HOME OF THE Hard Hat SAFETY PROVISIONS INC. TRAINING SERIES

# WELCOME!

Welcome to the Hard Hat Training Series by Safety Provisions! Today you will learn about safe rigging and hoisting principles.

# What is Rigging?

Rigging on a worksite refers to two things. First, rigging is the act of preparing a load to be lifted and moved, generally by a crane. Second, rigging is used to describe any gear that is used for lifting. While rigging gear may evolve over time, the principles of rigging largely remain the same.

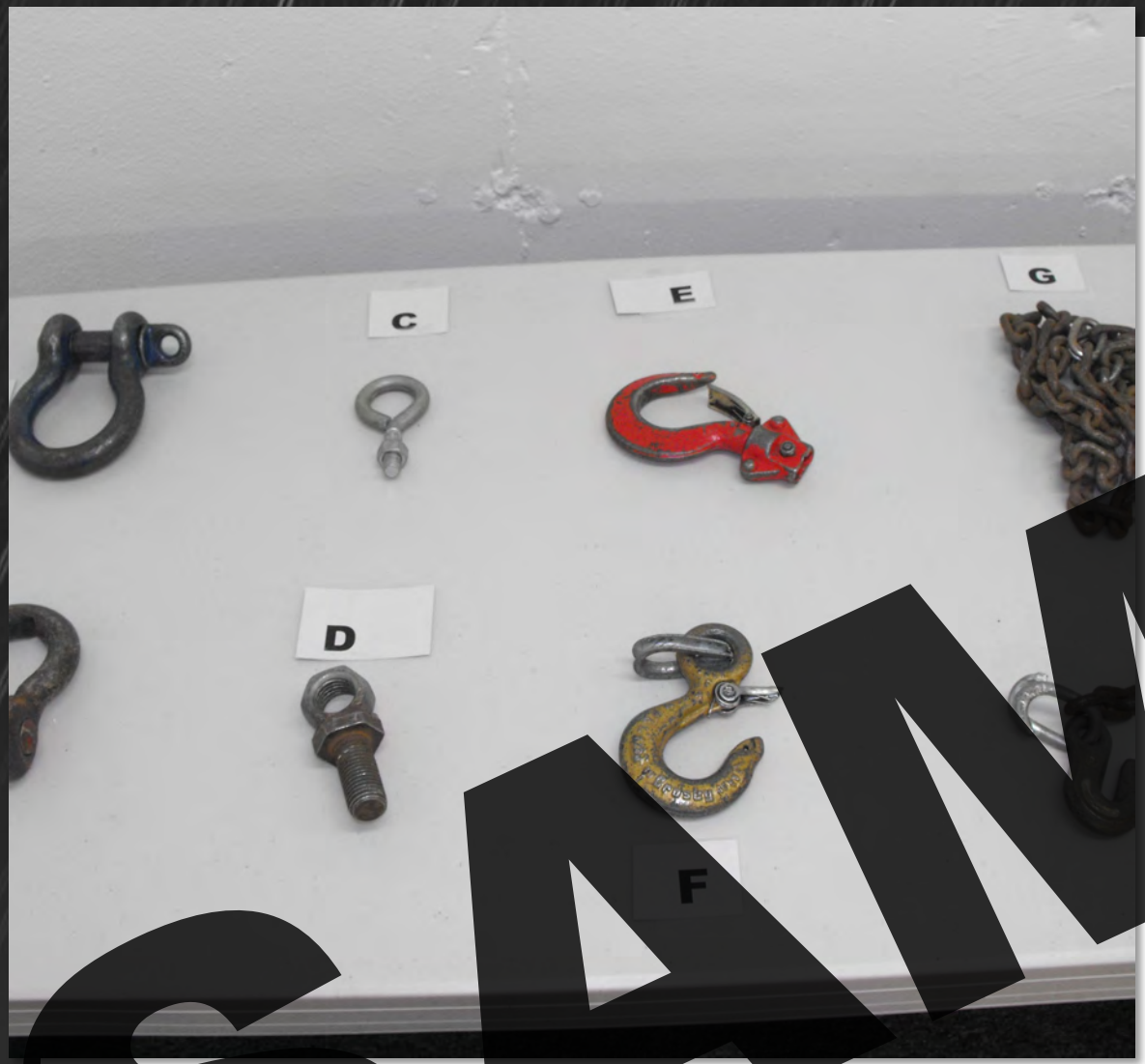
Improper rigging practices lead to injuries and deaths every year. Some common causes of rigging accidents include improper load securement, exceeding the capacity of the rigging components, and striking or crushing employees who are working too close. Consider these causes in the following accident.

