

EVALUATING SLIP, TRIP AND FALL HAZARDS

Purpose

This module introduces participants to the evaluation of slip, trip and fall hazards. They will learn about the three types of evaluation. They will learn how to evaluate the slipperiness of floors and the level of light in their organizations. Finally, they will review the critical inventory method for evaluating hazards, and you will lead a discussion of how severity, exposure and probability factor into slips, trips and falls.

Objectives

After completing this module, participants will be able to:

- Identify the three types of evaluation they can perform in their organizations.
- Identify the factors that influence the slipperiness of floors.
- Identify the different floor types and their level of slip resistance.
- Understand how coefficient of friction can be used to determine the slipperiness of a floor.
- Identify the lighting standards for both general and emergency illumination.
- Use the critical inventory method for evaluating slip, trip and fall hazards.

Time

85 minutes: 12:20 to 1:45 PM

Followed by a 10 minute break, 1:45 to 1:55 PM

Agenda (Instructional Strategy and Content Outline)

The following topics and activities are covered in this module. An estimate of the time needed to cover each section of the module appears in parentheses.

1. Introduction to Evaluating Slip, Trip and Fall Hazards—Presentation (5 minutes)
2. Evaluating Floors—Interactive Presentation (35 minutes)
3. Evaluating Light—Interactive Presentation (15 minutes)
4. Critical Inventory Method—Presentation and Case Study (30 minutes)

Key Terms and Concepts

- Three types of evaluation
- Evaluating floor slipperiness
- Slipmeters
- Evaluating light
- Critical inventory method

Materials and Equipment

To prepare for delivering *Module 3*, you will need the following:

- Participant Guide and Facilitator Guide
- Flipchart, markers, and tape
- Laptop computer (PC) and LCD projector with wireless remote or overhead projector
- Overhead transparencies or PowerPoint slides: 3-1 through 3-26

Suggestions for Time Management

- Start on time after the break.
- When discussing content on individual pages, don't discuss every point on the page. Instead let participants' questions and comments guide an interactive discussion of the key points on each page.
- Keep the *Introduction to Evaluating Hazards* (Pages 1-3) presentation crisp and brief.
- If you run short on time, omit the discussion of Page 9. Instead, encourage participants to read the page on their own.
- If you run short on time when you present Pages 17-23, omit the second example.

Cues**5 Minute Presentation****PPT 3-1****PPT 3-2 and PPT 3-3****PPT 3-4****PPT 3-5****PPT 3-6****PPT 3-7****Presentations and Activities****1. Introduction to Evaluating Slip, Trip and Fall Hazards—
Presentation (5 minutes)**

- Lead a 5 minute presentation in which you introduce participants to the evaluation of slip, trip and fall hazards.
- Show PPT 3-1 and refer participants to Page 1 of Module 3, *Evaluating Slip, Trip and Fall Hazards*.
- Show PPT 3-2 and PPT 3-3 to introduce the module objectives.
- Refer participants to Page 2. Show PPT 3-4 to point out that this module will cover the second step in proactive slip, trip and fall management: evaluation.
- Refer participants to Page 3. Tell participants that there are three types of evaluation they can perform.
- Show PPT 3-5 and tell participants that the first type of evaluation is to assess individual parts of the organization.
- Review the points on PPT 3-5 then say that this type of evaluation is proactive because they are actually assessing their organization to find hazards before an incident occurs.
- Ask participants to share examples of this type of evaluation that they use in their organization.
- Show PPT 3-6 and tell participants that the second type of evaluation is to assess an existing or known hazard.
- Review the points on PPT 3-6, then say that this type of evaluation is helpful when a known hazard exists and an organization is trying to figure out what to do about it.
- Ask participants to share examples of this type of evaluation that they use in their organization.
- Show PPT 3-7 and tell participants that the third type of evaluation is to assess the entire organization.

