Stop the Drop

AGC of Colorado “Stop the Drop” task force

An Alliance between the Denver and Englewood OSHA offices and “Stop the Drop” task force

Stop the Drop Task Force

STOP the DROP Task Force

Matt Ogle - JE Dunn Construction

Josh Bobb - Weifield Group Contracting, Inc

Shawn Burke - CFC Construction Inc.

Keshawn Carrington - Hyder Construction

Steve Cox - PCL Construction Services, Inc.

Carlos Domingez - The Beck Group

Kathy Freeman - Mortenson

Brad Gassman - AGC of Colorado

Jeremy Hakes - Adolfson Peterson Construction

Tyler O'Donnell - Mortenson

Matt Paull - GH Phipps Construction Companies

Chris Saiz - PCL Construction Services, Inc.

Chad Vivian - OSHA

Travis Weber - Haselden Construction, LLC

Special Thanks

Stop the Drop Task Force

- Calvin Ludwig, 4 Blades Digital, www.4bladesdigital.com
- Adam Hardin, Ergodyne, https://www.ergodyne.com/dropped-objects/tool-lanyards
- Jackson VanWinkle, Milwaukee Tool, https://www.milwaukeetool.com/Products/Safety-Solutions/Tool-Lanyards
- Mark Malezija, OES/ Falltech, https://www.falltech.com/fall-protection-products/tool-tethering/tool-tethers/
- Matt Schmidt, Shur Sales, 3M https://www.3m.com/3M/en_US/p/c/ppe/fall-protection/tool/b/dbi-sala/i/safety/personal-safety/
- Bill Moore, Petzl, https://www.petzl.com/INT/en/Professional/Packs-and-accessories/TOOLEASH

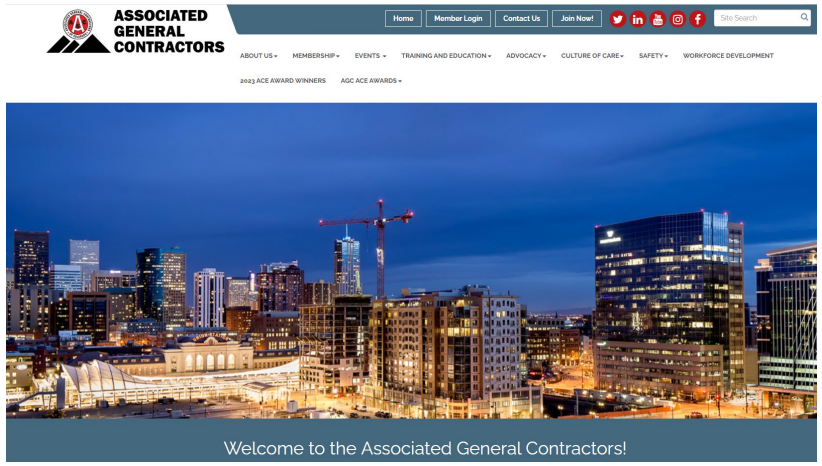
Campaign Information

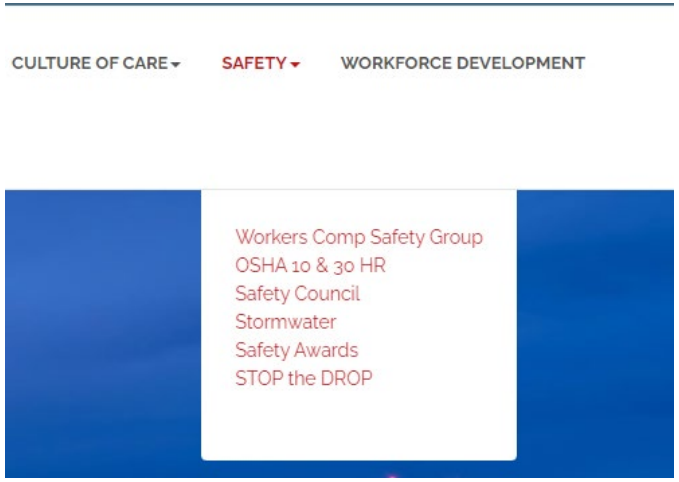
Stop the Drop

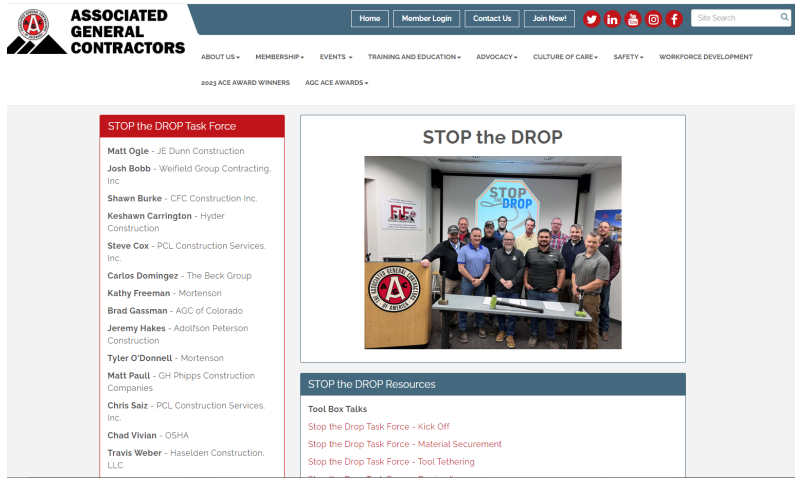
- First full week of October
- October 7-10th, 2024
- Banners
- Stickers
- Website
  - Toolbox Talks (English/ Spanish)
  - Video
  - Educational material

