ENVIRONMENTAL
HEALTH & SAFETY

Slip, Trip, and Fall Prevention Program

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DOCUMENT REVISION LOG

Document: Slip, Trip, and Fall Prevention Program

Rev. No.	Effective Date	Revision Description	Pages Replaced	Completed by:
1	2/24/23	Program reviewed, no changes	N/A	ZP, LB, JG
1.1	4/26/23	Program put in to the latest template for EHS, SRS changed to EHS, updated references and checked that they were still valid, removed ASTM F802-83 as it was redacted by ASTM in 2012 and is no longer used	All	VG

ACRONYMS & DEFINITIONS

EHS	Environmental Health and Safety
Slips, trips, and falls	Slips are the result of too little friction or a lack of traction between the footwear and the floor surface. A trip is the result of a foot striking or colliding with an object, which causes a loss in balance, and usually a fall.
ADA	Americans with Disabilities Act
ANSI	American National Standard Institute
ASTM	American Society for Testing and Materials
Coefficient of friction	The measure of how slippery a floor is under dry conditions. Stated formally, it is the magnitude of the horizontal force required to start an object slipping divided by the weight of the object, which is generally accepted to be greater than 0.5 for most general use floors.
FM	Facilities Management
Friction	The resistance between footwear and the walking surface.
Handrail	Horizontal, sloping, or vertical bar or rail normally grasped by hand for support.
Hazardous location	These include any opening in the walking surface, open sided floors, and any location where a predictable walking routine may be interrupted. Principal hazards include (but are not limited to) uneven walking surfaces, holes, stairways, and wet areas. This also includes level or elevation changes which are unexpected changes in the walkway or sidewalks which create hazards for walkers.
Nosing	The rounded edge of a step or molding.
Ramps	An incline no more than 30 degrees from the horizontal that may require handrails.
OSHA	Occupational Safety and Health Association
Stair design	Standardization of steps and ramps is needed to prevent accidents. Pedestrians need to have stairs and steps which are predictable in construction to avoid falling. Walkways which change in slope and have unmarked single steps should be avoided. Risers and treads should be uniform and have uniform dimensions to avoid tripping.
Trip-Fall	A loss of balance caused by (among another things) poor lighting, walking on loose surfaces, and/or uneven footing.

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1. Introduction

Nationally, slips, trips, and falls are the second leading cause of accidental death and a major cause of debilitating injuries. Falls are the primary source of injuries in food service operations, laboratory environments, and medical occupations. This program is designed to protect employees, students, and visitors from slip trip, and fall injuries.

2. Scope

This program applies to all UNM employees, contractors, vendors, and visitors. It is designed to assist recognizing and eliminating principle causes of slips, trips, and falls, including but not limited to:

1) Stepping onto slippery surfaces
2) Stepping onto material and debris
3) Elevation changes on walkways
4) Poor lighting
5) Carrying excessively large or heavy loads.

3. Roles and Responsibilities

3.1. Environmental Health and Safety

1) Implements and maintains this program
2) Makes available training for employees that work in areas where slip, trip, and fall hazards are prevalent
3) Monitors slip, trip, and-fall accident occurrences
4) Notifies Facilities Management of physical areas that need improvement or modifications
5) Performs annual building inspections
6) Informs building coordinators of inspection results

3.2. Facilities Management

1) Develops and implements procedures for custodial work that are within compliance of this program
2) Develops and implements procedures for preventative measures (i.e., salting sidewalks) that comply with this program
3) Implements and enforces this program with all personnel and vendors
4) Repairs and maintains buildings and sidewalks to prevent slip, trip, and/or fall hazards

5) Repairs any identified or known slip, trip, and fall hazards

3.3. Building Coordinators

1) Implement and enforce this program with all personnel and vendors
2) Assist in the identification and elimination of hazards found in common/shared areas.
3) Inspect their buildings and work areas for hazards. Ideally annually and prior to wet season (See Attachment A)
4) Contact Facilities Management to take corrective action
5) Request assistance from EHS with hazard identification if necessary

3.4. Employees

1) Adhere to the best practices identified within this procedure. This includes (but is not limited to) cleaning up spills immediately, picking up debris, and taking general precautions so that other persons are not injured on University property
2) Review work areas for hazards daily
3) Report potential hazards to the supervisor immediately
4) Report accidents to the supervisor immediately

4. BEST PRACTICES

4.1. Behavior

1) Avoid running or walking too quickly while indoors
2) Avoid carrying items that obstruct one's view of the walking path
3) Avoid slippery and wet surfaces. If surface cannot be avoided, take shorter steps and move slowly to keep your center of balance under the body and on the feet.
4) Be extra aware of slip hazards during inclement weather
5) Be aware of your surroundings. If you need to use your phone and/or other device(s), stop walking or biking and move out of the walkway.
6) Avoid using headphones while walking and biking, especially in high-traffic areas
7) Use handrails when walking up or down stairs

4.2. General Housekeeping

1) Close file drawers when leaving the area. Open cabinets account for many falls in the office environment.
2) Clean up spills immediately. Unexpected changes in friction coefficient are serious safety hazards.

3) Keep aisles and walkways free of clutter, trash, and any materials that could cause a loss of footing.

4.3. Slip Hazards

1) Mats should be placed at the doors during rain and inclement weather so that moisture is not spread in the hallways.
2) Mats and non-slip coatings are recommended for food service preparation areas.
3) Floors, platforms, and walkways shall be maintained in good repair, and reasonably free of oil, grease, or water
4) Slip hazards must be identified and removed promptly.
5) Barricades and warning signs shall be used when a slip hazard is present (i.e. freshly mopped floor).

NOTE: Mats shall be placed in such a way that they do not create an additional trip hazard.