- Review the points on PPT 3-7, then say that organizations should strive to do this type of evaluation systematically.
- Ask participants to share examples of this type of evaluation that they use in their organization.
- Address any participant comments or questions.

35 Minute Interactive Presentation

2. Evaluating Floors—Interactive Presentation (35 minutes)

- Lead a 35 minute interactive presentation in which you introduce participants to the concepts involved in the evaluation of floors.
- You will be presenting while also giving participants a chance to answer questions, contribute content and complete a quick checklist.
- Following is a suggested time allocation:
 - Page 4—Causes of Slips, Trips and Falls (5 minutes)
 - Page 5—Evaluating Floors (10 minutes)
 - Pages 6-8—Floor Type, Slip Resistance, Floor Treatments and Contaminants (5 minutes)
 - Pages 9-11—Friction and Slipmeters (10 minutes)
 - Page 12—Checklist (5 minutes)
- Refer participants to Page 4. Show PPT 3-8 to introduce the pie chart showing the causes of slips, trips and falls.
- Point out that since flooring causes such a large percentage of incidents, it is important for them to know how to evaluate the safety of their floors.
- Do not cover the information at the bottom of Page 4 in class. Instead, encourage participants to review it on their own.
- Refer participants to Page 5. Show PPT 3-9 as you introduce the factors of floor slipperiness.
- As you introduce each factor, ask participants if that factor is something they can control.
- Once participants have shared their comments, add the following points if they haven't already been made.
- Floor material:

PPT 3-8

Facilitator Note

PPT 3-9

- The only time you really have control over floor material is if you have input into selecting the floor in the first place.
- If you are building a new facility or if you are replacing an existing floor, be sure to select a floor that has strong non-skid properties.

■ Floor finish:

- Generally you will not be in the position of selecting new floors and you need to live with the floors that your organization already has.
- However, you can adjust a floor’s slipperiness by changing its finish.
- Whether or not you have floors that are inherently slippery, you should consider using a treatment that adds roughness to the floor’s surface.

■ Floor texture and pattern:

- If a floor is visually confusing, it can obscure defects or changes in elevation.
- For example, a complicated tile or carpet pattern might make it difficult to see an upcoming step.

■ Floor slope:

- A change in slope creates a change in foot pressure, which might decrease the COF.
- An unusually steep floor could cause a loss of balance.

■ Floor contaminants:

- Here you have indirect control.
- Policies and procedures that outline correct methods for keeping a floor free of contaminants will only be followed to the extent that your organization’s housekeeping policy is supported and reinforced.

- Floor condition:
 - Consider replacing floors that are broken, chipped or uneven.
 - The extent of your control depends on your ability to budget for floor replacement.
- Environmental conditions:
 - It is important to be aware of floor changes during inclement weather.
 - Plan to monitor more closely when conditions create water and slush.
 - It is also important to monitor the cleanliness of your floors and to clean them regularly.
- A person's footwear:
 - Sometimes you have control here, sometimes you don't.
 - You can specify or require that employees wear a certain type of footwear when they work.
 - However, if your business is open to the public, you can't control your customers' footwear.
- A person's footstep or gait:
 - Sometimes you have control here, sometimes you don't.
 - You can have a "no running" policy.
 - However, you can't control individual walking styles or a person who is inherently clumsy.
- Refer participants to Pages 6 and 7. Discuss these pages by doing the following:

- Ask participants to share what type of flooring their organization has in its lobby.
- What do they like/dislike about that flooring?
- Ask participants to share what type of flooring their organization has in the main workshop.
- What do they like/dislike about that flooring?
- Emphasize the point on the bottom of Page 7.
- Refer participants to Page 8. Discuss this page by doing the following:
 - Point out that they may not have much control over the type of floor their organizations have.
 - However, they certainly can influence how their existing floors are treated and maintained.
 - Point out that this page gives them a number of questions they can ask regarding their organizations’ floor treatment and maintenance programs.
 - Get discussion by asking participants what types of floor treatments they use and their experience with them.
 - Ask them what types of floor contaminants concern them.
 - Close by encouraging participants to get a handle on their organizations’ floor treatment and maintenance programs.