For Gary, the day started just like any other. He arrived at the construction site early that morning and immediately got to work on the foundation of the building.

Meanwhile, Fred was helping with rigging and signaling for a crane that was lifting steel pipe from one side of the site to the other.

Later that day, a large steel pipe came loose from the rigging and struck Gary on the head, killing him instantly. Further investigation revealed that Fred had not rigged the load using the right hitch. The steel pipes were not bound together securely, which allowed one to slip free and kill Gary.

Had Fred been properly trained on sling types and hitches, he would have known how to gather the load of pipes securely. This training will teach you how to prevent similar accidents on your worksite.




In this course, we will cover the equipment used in rigging including slings, shackles, eye bolts, hooks, and commonly used lifting devices. We will show you the strengths and weaknesses of this equipment, as well as how to use it safely.

After we teach you about rigging equipment, you will learn how to calculate the weight of a load, how to rig the load based on its center of gravity, and how to calculate the angles and stresses of a pick.

After learning about these calculations, we will teach you about the different ways to secure a load with sling hitches. Finally, you will learn how to use voice and hand signals to communicate with the crane operator when moving a load.

Throughout this training, we will look at real, investigated accident profiles. In some cases, two or three similar accidents have been combined for the purpose of illustrating key safety principles. They will show just how quickly things can go wrong when safety procedures are ignored, resulting in injuries or fatalities.

# STANDARDS

These are some of the main standards concerning rigging and signaling. Many states or provinces have additional standards, as do some industries. We have provided these as a guide, but it's your responsibility to know all federal, local, and company rules that apply to your job site.