Website

Stop the Drop







Objective

Stop the Drop

To bring awareness of the 2nd leading cause of fatalities in construction industry (Struck By)

Inform the construction workforce that largest percentage of struck by fatalities are due to dropped objects

Provide education to ensure struck by hazards are identified and effectively controlled

The 4 Principles

Stop the Drop

- Tool Tethering
- Barricading
- Material Securement
- Safe Cargo

Impact

Stop the Drop

Struck by hazards has been one of the OSHA *Fatal Four* since 1994

52,000 “Struck-by Falling Object” OSHA recordable injuries annually. BLS, 2022

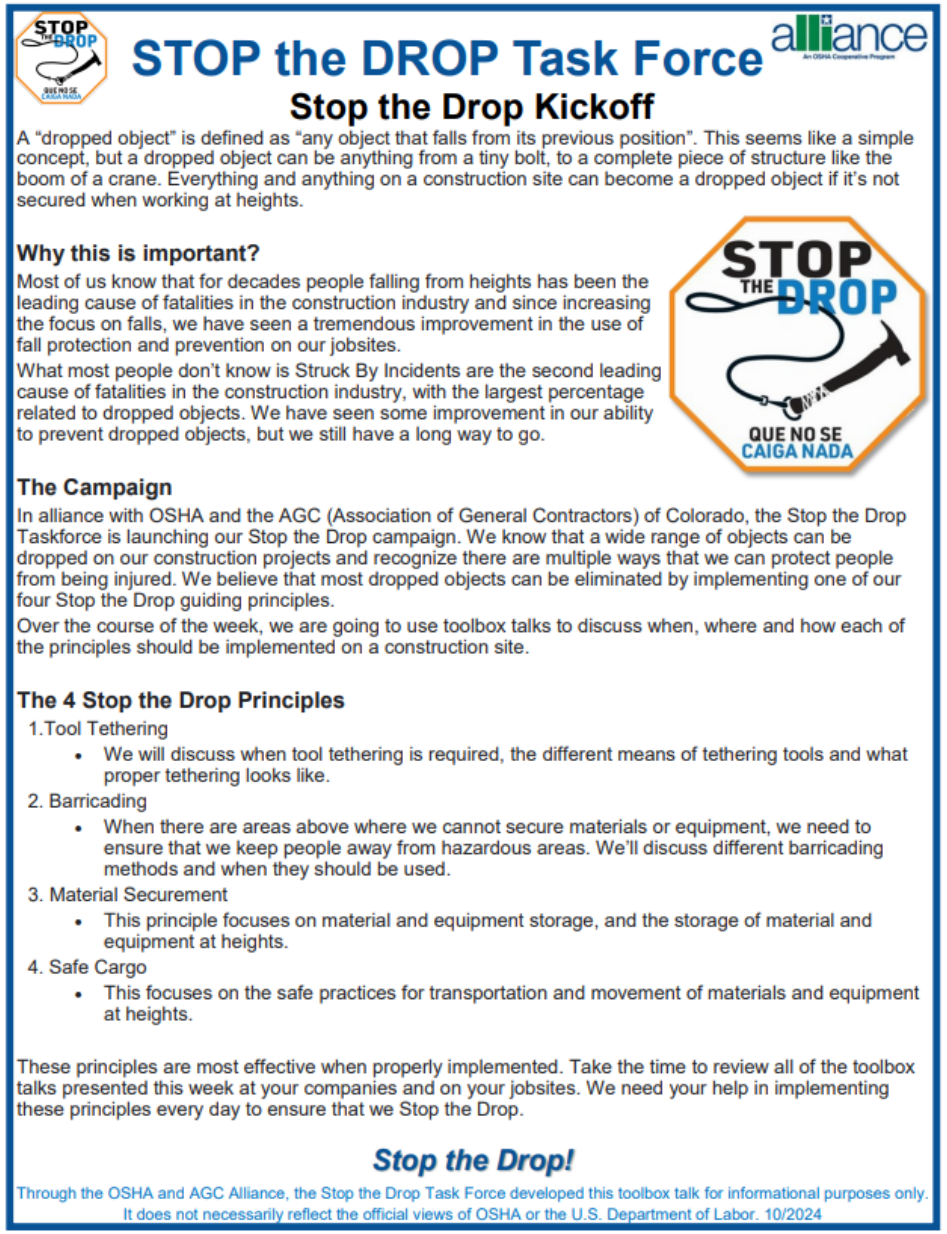
238 fatalities. BLS, 2022

7 fatalities in Colorado from 2015-present

Kick-Off

Stop the Drop

- Tool tethering
- Barricading
- Material Management
- Safe Cargo



STOP the DROP Task Force

Stop the Drop Kickoff

A "dropped object" is defined as "any object that falls from its previous position". This seems like a simple concept, but a dropped object can be anything from a tiny bolt, to a complete piece of structure like the boom of a crane. Everything and anything on a construction site can become a dropped object if it's not secured when working at heights.

Why this is important?

Most of us know that for decades people falling from heights has been the leading cause of fatalities in the construction industry and since increasing the focus on falls, we have seen a tremendous improvement in the use of fall protection and prevention on our jobsites.