PPT 3-10

Question

- Show PPT 3-10.
- Ask participants: What makes a floor safe?
- Get some participant responses. Congratulate the participant who says that the appropriate amount of friction makes a floor safe.

Question	<ul style="list-style-type: none">■ Ask participants: But how can you tell whether your floors have the appropriate amount of friction?■ Get some answers. Congratulate the participant who says that the floors have to be measured for slipperiness.■ Point out that the slipmeter is the instrument that is used to measure floor slipperiness.■ Refer participants to Page 9. Point out that the first slipmeter was invented by Leonardo DaVinci.■ If time permits, share the historical information on this page.■ Refer participants to Page 10. Point out that modern day slipmeters have come a long way since the DaVinci days and that there are many different types.
PPT 3-11	<ul style="list-style-type: none">■ Show PPT 3-11 as you quickly review the key points relating to the James Machine.
PPT 3-12	<ul style="list-style-type: none">■ Show PPT 3-12 as you quickly review the key points relating to the Horizontal Drag Meter.
PPT 3-13	<ul style="list-style-type: none">■ Show PPT 3-13 as you quickly review the key points relating to the BOT-3000.
PPT 3-14	<ul style="list-style-type: none">■ Show PPT 3-14 as you quickly review the key points relating to the Portable Inclinable Articulated Strut.
PPT 3-15	<ul style="list-style-type: none">■ Show PPT 3-15 as you quickly review the key points relating to the English XL.
PPT 3-16 (Video Clip)	<ul style="list-style-type: none">■ Tell participants that they will now have an opportunity to see how a slipmeter works. Show PPT 3-16, which is a short video clip that demonstrates the use of a slipmeter.■ Refer participants to Page 11. Point out that this page has additional information about slipmeters.■ Lead a brief discussion by asking participants if anyone has any knowledge of or experience with any of the slipmeters that were introduced.■ Allow as much discussion as time permits.

- Refer participants to Page 12. Allow participants time to complete this page, including time to answer the question at the bottom.
- Ask participants to share some of the actions they identified.
- Tell participants that there is a blank copy of this checklist on the *Tools and Resources* CD-ROM that came with their Participant Guides.
- Address participant questions and comments.

15 Minute Interactive Presentation

3. Evaluating Light—Interactive Presentation (15 minutes)

- Lead a 15 minute interactive presentation in which you introduce participants to the concepts involved in the evaluation of light.
- You will present and give participants a chance to answer questions, contribute content and complete a quick checklist.
- You will be using Pages 13 through 16. Allocate about 3-4 minutes per page.
- Begin the discussion by saying the following:
 - We’ve just completed a discussion of how you can evaluate the slipperiness of your floors.
 - Another factor that plays a role in causing slips, trips and falls is light.
 - Let’s now turn our attention to evaluating light.
- Refer participants to Page 13 and tell them that there are two types of poor lighting that can be hazardous.
- Show PPT 3-17 to discuss how poor general lighting can cause slips, trips and falls.
- Show PPT 3-18 to discuss how poor emergency lighting can cause slips, trips and falls.
- Point out that the standards for lighting are generally expressed in terms of foot candles.
- Remind participants that they learned what a foot candle was earlier in the day. Ask if anyone can remember the definition.
- When a participant correctly identifies a foot candle, show PPT 3-19 to reinforce the definition.
- As you discuss foot candles, encourage participants to take notes on the bottom of Page 13.

