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Line of Fire

Dropped Objects

Sequence work to prevent working above/below/next to others.

Use controls such as tool tethering, debris netting, barricades and cocoon systems to prevent dropped object hazards.

Ensure materials are properly stacked and stored to prevent displacement and dropped objects.

Inspect and verify load stability during loading and before releasing delivery straps.

Care for Life 5

Human-Machine Interface (HMI)
Energized Systems • Line of Fire
Falls • Lifting Operations

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How heavy is deadly?

An object may not be heavy but if it falls, it could be deadly.
The greater the drop height, the greater the landing force.

	1 pound	2 pounds	5 pounds	10+ pounds
300 feet	Serious to severe	Severe	Deadly	Deadly
200 feet	Serious to severe	Severe	Severe to deadly	Deadly
150 feet	Serious	Severe	Severe to deadly	Deadly
100 feet	Serious	Severe	Severe	Deadly
50 feet	Serious	Serious to severe	Severe	Severe to deadly
20 feet	Serious	Serious	Severe	Severe to deadly
10 feet	Serious	Serious	Serious to severe	Severe
6 feet	Serious	Serious	Serious	Severe

Falling objects can cause:

- Minor injuries like bruises and cuts and more serious injuries like broken bones
- Severe injuries like paralysis
- Death, in extreme (or some) cases

What can you do?

- Tether your tools and equipment
- Keep your work area clear of materials, debris, and loose tools and equipment

Note: DROPS Calculator and other similar tools are only guides—they are not an accurate prediction. Even a small object falling from height can be lethal. The wearing of standard PPE, e.g. hard hat, safety boots and eye protection, is assumed in the calculator. The calculator plots the mass of a dropped object against the distance it falls to determine its possible consequences.

Sources: DROPS [2021]. DROPS calculator EXCEL version. Loirston, Aberdeen: Dropped Objects Prevention Scheme Global Resource Centre, *https://www.dropso line.org/resources-andguidance/ drops-calculator/*. Solheid J [2020]. Prevent dropped objects with the three ts. Professional Safety 65(3):63, *https://www.proquest.com/scholarly-journals/prevent-dropped-objects-with-three-ts/ docview/2371591423/se-2?accountid=26724*.

Original poster created by: CDC: Centers for Disease Control and Prevention, NIOSH: National Institute for Occupational Safety and Health, NORA: National Occupational Research Agenda and CRWR: The Center for Construction, Research and Training.

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What happens when they drop?

1 pound	2 pounds	4.5 pounds	10 pounds
When dropped 50 feet	When dropped 100 feet	When dropped 115 feet	When dropped 115 feet
Impact force 165 pounds	Impact force 650 pounds	Impact force 1,590 pounds	Impact force 3,400 pounds

Falling objects can cause:

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Original poster created by: Gripps: Conquer Gravity

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