *Report Preparation Date*—Record the numerical designation of mm/dd/yy, where mm indicates the month, 01 through 12; dd indicates the day of the month, 01 through 31; and yy indicates the last two digits of the year.

6.4.16 *Report Preparation Time*—Record the time that the incident occurred using a 24-h system in the form “hh/mm,” where hh represents the hour of day and mm represents the minutes. Examples are 0908 is 8 min after 9 a.m., and 2108 is 8 min after 9 p.m.

7. Keywords

7.1 accident; computer; evaluation; examination; fall; floor; footwear; incident; investigation; ramp; report; report form; slip; stair; stumble; trip; walkway

APPENDIXES

(Nonmandatory Information)

X1. RELATED ASTM STANDARDS

X1.1 ASTM Standards:²

X1.1 D2047 Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine

D2240 Test Method for Rubber Property—Durometer Hardness

E620 Practice for Reporting Opinions of Technical Experts

E678 Practice for Evaluation of Technical Data

E860 Practice for Examining and Testing Items that Are or May Become Involved in Products Liability Litigation

E1020 Practice for Reporting Incidents

E1188 Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator

E1542 Terminology Relating to Occupational Health and Safety

F462 Consumer Safety Specification for Slip-Resistant Bathing Facilities

F609 Test Method for Using a Horizontal Pull Slipmeter (HPS)

F695 Practice for Ranking of Test Data Obtained for Measurement of Slip Resistance of Footwear Sole, Heel, and Related Materials

F1240 Guide for Ranking Footwear Bottom Materials on Contaminated Walkway Surfaces According to Slip Resistance Test Results

F1637 Practice for Safe Walking Surfaces

F1646 Terminology Relating to Safety and Traction for Footwear

F2048 Practice for Reporting Slip Resistance Test Results

F2508 Practice for Validation, Calibration, and Certification of Walkway Tribometers Using Reference Surfaces

F2913 Test Method for Measuring the Coefficient of Friction for Evaluation of Slip Performance of Footwear and Test Surfaces/Flooring Using a Whole Shoe Tester

X1.2 Field Investigation Guide: Slips, Stumbles, Trips and Fall Incidents

NOTE 1—This Field Investigation Guide (FIG) is intended to serve as a field reference for slips, stumbles, trips, and fall incident investigation. The FIG can be used by the investigator as a reference tool in planning and conducting field investigations of such incidents. The FIG is neither intended as an all-inclusive reference nor as a replacement for any other applicable/relevant standards.

I. Case Identity/Incident Description

- Date/Time
- Location
- Person(s) Involved - Identity
- Incident Type (Slip, Stumble, Trip, Fall)
- Witness Information
- Evidence Available
- Applicable Codes & Standards

VII. Illumination

- Type (Natural/Supplemental)
- Level/Intensity
- Glare
- Shadows

II. Person Involved – Details

- Demographic Information
- Activity at time of Incident
- Supervision of minors
- Gait Dynamics
- Ambulatory Assistive Devices Used
- Visual Acuity/Aids
- Medication/Substances Used
- Physical/Behavioral Challenges
- Extent/nature of injuries/damages
- Medical treatment/transportation provided

VIII. Footwear

- Type/Description
- Fit/Condition/Appearance
 - Heel material/wear/inserts
 - Sole material/wear/inserts
- Heel/Sole Tread/Pattern
- Defects/contamination

III. Walkway Structure

- Walkway Type
- Intended use
- Surface Texture
- Immediately surrounding areas with transitions from greater to lesser slip resistance

IX. Weather/Environmental Conditions

- Conditions at Time of Incident
- Conditions Prior to Incident

- Structural Condition/Irregularities/Load Support Issues
- Surface Displacement/Shifting
- Elevation Changes
- Handrails/Guardrails
 - Placement/Dimensions
- Surface Contamination
- Visual cues/distractions

IV. Walkway Maintenance Practices

- Maintenance Program Records
- Staff/Contractor Training
- Products Used
- Method of Application
- Floor Coverings
- Spray Processes
- Contaminants & Refuse
- Spill Control/Cleanup
- Surface Processes
- Cleaning Methods
- Buffing/Burnishing
- Date & Time of Last Surface Process

X. Headroom/Obstructions

- Clearances
- Dimensions

V. Organizational Safety Practices

- Incident Reporting Process
- Periodic Review/Analysis
- Prevention & Control Training

XI. Slip Resistance Testing

- Test Protocol
- Test Locations
- Test Results

VI. Signs, Notices & Warnings

- Applicability
- Availability
- Location/Placement
- Contrast/Conspicuity
- Legibility

XII. Other

- Changes in conditions or procedures, or repairs made, between time of incident and time of walkway evaluation that might affect any answers
- Photos and/or diagrams
- Comments

X1.3 Sample Walkway Evaluation Form

X1.3.1 Instructions—Refer to 6.2 and 6.3. Select appropriate response and provide additional details in “Comments” section with recommendations at the end. The primary intent of this form is to provide an example to assist in improving a slip

and fall prevention program. However, this material is not all-inclusive and may not address special safety issues unique to selected industries. Feel free to modify or delete items to fit individual needs. Photos and diagrams may be useful to illustrate and explain the information collected.