PPT 3-17

PPT 3-18

PPT 3-19

- Refer participants to Page 14. Explain that OSHA has standards for lighting.
- Review the key OSHA requirements on this page.
- Point out that section 1910 of OSHA has no standard for lighting, so these standards are from 1926.56(a) and they provide some guidelines for participants.
- Refer participants to Page 15. Explain that another organization, the National Fire Protection Association, publishes the Life Safety Code, which, among other things, specifies lighting requirements for emergencies.
- Allow participants time to read Page 15 and to respond to whether their organization conforms to the illumination standards of the code.
- Tell participants that there is a blank copy of this checklist on the *Tools and Resources* CD-ROM that came with their Participant Guides.
- Refer participants to Page 16. Point out that if they are interested in purchasing a light meter for their organization, the information on this page can help them determine their criteria.
- Address participant questions and comments.

**30 Minute
Presentation and
Case Study****Question****PPT 3-20****4. Critical Inventory Method—Presentation and Case Study
(30 minutes)**

- Lead a 30 minute presentation and case study in which you introduce participants to the critical inventory method for evaluating hazards. Allocate the time as follows:
 - About 10 minutes to introduce the concept and to work through a class example (Pages 17-21).
 - About 20 minutes to complete and debrief the case study (Pages 22-24).

- Ask participants: Is it possible to correct *every single* hazard in your business?

- Get some responses from participants, then lead the discussion to the following conclusions:
 - It's probably not possible to correct every single hazard in a company and it would probably be too expensive.
 - Therefore, it is important to be able to look at all hazards, and then address the ones that are the most dangerous.
 - One way to do this is to have a systematic method to evaluate hazards. Let's look at one such method now.
 - It's called the critical inventory method.

- Refer participants to Page 17 and point out that the method evaluates three factors.

- Show PPT 3-20 to introduce the first factor: severity.
 - Tell participants that this measure helps determine how serious or severe the consequences would be if the hazard caused an incident.
 - Get participant examples of both a severe and a non-severe consequence.

PPT 3-21

- ◆ For example, a severe consequence might be a serious head injury.
- ◆ A non-severe consequence might be a stubbed toe.

- Show PPT 3-21 to introduce the second factor: exposure.
 - This measure helps evaluate the number of employees who are exposed to the hazard.
 - It also helps evaluate the number of times they are exposed.

PPT 3-22

- Show PPT 3-22 to introduce the final factor: probability.
- Tell participants that this measure assesses how likely it is that the hazard will result in an incident.

Question

- Ask participants: Are you ready to try an example?

PPT 3-23

- Use PPT 3-23 as you work through Pages 18-21 with participants.
- Using the top of Page 18, quickly review the severity rating scale by saying the following:
 - You can rate severity on a four-point scale.
 - The lowest rating is the least severe and the highest rating is the most catastrophic.

Facilitator Note

- Do not spend time going over each rating and its description.

PPT 3-23

- Show PPT 3-23 and ask participants to recall this scenario from Module 2.

Question

- Ask participants: Does anyone remember what the hazards were in this picture?
- Get their ideas. Some might include the following:
 - Someone could bump into the picnic table.
 - Someone could fall from the ledge.

Write Rating on Flipchart

- A woman could get her heel caught in the grate.
- Pick one hazard and ask participants to rate its severity.
- Get participant ideas, then quickly select the rating that most participants agree on. Write that rating on a flipchart and encourage participants to write it at the bottom of Page 18.
- Refer participants to the top of Page 19, and quickly review the exposure rating scale by saying the following:
 - You can rate exposure on a three-point scale.
 - The lowest rating is minimal exposure and the highest rating is high exposure.

Facilitator Note**PPT 3-23**

- Do not spend time going over each rating and its description.
- Call participants' attention to PPT 3-23. Tell them that they will now rate the level of exposure in this scenario.

Question

- Ask participants: To rate the exposure in this slide, what additional information do you need to know?
- As participants state what they need to know, provide additional information.
- Following is some additional information you can provide:
 - This company has about 150 employees.
 - Most employees enjoy eating their lunches on the picnic tables provided by the company.
 - Employees frequently get their exercise by running on the walkway, which extends into a biking/jogging path.
 - The company has a casual dress code and a standard for safe shoes.