What most people don't know is Struck By Incidents are the second leading cause of fatalities in the construction industry, with the largest percentage related to dropped objects. We have seen some improvement in our ability to prevent dropped objects, but we still have a long way to go.

The Campaign

In alliance with OSHA and the AGC (Association of General Contractors) of Colorado, the Stop the Drop Taskforce is launching our Stop the Drop campaign. We know that a wide range of objects can be dropped on our construction projects and recognize there are multiple ways that we can protect people from being injured. We believe that most dropped objects can be eliminated by implementing one of our four Stop the Drop guiding principles.

Over the course of the week, we are going to use toolbox talks to discuss when, where and how each of the principles should be implemented on a construction site.

The 4 Stop the Drop Principles

1. Tool Tethering
   - We will discuss when tool tethering is required, the different means of tethering tools and what proper tethering looks like.
2. Barricading
   - When there are areas above where we cannot secure materials or equipment, we need to ensure that we keep people away from hazardous areas. We'll discuss different barricading methods and when they should be used.
3. Material Securement
   - This principle focuses on material and equipment storage, and the storage of material and equipment at heights.
4. Safe Cargo
   - This focuses on the safe practices for transportation and movement of materials and equipment at heights.

These principles are most effective when properly implemented. Take the time to review all of the toolbox talks presented this week at your companies and on your jobsites. We need your help in implementing these principles every day to ensure that we Stop the Drop.

Stop the Drop!

Through the OSHA and AGC Alliance, the Stop the Drop Task Force developed this toolbox talk for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. 10/2024

Tool Tethering

Stop the Drop

1 pound tape measure, dislodged from worker's belt

Fell from 50th floor, struck a piece of construction equipment (10-15 feet above ground) then ricocheted

Struck/ killed a 58-year-old, Gary Anderson, drywall delivery driver, when it struck him in the head

Delivery driver was not wearing a hardhat

The New York Times

Falling Tape Measure Kills Man at Jersey City Construction Site

Share full article

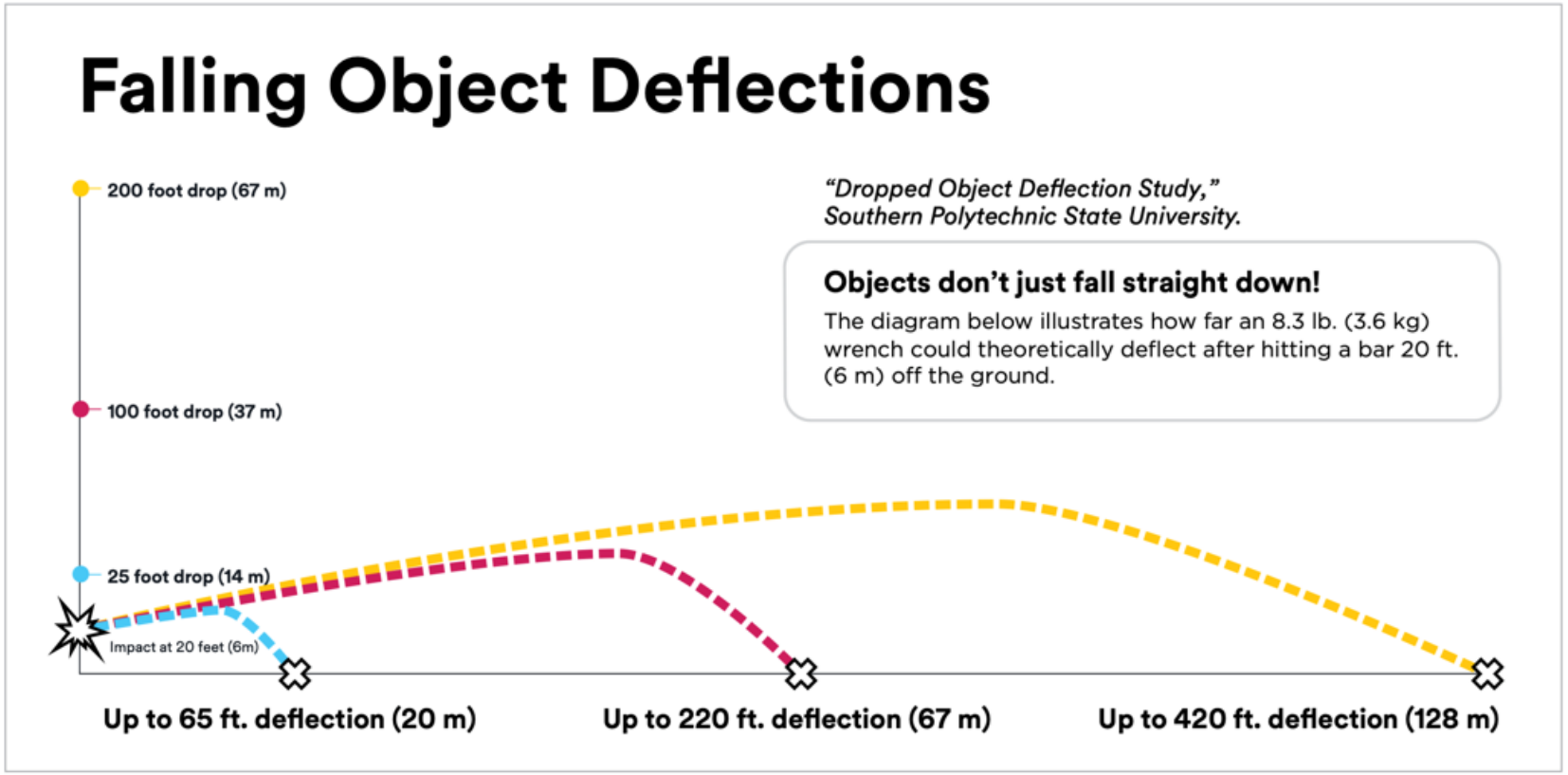
A view on Monday of 70 Christopher Columbus Drive, a 50-story apartment building under construction in Jersey City. Ben Solomon for The New York Times