Date of Report: _____ (mm/dd/yy)
 Time of Day Report Completed: _____ hh/mm using 24 hour clock
 Walkway Evaluation Only Walkway Evaluation and Incident Report

Owner Location:
 Company Name: _____
 Address: _____
 City _____ State _____ Zip Code _____ Country _____
 Telephone No. _____ Fax No. _____
 Contact Person:
 Last Name _____ First Name _____ Middle Initial _____ Telephone No. _____ Extension: _____ Fax No. _____

Site Location:

Site Name: _____
 Address: _____
 City _____ State _____ Zip Code _____ Country _____
 Telephone No. _____ Fax No. _____
 Specific Location on the Property: _____
 Were Slip Resistance Measurements Taken? (see 6.3.1)
 Yes (attach results report) No
 Comments _____

Interior _____ Outdoors _____

Contact Person (see 6.2.3.1):
 Last Name _____ First Name _____ Middle Initial _____ Telephone: _____ Extension: _____ Email address _____ Fax
 No. _____

Person Preparing Report:

Last Name _____ First Name _____ Middle Initial _____
 Telephone: _____ Extension: _____ Email address: _____ Fax No. _____
 Company Name _____
 Address: _____
 City _____ State _____ Zip Code _____ Country _____
 Telephone No. _____ Fax No. _____
 Were Slip Resistance Measurements Taken? (see 6.3.1)
 Yes (attach results report) No
 Comments _____

Walkway Type (see 6.3.2.1)

Curb Floor Parking Lot Ramp Sidewalk Stair Street
 Threshold Unpaved Ground Other
 Comments _____

Walkway Construction Material (see 6.3.2.2)

Concrete Clay Terrazzo Natural Stone Asphalt
 Epoxy/Urethane/Acrylic Coating Metal Vinyl/Laminate/Resilient
 Carpet Other (explain in comments)
 Comments _____

Walkway Surface Texture (see 6.3.2.3)

Smooth Coarse texture Carpet
 Comments _____

Walkway Irregularities (see 6.3.2.4)

Yes No
 Comments _____

Walkway Loading - Meets Requirements? (See 6.3.2.5)

Yes No
 Comments _____

Surface Changes in Elevation – Stairs, Ramps, Other Height Transitions Meet Requirements? (See 6.3.2.6)

Yes No
 Comments _____

Were Stairs/Steps involved in incident?

Yes No

If Yes, Handrails/Guardrails - Meet Requirements? (see 6.3.2.7)

Yes No

Was handrail utilized at time of incident?

Yes No Unknown

Comments _____

Is Surface Intended for Use as a Pedestrian Walkway?

Yes No (see 6.3.2.8)

Comments

Stairs/Steps Supplemental (see 6.3.2.9)

Record characteristics of step geometry including rise, run of step, uniformity of steps in the stairway, and slope of stairs; Specific location on steps where fall occurred; record direction of travel on steps (up or down)

Contaminates Present? – Check All That Apply (see 6.3.3.1 and 6.3.3.2)

Water Ice Grease Particulate soil Dust Other

Are these contaminants expected?

Comments

Janitorial product and equipment records and manufacturers' instructions on file and being followed? (see 6.3.4.1 – 6.3.4.4)

Yes No

Comments

Mats Installed Properly and Maintained? (see 6.3.4.5 and 6.3.4.6)

Yes No

Comments

Effective Spill Control/Cleanup Program in Place? (see 6.3.4.7 and 6.3.4.8)

Yes No

Comments including manufacturer and name of products used

Floors Sealed, Polished, Waxed? (see 6.3.4.9)

Yes No

Comments

Cleaning Method Adequate? (see 6.3.4.10)

Yes No

Describe cleaning methods, products and tools; compliance with applicable standards

Are Service, Maintenance, and Incident Records Maintained? (see 6.3.5.1 – 6.3.5.6)

Yes No

Comments

Does the Safety Program Address Slips and Falls? (see 6.3.6.1 and 6.3.6.2)

