

CHAPTER-TWO

THEORIES AND CLASSIFICATION OF ACCIDENTS

Classification of accidents

Construction workers have a highly dangerous job.

There are no hard and fast rules that tells when most injuries will occur on a particular project. However, some generalizations about the industry can be made.

The most common construction site accidents include:

1) Falls

- ❖ It is the most common source of fatalities/sufferers dead/ victims
 - ❖ The most common falls were as follows
 - ✓ Off roof
 - ✓ In scaffolding collapse
 - ✓ Off scaffolding
 - ✓ In structure collapse
 - ✓ Through floor opening
- 45%
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- ✓ Off ladder
- ✓ Off structure
- ✓ Through roof opening
- ✓ Off edge of open floor
- ✓ Off beam support



2) Struck-by Incidents



The specific circumstances of the struck-by incidents can be ranked as follows:

- ❖ Worker struck by falling object
- ❖ Worker run over by heavy equipment
- ❖ Worker struck by crane, boom or load
- ❖ Worker run over by private vehicle
- ❖ Worker struck in trench cave-in

3) Caught-in/between incidents

The specific circumstances of incidents where workers were caught in or between objects, are ranked as follows:

- Trench cave-in } 32%
- Worker caught between pieces of heavy equipment
- Overturning of heavy equipment
- Worker caught in moving part of heavy equipment



4) Electrical Shock

The most prevalent causes of construction worker electrocution are

- ❖ Direct contact with live wire } 20%.
- ❖ Contact of crane boom with
Power line } 14%
- ❖ Contact of materials with power line } 45%
- ❖ Contact of ladder with power line }

5) Fires and explosions

Fires and explosions are one of fatal accidents that occurs at constructions site and other work places. These might commonly occurred because of:-

- unfinished piping
- leaking gases
- incomplete electrical systems
- others.



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e.g. A laborer was laying pipe in a trench when he was struck by an overhead energized line when the elbow of back hoe made contact and caused the line to fall.

The energized line struck the employee diagonally across the chest and hip. The employee then fell across the line in the trench causing the electrocution. [*Accident Code: struck-by incident*]

6) Overexertion

Overexertion in the workplace causes injuries when a person works beyond his/her physical capacity and tolerances of his/her body's soft tissues.

Factors related to overexertion are:-

- ✓ Age
- ✓ Physical condition
- ✓ Body flexibility
- ✓ Obesity
- ✓ Strength and tolerance

7) Trench collapse

Trenches are often a necessity on construction sites. If a trench collapses while a worker is inside, it could cause them to be hit with tools, machinery, or materials or bury them in the surrounding dirt.

8) Machinery accidents

Construction workers use a lot of heavy machinery in their work. From cranes and bulldozers to jackhammers and nail guns, an error or accident with these tools can be very dangerous that may occur at construction site.

9) Falling debris, materials or objects

On projects with multiple levels, it is common for falling tools, building materials, or beams to strike workers below.

10) Slips

Slips are the result of too little friction or 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.

From stray tools and materials to uneven ground or holes, there are many hazards on a construction site that could lead to a dangerous slip, trip, or fall.

Generally the main causes for accidents occur at construction sites are

- Personal factors
- Environmental factors
- Mechanical factors

SITE TIDINESS

Most responsible person for the site tidiness/ neatness/ narrowness is a construction workers himself

Accidents due untidy site are slipping or falling over materials, stepping on nails projecting from timber etc

Steps for site tidiness

- ❖ Clean up as you go
 - ❖ platform, stairways, gangway free from materials not in immediate use.
 - ❖ Clean up spill oil & grease
 - ❖ Materials dumping at a recognized disposal point.
 - ❖ Removal of any projected nail

ANY UNTIDY SITE IS DANGEROUS

Safety in Excavation

Most of the construction processes involve some forms of excavation, foundation sewer & underground services

Most dangerous activity due to unexpected & sudden fall of the unsupported sides of the trench or excavation

It involves in quick removal of excavated soil or mixture of soil & rock.

- ✓ Unexpected collapse
- ✓ Possibility of flood /submerge and others are some of accidents that happen when excavating a trench.

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- Workers rapt or buried in excavation due to side collapse
- Workers injured by materials falling into the excavation
 - Workers falling into the excavation
 - Unsafe means of access and escape
 - Vehicle driven into the excavation while reversing
 - Poisoning caused due to toxic gases & fumes entering the excavation

BASIC SAFETY PHILOSOPHY FOR SUCCESS

A NEW SAFETY CULTURE

- ❖ All accidents are preventable.
- ❖ No job is worth getting hurt for.
- ❖ Every job will be done safely.
- ❖ Incidents can be managed.
- ❖ Safety is everyone's responsibility.
- ❖ Continuous improvement.
- ❖ Safety as a "way of life" for 24 hours/day
- ❖ All individuals have the responsibility and accountability to identify eliminate or manage risks associated with their workplace
- ❖ Legal obligations will be the minimum requirements for our health & safety standards
- ❖ Individual will be trained and equipped to have the skills and facilities to ensure an accident free workplace.