**29 CFR 1926.180** – Crawler, locomotive and truck cranes

**29 CFR 1926.1400** – Cranes and derricks

**ASME B30.5** – Mobile and locomotive cranes

**ASME B30.22** – Articulating boom cranes

**29 CFR 1910.179** – Overhead cranes and gantries

**29 CFR 1926.554** – Overhead hoists

**ASME 30.2, 11, 16, 17** – Overhead and gantry cranes

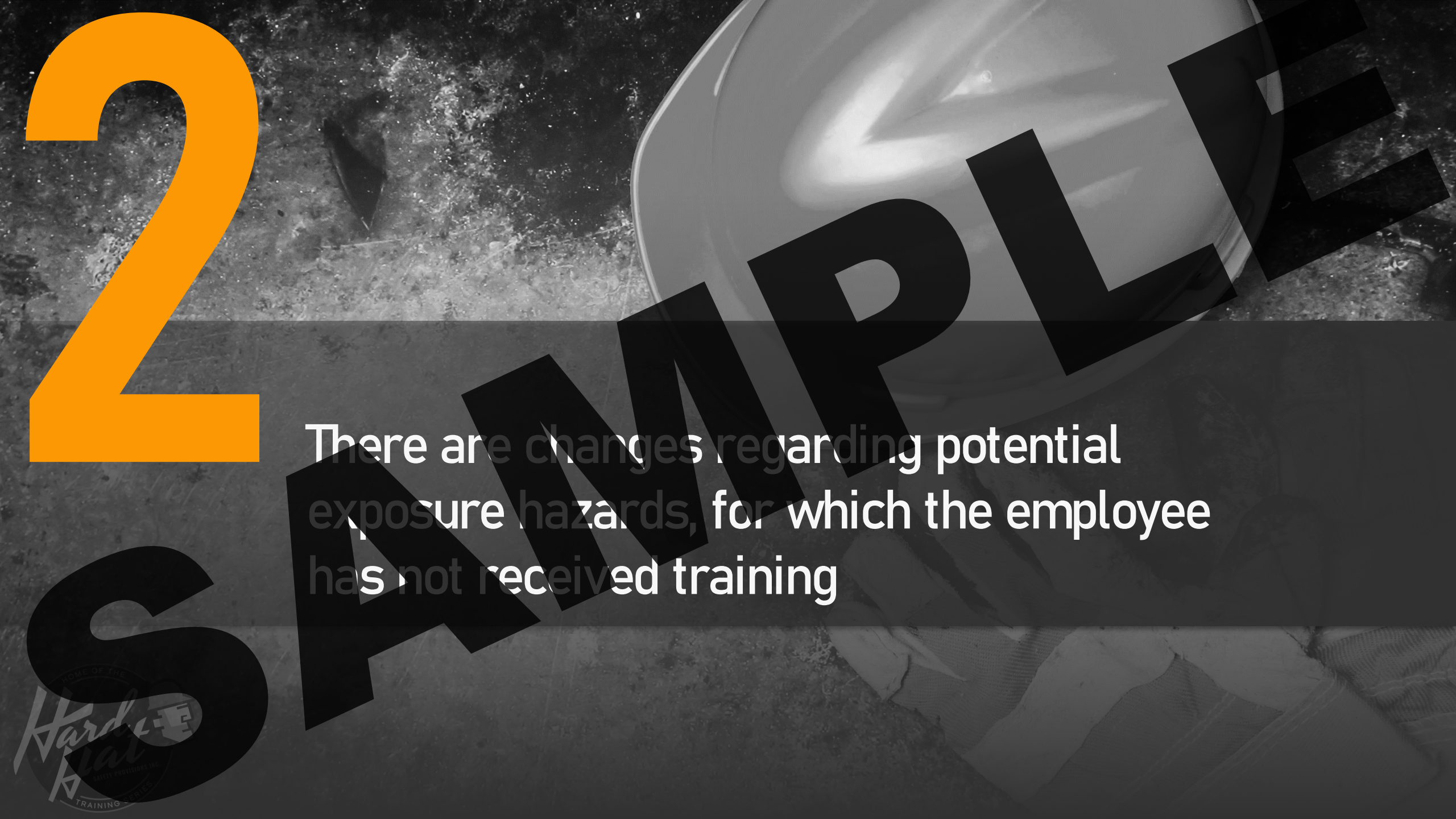
# WHY TRAINING?

No matter th[illegible] ask, "Where [illegible] deemed "qualified [illegible] helps, yes, but regulations are very clear that employees must be trained (no matter how long they've been on the job) and that it is the employer who is responsible for overseeing that safety training, ensuring employees have the understanding, knowledge, and skills needed to operate safely.

INITIAL TRAINING and REFRESHER TRAINING, as well as any WRITTEN AND PRACTICAL EVALUATIONS, must be documented and filed. At the very least, employers need to show proof of PROPER AND CONSISTENT TRAINING (in the way of TRAINING OUTLINES, CLASS LISTS, TRAINING GOALS, TESTS, CERTIFICATES, and SO ON.) These documents should include the name of the person who taught the class or conducted the evaluation.