Question

- Ask participants: Given this information, how would you rate the level of exposure for the hazard we have identified?

Write Rating on Flipchart

- Get participant ideas, then select the rating that most participants agree on, and write it on the flipchart page underneath the first rating.
- Encourage participants to write the rating in the space provided on Page 19.
- Refer participants to the top of Page 20, and quickly review the probability rating scale by saying the following.
 - Probability is also rated on a three-point scale.
 - The lowest rating means there is minimal chance of an incident occurring and the highest rating means there is a high probability.

Facilitator Note

- Do not spend time going over each rating and its description.

PPT 3-23

- Once again, direct participants’ attention to PPT 3-23. Tell them that they are now going to rate the probability that this hazard will become an incident.

Question

- Ask participants: What is the probability that the hazard we’ve identified could create an incident?

Write Rating on Flipchart

- Get participant ideas, then select the rating that most participants agree on, and write it on the flipchart page underneath the previous ratings.
- Encourage participants to take notes on Page 20.
- Refer participants to Page 21. Quickly review the rating scale on this page.

Add the Ratings on the Flipchart

- Add the three sets of numbers from the flipchart page, and encourage participants to write results of the ratings in the space at the bottom of Page 21.

PPT 3-23

- Redirect participants’ attention to PPT 3-23.

Question

- Ask participants: If this were the outdoor area in your organization, how seriously would you take the hazard that we’ve just evaluated?

PPT 3-24

- Get some ideas, then close the discussion by reminding participants that this assessment is not an official OSHA or NIOSH formula. It is intended as a guide to help them set priorities for hazards.
- The important thing is that this instrument helps them approach hazards consistently and systematically.
- Refer participants to Pages 22-23. Tell participants that they are now going to practice on their own.
- Divide the large group into smaller groups of 4-5 people.
- Show PPT 3-24 and ask participants to recall what some of the hazards were in this picture. The following are some of the hazards they might remember:
 - Someone might trip on the hose.
 - Someone might slip on the wet stairs.
- Tell the groups to identify one hazard, then evaluate it using the critical incident method.
- Provide the following additional information:
 - This is a high traffic area.
 - The stairs are used numerous times every day by 20 stock clerks who work on an inventory platform.
 - The hose is used to clean grease from a leaking forklift.
 - When the forklift is not being used, it is parked at the end of the aisle that the hose leads into.
- Allow the groups 10 minutes to analyze the picture and rate their chosen hazard using the critical inventory method.
- While participants are working, walk around the room to get a sense of what they are saying and to answer their questions.
- Announce to participants when they have 2 minutes left so they can pace themselves.

PPT 3-25

- When time is up, bring the large group back together and discuss their conclusions.
 - Learn which hazard each group evaluated and how they rated it.
 - Ask participants what corrective actions they might take.
 - Get as many responses as time permits.
- Tell participants that there is a blank copy of this risk assessment on the *Tools and Resources* CD-ROM that came with their Participant Guides.
- Refer participants to Page 24. Show PPT 3-25 and explain:
 - There is a tendency for slips and trips to be frequent, but not severe.
 - On the other hand, the tendency of falls is to be infrequent and severe.
- Ask the question at the bottom of the page and get some responses.
- Close the discussion by reminding participants that even though slips and trips are not severe, they can cost plenty because they occur so frequently. While falls are not as common, they are devastating when they occur.
- The answer to the question is that all organizations should strive to eliminate slips, trips, **and** falls.

PPT 3-26

- Refer participants to Page 25. Use PPT 3-26 to remind participants that this page gives them the opportunity to identify actions they will take when they return to their jobs.
- As time permits, allow participants to identify some actions.

Transition

- Tell participants that, after break, they will learn how to control the slips, trips and falls at their worksites.

10 Minute Lunch

Take a 10 minute break.