By Marc Santora

Nov. 3, 2014

Tool Tethering

Stop the Drop

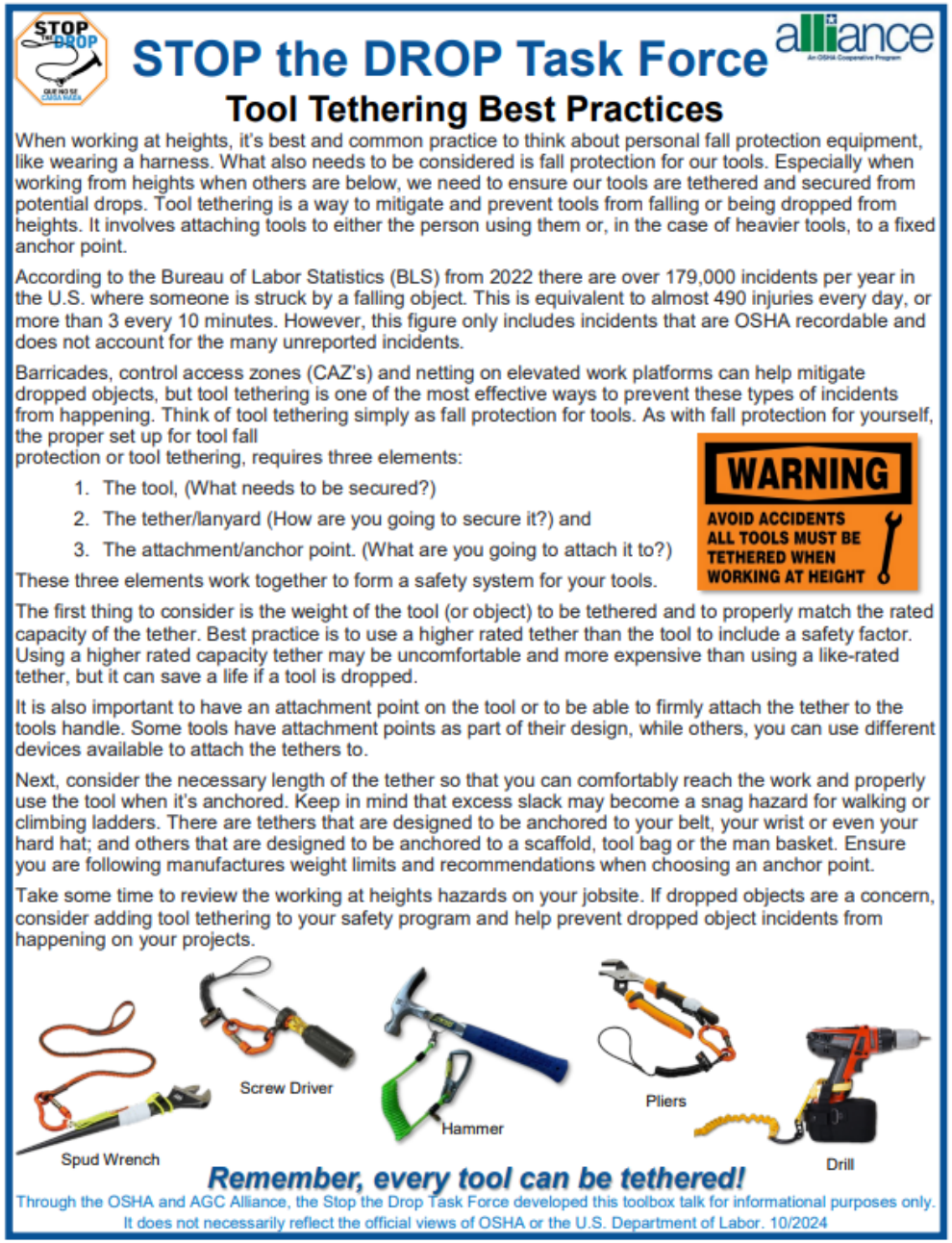


3M | SALA Fall Protection for Tools

Tool Tethering

Stop the Drop

- What needs secured?
- How are you going to secure it?
- What are you going to attach it to?
  - If tool < 5lbs = can be secured to the body
  - If tool > 5lbs = anchor to a rated structure



STOP the DROP Task Force

alliance

Tool Tethering Best Practices

When working at heights, it's best and common practice to think about personal fall protection equipment, like wearing a harness. What also needs to be considered is fall protection for our tools. Especially when working from heights when others are below, we need to ensure our tools are tethered and secured from potential drops. Tool tethering is a way to mitigate and prevent tools from falling or being dropped from heights. It involves attaching tools to either the person using them or, in the case of heavier tools, to a fixed anchor point.