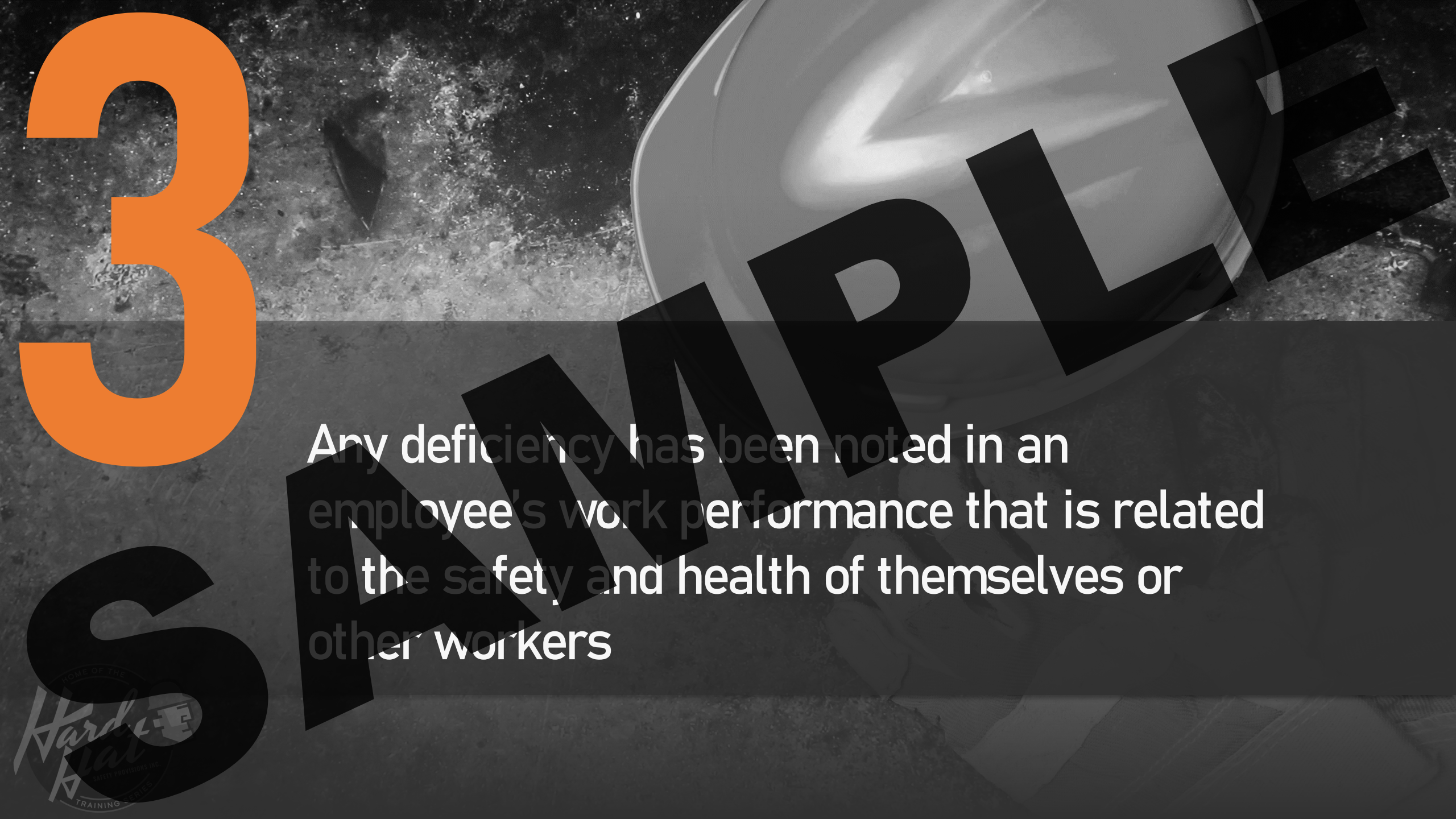
However, training is NOT just a one-and-done occurrence; it is ON-GOING. In fact, training should take place whenever there is a demonstrated need for it. Employees MUST receive REFRESHER TRAINING in the following instances…