4.4. Trip Hazards

1) Electrical cords should not be placed in walking areas. If necessary, purchase a rubber step-over strip to cover the cords. Cords can be temporarily secured utilizing tape or floor mats but should not be utilized as a permanent solution.
2) Aisles should be marked in warehouse and storage areas and should be maintained free and clear of material.
3) Nighttime campus lighting should be maintained to assure that all walkways are illuminated, without shadows.
4) Ramps should be constructed to have a different texture from the floors around them.
5) Ramps should not have an incline more than 30 degrees from the horizontal walking surface.
6) Holes and irregularities in walking surfaces should be repaired promptly
7) Floor coverings that have curling edges will create additional trip hazards and should be taped down and later replaced

4.5. Floor Treatments

1) Floors should be finished with non-skid waxes and finishes;
    a. ADA recommends a coefficient of friction of 0.6 for floors and 0.8 for ramps.
    b. Slip-resistant cleaners and polishes can raise the coefficient of friction to 0.8/0.5 on dry and wet floors, respectively.
2) If work processes create wet floor surfaces, items such as mats, grates, cleats, or similar methods that provide equivalent slip protection shall be implemented and placed to not create additional trip hazards.

4.6. Fall Hazards

1) Guardrails or personal fall arrest systems shall be utilized for any elevated walking/working surface where a fall of 4’ or more can occur.
    a. Note: Loading docks are excluded from this requirement provided the leading edge is clearly marked with a high contrast color and employees working in the area are trained to recognize the hazard
2) For construction related activities, guardrails or personal fall arrest systems shall be utilized for any elevated walking/working surface where a fall of 6’ or more can occur. Ladders are excluded from this requirement.

4.7. Low Slopped Roofs

1) When work is performed less than 6 feet from the roof edge, a guardrail system, safety net system, travel restraint system, or personal fall arrest system shall be utilized.
2) When work is performed at least 6 feet but less than 15 feet from the roof edge, and the work is both infrequent and temporary, trained employees may establish and utilize a designated area.
3) When work is performed 15 feet or more from the roof edge, and the work is both infrequent and temporary, employees may work without fall protection provided they will not be closer than 15 feet of the leading edge at any time during their work.

4.8. Stairways

1) Every set of steps having three treads and four or more risers shall be equipped with stair railing.
2) Fixed stairs and steps shall be installed at angles to the horizontal of 30 to 50 degrees, with the preferred slope being 30 to 35 degrees. Heavier use areas should have lower slopes to reduce the chance for stumbling.
3) Stairways which are less than 44 inches wide shall have at least one handrail, preferably on the right-side descending.
4) Stairways in excess of 88 inches wide shall have one handrail on each side, and an intermediate stair rail midway in the width of the stairway.
5) Handrails should extend at least 12 inches onto the landing area so that persons do not misstep when they exit the stairway.
6) See University of New Mexico Building Design Standards for additional stairway requirements.

4.9. Ladder Use

See UNM *Ladder Safety Program* for ladder requirements.

5. Proper Footwear

With Best Practices (outlined earlier in this section) implemented first, proper footwear can decrease the likelihood of a slip, trip, or fall. When deciding on appropriate footwear, keep the following in mind:

1) Task appropriateness
2) Level of slip resistance
3) Type of tread
4) Style of shoe (i.e. oxford, loafer, sneaker, boot)
5) Level of comfort and support

NOTE: High-heeled shoes, flip-flops, and leather soled shoes do not offer slip protection and may even increase the chances of a fall. UNM recommends avoiding these shoe styles.

See UNM's *Personal Protective Equipment (PPE) Program* and the *FM Procedure and Guideline 6010: Issuance of Personal Protective Equipment* for more information.

6. References

1) American National Standard Institute (ANSI)
    a. ANSI A1261.1-1995 Safety Requirements For Workplace Floor And Wall Openings, Stairs And Railing Systems
    b. ANSI A1264-2-2012 Provision Of Slip Resistance On Walking/Working Surfaces
2) American Society for Testing and Materials (ASTM)
    a. ASTM D2047-17 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
3) American with Disabilities Act (ADA)
    a. ADA Standards Chapter 3: Building Blocks
4) OSHA
    a. 29 CFR 1910.21 Subpart D—Walking-Working Surfaces
    b. 29 CFR 1910.22 General Requirements
    c. 29 CFR 1910.23 Ladders

ATTACHMENT A: SLIP, TRIP, AND FALL HAZARD ANALYSIS

Slip, Trip, & Fall Hazard Analysis				
Building Name:	**Building #**			**Inspected By:**
Date:				
	ACCEPTABLE			**DESCRIBE HAZARD NOTED**
	Yes	No	N/A	
Building Exterior				
Assembly rooms and classrooms				
Condition of steps				
Condition of carpet				
Surface defects in floor				
Special areas				
Pools				
Rules posted and enforced				
Surface maintained				
Gymnasiums				
Use of correct wax				
Spills cleaned promptly				
Plumbing leaks				
Restrooms				
Water accumulation				
Plumbing leaks				
Food service operation				
Correct shoes worn				
Grease accumulation on floors				
Water paddling				
Prompt clean-up				
Pulled up carpet				
Floor surface defects, broken tile				
Building perimeter				
Defects or breaks in sidewalk				
Sidewalk surface defects				
Elevators				
Smooth ride				
Levels with floor				
Housekeeping				
Uniform size and shape				
Handrails present and secure				
Nosing in acceptable condition				
Floors				
Slick places				
Water accumulation				
Adequate trashcans				
Lighting				
Burned out or inoperative lights				
Night light inspection or inoperative lights				

Slip Trip Fall Program R1.1

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