According to the Bureau of Labor Statistics (BLS) from 2022 there are over 179,000 incidents per year in the U.S. where someone is struck by a falling object. This is equivalent to almost 490 injuries every day, or more than 3 every 10 minutes. However, this figure only includes incidents that are OSHA recordable and does not account for the many unreported incidents.

Barricades, control access zones (CAZ's) and netting on elevated work platforms can help mitigate dropped objects, but tool tethering is one of the most effective ways to prevent these types of incidents from happening. Think of tool tethering simply as fall protection for tools. As with fall protection for yourself, the proper set up for tool fall protection or tool tethering, requires three elements:

1. The tool, (What needs to be secured?)
2. The tether/lanyard (How are you going to secure it?) and
3. The attachment/anchor point. (What are you going to attach it to?)

These three elements work together to form a safety system for your tools.

The first thing to consider is the weight of the tool (or object) to be tethered and to properly match the rated capacity of the tether. Best practice is to use a higher rated tether than the tool to include a safety factor. Using a higher rated capacity tether may be uncomfortable and more expensive than using a like-rated tether, but it can save a life if a tool is dropped.

It is also important to have an attachment point on the tool or to be able to firmly attach the tether to the tools handle. Some tools have attachment points as part of their design, while others, you can use different devices available to attach the tethers to.

Next, consider the necessary length of the tether so that you can comfortably reach the work and properly use the tool when it's anchored. Keep in mind that excess slack may become a snag hazard for walking or climbing ladders. There are tethers that are designed to be anchored to your belt, your wrist or even your hard hat; and others that are designed to be anchored to a scaffold, tool bag or the man basket. Ensure you are following manufactures weight limits and recommendations when choosing an anchor point.

Take some time to review the working at heights hazards on your jobsite. If dropped objects are a concern, consider adding tool tethering to your safety program and help prevent dropped object incidents from happening on your projects.

Remember, every tool can be tethered!

Through the OSHA and AGC Alliance, the Stop the Drop Task Force developed this toolbox talk for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. 10/2024

Video

Stop the Drop

Barricading

Stop the Drop

- Guardrail system
- Opening protection
- Overhead protection
- Fencing
- Barricade-Danger Tape
- Debris netting
- Spotters

STOP the DROP Task Force

Barricading Best Practices

As we know, construction work is inherently dangerous. Workers are often exposed to struck-by hazards from falling objects. These incidents can result in workers sustaining serious injuries or even death. Each of us can help reduce the number of falling objects on construction sites by implementing effective safety measures.

Planning ahead and determining what safety measures are best for your project is the first step of many towards effective hazard mitigation and control. Proper planning is especially important when working at heights where there is a potential for objects to be dropped to lower levels.

The following are examples of safety measures in escalating levels of protection:

- *Guardrails*: : Must include top rails, midrails, and toe boards. Relatively easy to assemble and disassemble. Requires proper maintenance. Toe boards in particular help prevent small objects from rolling over the edge.
- *Opening protection/prevention*: The best remedy may be to eliminate the hazard altogether and try to prevent anything from falling.
- *Overhead Protection/Covered access*: Provides better protection than the above methods. Takes longer to assemble and disassemble. Can be used in conjunction with other protection methods.
- *Conex's*: Stronger, difficult to move, and requires lighting inside. You also have to consider if it is strong enough for what may fall.
- *Walk-through frames/scaffolds*: Take longer to build/assemble. Higher costs overall. Offer long term protection of walking paths. Potential hazards include fire/arson, slips/trips/falls, water/ice accumulation.
- *Fencing*: Provides strong protection to help block, deflect, and even stop a dropped object.
- *Barricade - Danger Tape:* Quick and easy to install. Typically used to delineate work areas. Requires continuous maintenance. Often ignored by workers and the public. Offers very limited protection
- *Housekeeping and toe boards*: Maintain work areas clean and free of clutter. Remove unused equipment and materials. Ensure that the housekeeping program is continuous and effective
- *Debris Nets*: Higher costs. Difficult to install and test. Higher maintenance. Requires relocation to working levels. Requires engineering and development. Not effective stopping small objects.
- *Spotters*: Least effective means to protect workers from falling objects. You should consider using spotters only when it is not feasible to install barricades or other methods of protection. Spotters may be exposed to struck-by hazards themselves.

Guardrails

Opening Protection

Overhead Protection

Fencing

Barricades

When conducting work at heights, evaluate all struck-by hazards on the jobsite. Use the guide above to choose the best option to mitigate any identified hazards.

Respect all barricades on the jobsite!

Through the OSHA and AGC Alliance, the Stop the Drop Task Force developed this toolbox talk for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. 10/2024

Material Securement

Stop the Drop

- Comply with OSHA standards
- Avoid storing by floor and wall openings
- Stable and secured
- Secured from wind uplift

STOP the DROP Task Force

alliance

Material Securement

A key step in the prevention of falling objects is how we secure and store materials, specifically at heights on our projects. We often see workers on unprotected sides and edges, focusing on their own personal fall protection but forget about securing the materials they are installing or are working from (i.e., ladders.)

Consistent with all elements of worker safety, proper planning and documentation (Job Safety Analysis) of the task are essential to the prevention of falling objects. Thinking ahead and having a plan before working at heights is best. Additionally, the following precautions should also be considered.