Yes No

Comments

Signs and Warnings – Used and Meet Requirements? (see 6.3.7.1 – 6.3.7.4)

Yes No

Comments

Walkway Illumination - Is Lighting Adequate? (see 6.3.8.1 – 6.3.8.5)

Yes No

Comments

Is Adequate Headroom Clearance Provided? (see 6.3.9.1 – 6.3.9.3)

Yes No

Comments

Is Adequate Horizontal Clearance Provided? (see 6.3.10)

Yes No

Measurements of clearance and obstructions including vertical distance of obstructions from walkway

Comments

Visual Cues/Distractions making falls less likely or more likely? (see 6.3.11)

Contrasting colors/patterns at changes in elevation/obstructions/surface materials Accent lighting Disorienting carpet or tile patterns

Distracting displays Other

(Describe)

Describe any known changes in conditions or procedures, or repairs made, between time of incident and time of walkway evaluation that might affect measured slip resistance, measured illumination level, or answers to any questions above.

Overall Comments and Recommendations

X1.4 Sample Incident Report Form

X1.4.1 *Instructions*—Refer to 6.4. A Walkway Surface Evaluation Report should be completed in conjunction with this report. On the following items complete each item by

filling in required information or circle and describe. Photos and diagrams may be useful to illustrate and explain the information collected.

Individual Involved in Incident (see 6.4.8):

Last Name _____ First Name _____ Middle Initial _____

Employer Name _____

Mailing Address of Company _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Physical Mailing Address of Company _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Home Mailing Address _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Home Physical Address _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Personnel or Visitor Category: Circle One: Employee Volunteer Customer Visitor Inpatient Outpatient Unknown Other (describe):

Gender: circle one: Male Female

Date of Birth: _____ mm/dd/yy

Age: _____

If child, appropriately supervised by parent or guardian? Yes No

Describe:

Witness(es):

Last Name _____ First Name _____ Middle Initial _____

Home Physical Address _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Case Type (see 6.4.1). Circle one:

Ankle Roll Ankle Roll and Fall Heel Slip Heel Slip and Fall Toe Slip Toe Slip and Fall Stumble Stumble and Fall Trip Trip and Fall

Date of incident: _____ mm/dd/yy

Time of Day of Incident (see 6.4.3). _____ hh/mm

Was Incident Reported Immediately by Person Involved (see 6.4.3.1)? Yes No

If no, note date and time reported, and reason for delay:

Weather Conditions at Time of Incident. Circle one:

Rain Snow Sleet Dry Not Applicable (indoors) or Describe:

Weather Conditions Immediately Previous to the Incident. Circle one:

Rain Snow Sleet Dry Not Applicable (indoors) or Describe: _____

Weather conditions during the 12-24 hours previous to the incident. Circle one:

Rain Snow Sleet Dry Not Applicable (indoors) or Describe: _____

Lighting Conditions at Time of Incident (see 6.4.5). Circle one:

Sunny Overcast Twilight Night Dark Night Moonlit Other _____

Supplemental Light at time of Incident (describe lighting fixtures that were illuminated): _____

Number of People Involved ____ (prepare a separate incident report for each person. Attach a copy of the Walkway Evaluation Report to each report)

Incident Category (see 6.4.7) (circle one):

Personal Injury Only Property Damage Only Personal Injury & Property Damage None (describe): _____

Height: (see 6.4.7.1). Fall on Same Level ____ Fall from Elevation (record fall height and unit of measurement) _____

Personal Injury Severity (circle one): Fatality Lost Time (record days/hours lost): ____ No Lost Time Other _____

Property Damage Severity: Estimated cost of repair/replacement _____ Describe damage _____

Result (see 6.4.8.6) (circle one): Recovered Fell

Part of Body Affected (see 6.4.8.7): _____

Nature of Injury (see 6.4.8.8): _____

Was Person Wearing Eyesight Devices When Incident Occurred (see 6.4.8.9)? Yes ____ No ____

If YES circle device and describe: corrective eye glasses (distance) reading glasses bifocals Sunglasses contact lenses protective glasses

What Was the Condition of the Various Appliances, Including Eye Protection?