1
There are changes in their assigned duties
SAMPLE



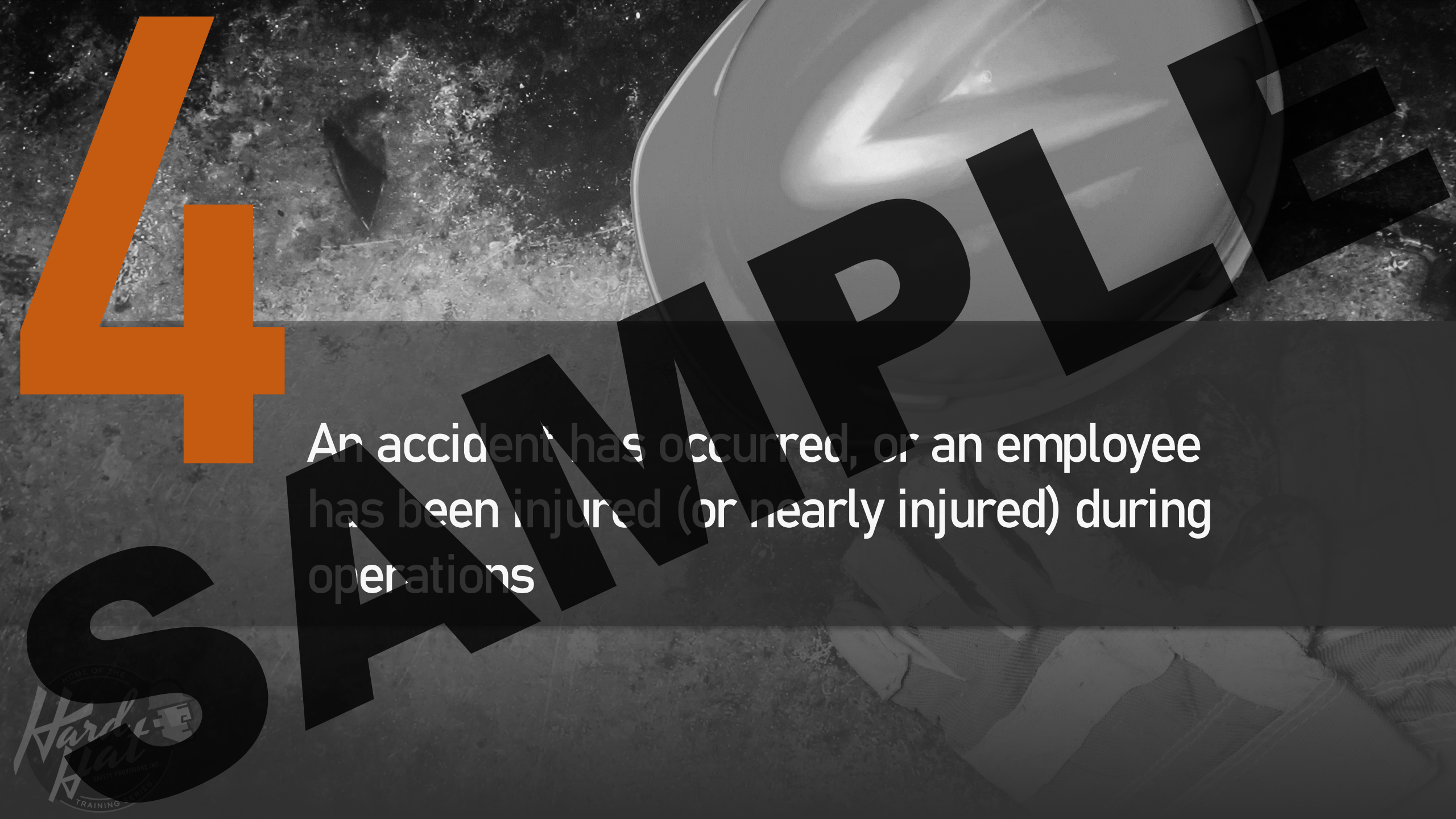
2

There are changes regarding potential exposure hazards, for which the employee has not received training



3

Any deficiency has been noted in an employee's work performance that is related to the safety and health of themselves or other workers



4

An accident has occurred, or an employee has been injured (or nearly injured) during operations

The extent of training will be determined by the employer, but at the very least it should include CLASSROOM INSTRUCTION followed by a WRITTEN AND PRACTICAL EXAMINATION that prove continued competency.

# Definitions