Material Storage/Handling Best Practices

- Comply with relevant OSHA standards (1926.250, 1926.252, 1926.759, 1926.501(c), 1926.451(h)).
- Select storage areas carefully and avoid storing materials near floor and wall openings.
- Materials shall not be placed within six (6') feet of hoist ways or inside floor openings and not within ten (10') feet of exterior walls that do not extend above the top of the material stored.
- Materials must be stable and secured if there is a potential for them to become dislodged from contact by equipment or personnel.
- Inspect the material prior to moving it to determine if containers are damaged, banding has been removed or similar load securing devices are not present.
- Transfer materials to an approved and rated container for safer handling if original containers are not suitable.
- Do not hang or drape any items, such as tool bags or lunch boxes, on guardrails or posts
- Secure any loose material, such as roofing insulation, plywood, etc. to prevent it from being blown by the wind.
- **DO NOT** throw any type of debris to a lower level. Use an enclosed trash chute to transfer debris from an upper level to a lower one.
- Tether and/or lace together all perimeter materials, such as forming re-shores, etc., back to a strong building component to help prevent the material from falling to lower levels.
- Erect perimeter screening to prevent smaller materials from accidentally being kicked or blown and falling to a lower level.
- When possible, position access ladders and stairways away from the perimeter of the building to reduce the likelihood of workers dropping tools and/or materials.
- Proper housekeeping and keeping the job site clean can prevent trips at ground level, good housekeeping on exposed decks can also prevent dropped/displaced objects. Keep a clean work area, free of clutter and objects that have the potential to be kicked or dropped below.

Material on Roof | Screening | Neatly Stored

Always Inspect Securement Equipment

Through the OSHA and AGC Alliance, the Stop the Drop Task Force developed this toolbox talk for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. 10/2024

Material Securement

Safe Cargo

Stop the Drop

- Only qualified riggers for hoisting with cranes
- Equipment lifted per manufacturer
- Protect rigging from sharp edges
- Control back side of trailer being offloaded

STOP the DROP Task Force

Safe Cargo

Another high hazard activity within dropped object safety is the lifting of materials to higher levels. The term Safe Cargo refers to how you are going to secure loads when transporting them to ensure there is no failure and exposure to falls or drops. There are many ways you can transport and move materials with cranes, forklifts or skid steers. All are used daily on jobsites and all have their own hazards.

Cranes & Rigging

Prior to lifting any load, we need to ensure the load is completely secure and rigged in a safe configuration. Only those that are certified are allowed to rig loads and signal cranes. Rigging needs to be rated for the load and inspected prior to use. One of the main reasons for dropped loads during crane activities is due to using non-rated pick points, or non-approved rigging configurations. We need to review the manufacturers design to ensure that pick points are approved, and that the proper rigging configuration is used.

Another common cause of dropped loads is because rigging is damaged or cut due to sharp edges on materials and equipment. All sharp edges need to have softeners installed, or rigging must be armored prior to lifting a load with sharp edges.

Loose items must always be physically secured or contained in an appropriate engineered lifting box. Pallets cannot be lifted directly and requires the use of an engineered lifting device. Wood boxes, crates and barrels cannot be rigged directly. Items can never be attached to a load through improvised means, such as the incident where the post was connected to the winch with tie-wire.

All loads also need to be inspected prior to lifting to ensure that all left behind items have been removed, such as lumber, wrapping bands, tools and debris. These items can easily be forgotten and become dropped objects.

Other Lifting Activities

The safe cargo principle isn't just relevant to cranes, but other activities that we use to lift material on our projects. An example of this could be using a pully to lift material up to another level, like you might see as part of a scaffold system. As well as using other mechanical equipment to get the material up to higher heights.

Prior to lifting loads with forklifts for example, we need to ensure that the loads are secured and stable. If a load can potentially become unstable during transport or lifting, we need to physically secure the load to the forklift. Loose items must be contained as well as stacked materials should be shrink wrapped, banded, or secured by other means.

There have been many incidents involving material and equipment falling off trucks during the loading and unloading process. Some of these have caused serious injuries from unrecognized pinch and crush points. We need to ensure we follow loading/unloading policies and keep people out of exclusion zones.

Ensure we are taking the time to evaluate your cargo transportation activities on your jobsite. Inspect every load before moving it and make sure all the hazards are addressed before preforming the work. We expect everyone to follow the Safe Cargo principles and work towards eliminating the hazards on your jobsite around Stop the Drop.