Ambulatory Assistive Devices Used at Time of Incident? Yes ____ No ____ Describe _____

Any deficiencies with device? Yes ____ No ____ Describe _____

Medication/Substances Used at Time of Incident? Yes ____ No ____ Describe _____

Suspected impairment at time of incident? Yes ____ No ____ Describe _____

Physical/Behavioral Challenges at Time of Incident? Yes ____ No ____ Describe _____

Medical Treatment Provided On-site? ____ Yes ____ No Describe _____

Name and employer of individuals providing on-site medical treatment _____

Transportation provided to medical facilities? ____ Yes ____ No Describe _____

Names/badge numbers and employer of individuals providing transportation _____

Type of Locomotion and Activity Performed at Time of Incident (see 6.4.9). Circle Items and Describe:

Gait: Run Stand Walk Normal Abnormal (describe) Other (describe)

Activity at time of incident. Circle items: Carrying Lifting Lowering Pushing Pulling Standing Distracted Other (describe)

Footwear Brand Name, Style and Model: _____

Type of Footwear (see 6.4.10). Circle One and/or Describe:

Barefoot Athletic Protective Toe Work >6" Height Work ≤6" Height Men's Dress Laced Men's Dress Slip-On Women's Dress Laced Pump Sling Back Mule (backless shoe) Overshoes Rubber Boots Slippers Sandals Others (describe)

Heel Height and Unit of Measurement: ____ Fit of Footwear: Good ____ Poor ____ Loose ____ (Describe) _____

Footwear Condition (appearance): Circle one: New Moderate Wear Heavy Wear Lace(s)/Closure Not Tied/Secured

Closure Method (circle one): Laces Buckles Velcro® Other (describe) _____

Heel Material: Barefoot ____ Crepe ____ Elastomer ____ Leather ____ PVC ____ Other Rubber (describe)

Heel Lift Material (circle one): None Cork Plastic Rubber Other (describe) _____

Heel Condition: New ____ Worn Rear Edge ____ Worn Contacting Surface (general wear) ____

Heel Wearing Surface Texture: Ribbed ___ Pattern ___ Smooth ___ Other (describe)

Heel Hardness: ___ Shore A ___ Shore D Value: _____

Sole Material: Barefoot ___ Crepe ___ Elastomer ___ Leather ___ PVC ___ Other rubber (describe)

Sole Wearing Surface Texture: Ribbed ___ Pattern ___ Smooth ___ Other ___

Sole Hardness: ___ Shore A ___ Shore D Value: _____

Defects: Loose Sole ___ Missing Heel ___ Missing Heel Lift ___ Strap Broken ___ Others (describe)

Other Shoe Inserts or Modifications (circle): None Cushion(s) Heel wedge(s) Arch support(s) Other

Describe: _____

Good condition? Yes ___ No ___ Describe _____

Over-the-counter ___ Professionally fitted

Shoe Surface Contaminants (see 6.4.11.1):

Circle contaminants tracked in from another location(s) that are not necessarily the contaminants present on the walkway surface:
None Dust Grease Oil Water Particulate Soil Other (describe)

Walkway Surface Contaminants (see 6.4.11.2):

Circle contaminants present at time of incident:

None Cleaning Solution Dirt (soil unidentified) Dust Grease Ice Liquid (other than substances in this listing) Oil Overspray Particulates (paper clips, paper, food waste) Refuse Snow Water Other (describe)

Type of Last Surface Process Before Incident (circle): Polished Spray buffed Dry mopped Wet mopped Machine scrubbed Buffed High-speed burnished Dust mopped Spot cleaned Other surface process (describe) _____

Date of Last Surface Process Before Incident _____ mm/dd/yy

Time of Last Surface Process Before Incident _____ hh/mm using 24 hour clock

Summary of Contributing Factors to Incident

Opinion as to the Primary and Secondary Causes of the Incident

Witness Information (see 6.4.13) (attach additional pages as needed for additional witnesses):

___ No witnesses

Last Name _____ First Name _____ Middle Initial _____

Relationship to individual involved in incident: _____

Employer Name _____

Address _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Individual Preparing Report:

Last Name _____ First Name _____ Middle Initial _____

Employer Name _____

Address of Company _____

City _____ State _____ Zip Code _____ Country _____

Telephone No. _____ Fax No. _____

Date report prepared: _____ mm/dd/yy

Time of day report prepared: _____ hh/mm using 24 hour clock

X2. ADDITIONAL CONSIDERATIONS

X2.1 This guide pertains to obtaining and recording observations that are factual. However, the opinion of the person making a detailed record of a location can be valuable in a number of ways. These may include suggestions for correcting conditions that may contribute to slips, trips, stumbles, and falls. An organization may request, or require, that the investigator also provide a summary of possible areas for walkway

safety improvement. Review the report and record items that are significant. When the report form items are numbered, record the number assigned to each item considered of significance. When report form items are not numbered individually, record them using the description recommended in this guide for the condition(s).

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