Only those certified should perform rigging activities

Safe Cargo – Loading / Unloading

TRUCK LOADING & UNLOADING PROCEDURE

JEDUNN CONSTRUCTION

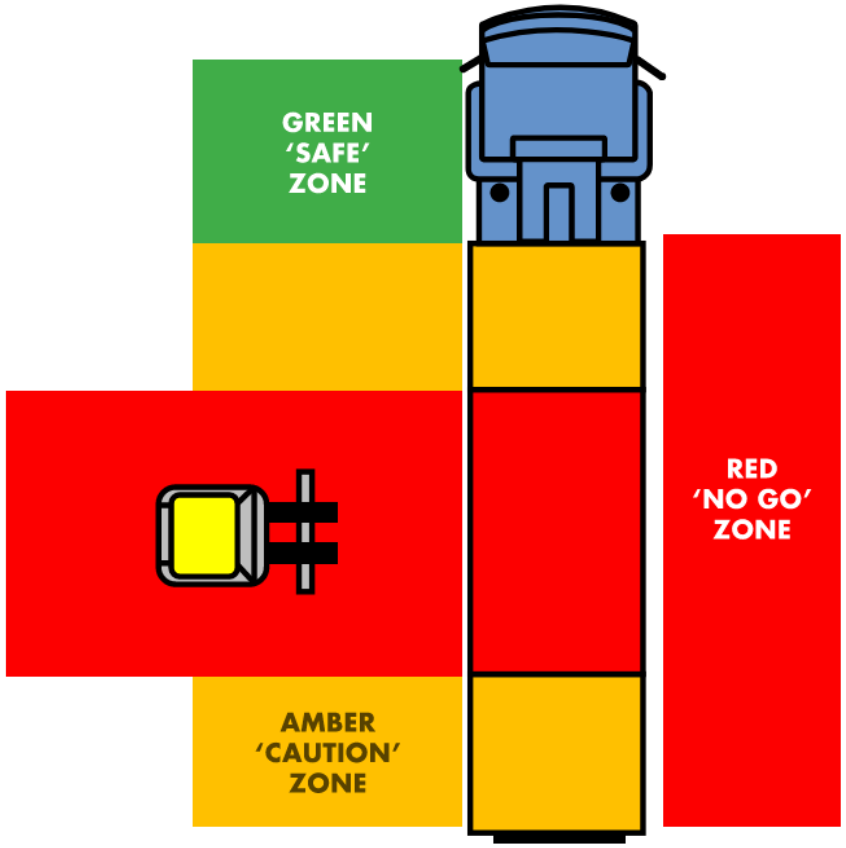
SAFETY
EVERYONE.
EVERYWHERE.
ALL THE TIME.

DATE: _____ LOAD: _____

#	ITEM	CHECK	OK/NG/NA	COMMENTS
1	Driver Expectation and Access	Park on even surface?		
		Driver wearing all PPE?		
		Driver location during operation?* **Note: Driver should remain in the cab during loading/unloading. If there is the potential for the load to go over the top of the cab the driver should be removed to a safe location.*		
		Safe access to and from the load		
2	Load Evaluation	Is the load stable and secure from movement?* **Note: Additional controls are required if the load appears to be unstable prior to removing straps/chains*		
		Adequate Dunnage and Cribbing?		
		Is load co-mingled?* **Note: If yes, review ability to unload JED material safely*		
3	Exclusion Zone	Do you have a loading/unloading area setup?		
		FORKLIFT: Exclusion Zone Set-up at a minimum of 10 feet on the opposite side of the forklift with danger tape, or red rope. **Controlled Access Zone MUST BE RED.**		
		FORKLIFT: Spotter used on the opposite side of the forklift if danger tape or rope is unfeasible		
4	Flaggers	Flaggers used to control vehicle and pedestrian traffic.* **Note: If loading/unloading outside the boundaries of the project flaggers are required.*		
5	JSA	Review JSA with spotter(s)/flagger(s). Ensure all personnel are outside the Exclusion Zones		
Proceed with Loading/ Unloading		All requirements above met?		

Operator/Riggers Signature: _____ Date: _____

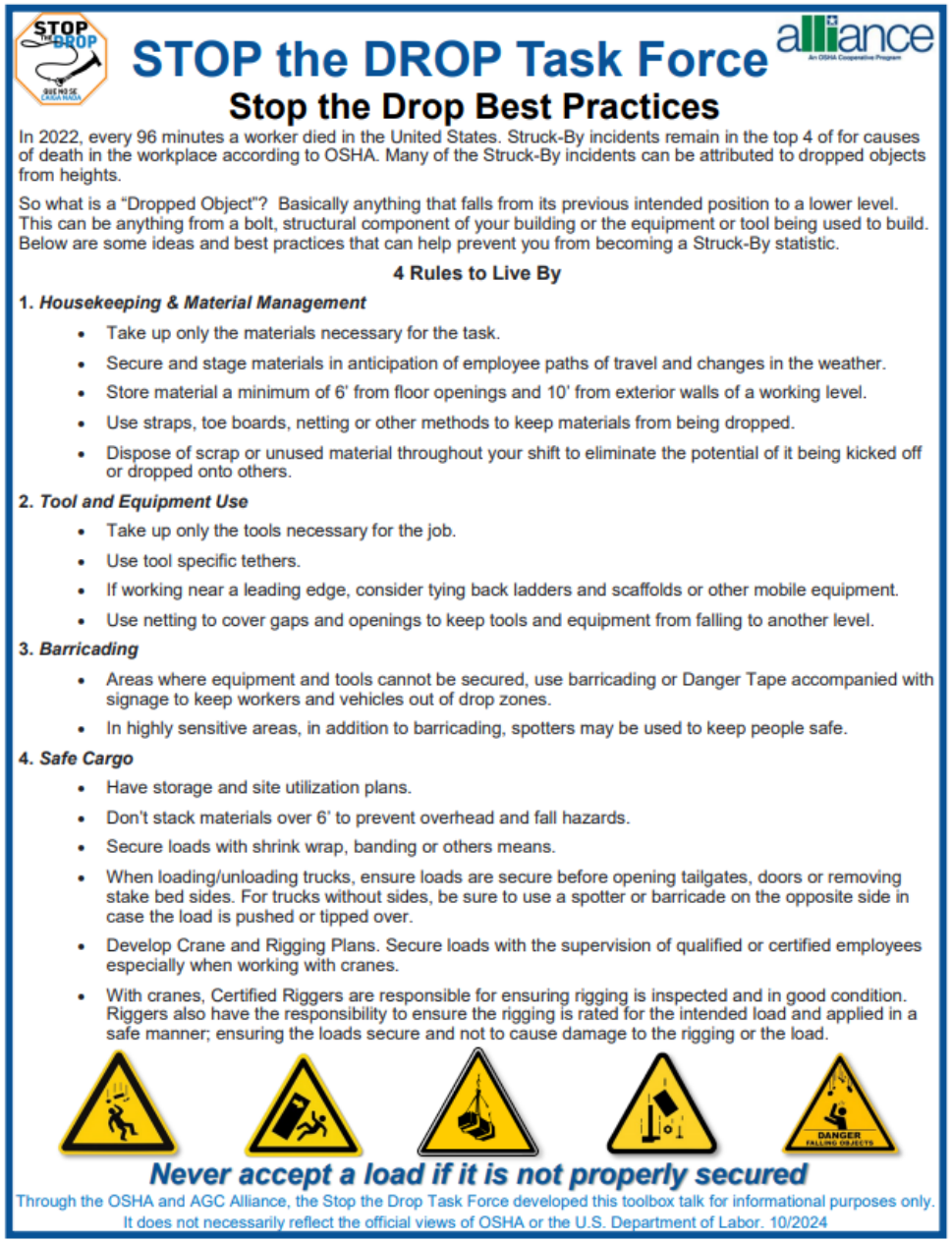
LOADING/UNLOADING EXCLUSION ZONE *(LUEZ)*



Best Practices

Stop the Drop

- Housekeeping & Material Management
- Tool & Equipment Use
- Barricading
- Safe Cargo



STOP the DROP Task Force

Stop the Drop Best Practices

In 2022, every 96 minutes a worker died in the United States. Struck-By incidents remain in the top 4 of for causes of death in the workplace according to OSHA. Many of the Struck-By incidents can be attributed to dropped objects from heights.

So what is a "Dropped Object"? Basically anything that falls from its previous intended position to a lower level. This can be anything from a bolt, structural component of your building or the equipment or tool being used to build. Below are some ideas and best practices that can help prevent you from becoming a Struck-By statistic.

4 Rules to Live By

1. ***Housekeeping & Material Management***
   - Take up only the materials necessary for the task.
   - Secure and stage materials in anticipation of employee paths of travel and changes in the weather.
   - Store material a minimum of 6' from floor openings and 10' from exterior walls of a working level.
   - Use straps, toe boards, netting or other methods to keep materials from being dropped.
   - Dispose of scrap or unused material throughout your shift to eliminate the potential of it being kicked off or dropped onto others.
2. ***Tool and Equipment Use***
   - Take up only the tools necessary for the job.
   - Use tool specific tethers.
   - If working near a leading edge, consider tying back ladders and scaffolds or other mobile equipment.
   - Use netting to cover gaps and openings to keep tools and equipment from falling to another level.
3. ***Barricading***
   - Areas where equipment and tools cannot be secured, use barricading or Danger Tape accompanied with signage to keep workers and vehicles out of drop zones.
   - In highly sensitive areas, in addition to barricading, spotters may be used to keep people safe.
4. ***Safe Cargo***
   - Have storage and site utilization plans.
   - Don't stack materials over 6' to prevent overhead and fall hazards.
   - Secure loads with shrink wrap, banding or others means.
   - When loading/unloading trucks, ensure loads are secure before opening tailgates, doors or removing stake bed sides. For trucks without sides, be sure to use a spotter or barricade on the opposite side in case the load is pushed or tipped over.
   - Develop Crane and Rigging Plans. Secure loads with the supervision of qualified or certified employees especially when working with cranes.
   - With cranes, Certified Riggers are responsible for ensuring rigging is inspected and in good condition. Riggers also have the responsibility to ensure the rigging is rated for the intended load and applied in a safe manner; ensuring the loads secure and not to cause damage to the rigging or the load.

Never accept a load if it is not properly secured

Through the OSHA and AGC Alliance, the Stop the Drop Task Force developed this toolbox talk for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. 10/2024

The Ask

Stop the Drop

- Stand downs/ Toolbox Talks
- Sharing stories of dropped objects
- “Smashing Pumpkins”
- Increase observations/ audits
- Increase conversations about prevention dropped objects
- Safety moments about dropped objects
- Recognize the good!

STOP THE DROP

QUE NO SE CAIGA NADA

Other Resources

Stop the Drop

- AGC of Colorado “Stop the Drop” task force website https://www.agccolorado.org/stop-the-drop
- OSHA Construction eTool https://www.osha.gov/etools/construction/struck-by

Other Resources

Stop the Drop

Name	Company	Email	Phone #
Adam Hardin	Ergodyne	Adam.hardin@ergodyne.com	317.750.5689
Jackson VanWinkle	Milwaukee	Jackson.vanwinkle@milwaukeetool.com	682.666.8104
Marc Malezija	OES/Falltech	marc@theoesgroup.com	303.726.9989
Matt Schmidt	ShurSales/3M	mschmidt@shur-sales.com	720.291.9161
Bill Moor	Petzl	bmoor@elevationpro.net	205.613.3586

Stop the Drop

Questions?

Through the Alliance between OSHA's Englewood and Denver Offices and the Stop-The-Drop Taskforce, this presentation was developed for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. October 2024.