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# FALLING OBJECT PROTECTION AND PREVENTION

## HEADS UP!

### PURPOSE

This Falling Object Prevention and Protection Policy is intended to provide project supervision with the necessary information to implement a program that will prevent materials and tools from becoming falling object hazards, and if something does fall, protect individuals below. This policy is not intended to replace standard precautions during normal overhead hoisting or construction activities, such as setting precast, setting overhead steel, flying form tables, or stripping formwork. Keeping the public and our employee-owners safe is the main goal. Most of our work is done on ground level, but at times we do work at heights. If you have concerns, please contact the Safety Manager to have a falling object prevention plan developed for your jobsite.

### FALLING OBJECT PREVENTION

#### **NOUN - [FAWL-ING OB-JIKT PRI-VEN-SHUHN]**

Falling object prevention involves the use of various methods such as toe boards, fences, netting, tiebacks, lacing, and lanyards, to prevent objects from falling from a structure.

### FALLING OBJECT PROTECTION

#### **NOUN - [FAWL-ING OB-JIKT PRUH-TEK-SHUHN]**

Falling object protection involves the use of debris nets, overhead canopies, restricting ingress/egress, and other systems to protect individuals in the event an object falls from a structure.

### FALLING OBJECTS

#### **NOUN - [FAWL-ING OB-JIKTS]**

Include, but are not limited to hand and power tools, debris, and unrestrained materials being handled or installed near the perimeter of an elevated structure. Other materials such as precast, heavy formwork tables, and post shores will need to be secured/restrained to prevent initial displacement.

### ROLES & RESPONSIBILITIES

#### **Project Supervision**

- Project supervision should be aware of the Safety Management Program's content.
- Audit the jobsite for locations where potential Falling Objects may create a hazard and implement preventative and/or protective measures.

#### **Employee-owners**

- Report hazardous conditions in relation to falling object hazards to project supervision immediately and if able, make prompt corrections.
- Provide feedback on falling object prevention and protection measures to project supervision.
- Contact the Safety Manager if you need help identifying fall hazards.

### PROCEDURES

#### **Project Planning**

The Safety Manager, or their designate, will be consulted to assist in the development of the Site Safety Falling Object Prevention Plan (SSFOPP) if needed.

Hazard considerations may include the following and your Safety Manager has standard details of materials used in past applications that may be of help when preparing your SSFOPP:

- Maximum weight of the falling object
- Distance that falling object protection should extend out from the structure and its relationship to the overall height of the structure
- Materials used to restrain
- Materials used to protect
- Protection at outrigger platforms
- Protection at man/material hoists
- System inspection process
- Tasks and processes that could create a falling object condition
- Methods to be used, on levels above the ground, to prevent tools and materials from falling off the structure
- Potential weather impacts, such as wind, and the increase in falling object potential

Questions to consider:

- Is there enough room around the perimeter of the structure to create a no-access zone that would prevent individuals from being struck?
- On the first level of the structure, will standard guardrails with mesh material be used to prevent access and egress from locations that are not protected?
- Can materials be stored far enough away from the structure so as to prevent falling objects from striking individuals as they access the stored materials?
- What type(s) of overhead protection will be used at points of access and egress?
- How many access and egress locations will need to be protected?
- Will additional protection be required below outrigger landing platforms?
- When scaffolds are erected next to, or hung from the structure, how will the individuals working from the scaffolds be protected?
- If work will need to be performed below occupied scaffolds or aerial lifts, will individuals on the scaffolds and aerial lifts need to use tool lanyards to prevent tools from falling?
- In locations where form stripping operations are performed, how will materials be prevented from falling off the structure?
- Will a periodic "re-shore inspection log" be helpful?

#### **Falling Object Prevention**

- Preventive measures must be in place to protect individuals from being struck by construction tools, material, or debris that may fall or be blown from upper levels. Measures shall be outlined in the SSFOPP.
- One of the most effective falling object prevention methods is to install a standard wood or cable guardrail system with a solid or orange mesh material attached in such a way as to enclose the area between the floor/ground and the top rail.
- The guard rail system shall be located at the perimeter of the structure and shall not extend into any areas that are not protected from above.
- Toe boards shall be installed around all floor and roof openings, elevated work platforms, and scaffolds where tools, debris, or equipment may fall onto individuals below. Toe boards must be strong enough to withstand a force of at least 50 lbs applied in any downward or outward direction and must be at least 3-12 inches high.
- Work outside of the protected deck perimeter may require individuals to tether hand and power tools with the use of tool lanyards. Other forms of protection may be provided; for example, the area below the working area can be barricaded and posted with proper signage warning of the overhead hazard.
- When stripping elevated decks, protection measures for falling objects shall be evaluated. If there is live traffic, workers or other potential risks, a plan to keep material from falling off the structure may be necessary. All exposed areas below shall be properly barricaded, and signage posted.
- Installing debris netting extending from the floor above down to the toe board or floor of the level that is being stripped is another option that could be considered. If used, the debris net shall remain in place until all materials have either been removed or secured to a height less than the top of the guardrail.
- Floor or deck holes shall be protected to prevent objects from falling to lower levels.
- Post shores shall be laced, tethered, or otherwise secured to prevent the possibility of displacement. This is especially important on the perimeter of the structure where a displaced shore may fall from the structure to areas below. The contractor who installs shores and reshores shall schedule a daily audit to assure they are not loose.

#### **Falling Object Protection**

- Ingress/egress shall be in designated areas only. Areas not designated as ingress/egress shall have effective barriers to prevent entry and exit to and from the structure, the orange mesh material mentioned prior is one option. All designated ingress/egress locations shall have overhead falling object protection.
- The width of the controlled access area will need to be determined on a jobsite-by-jobsite basis, or in some cases, elevation by elevation. Design considerations include work activity, the height of the structure, and the footprint of the property.
- The controlled access area shall be reviewed as work progresses; to make sure it is adequate.
- The ingress/egress access structure shall be a walk-through structure built per the provided designs in the resources below. The structure designs have been developed to protect against general material/debris, hand and power tools, or other smaller items. The height clearance shall be at least 7 feet and at least 5 feet in width. Adequate lighting is required, especially for areas being used during non-daylight hours. Sufficient walking surfaces clear of slip and/or trip hazards will be maintained. Here is a list of considerations when building a canopy:
  - + **Decking** - If the canopy decking is used for storage, it must be engineered.
  - + **Wind Loads** - Decking shall be secured to the canopy framework to prevent uplift. The canopy framework structure must be anchored to the ground, adjacent structure, or other methods to ensure stability.
  - + **Vehicle Barrier** - Canopies erected close to vehicular or equipment traffic must be protected by concrete barriers.
  - + **Structure Length** - The structure will extend a minimum of 20' from the face of the structure unless restricted by jobsite perimeter restrictions or other objects. The best practice is for protective entrances to extend 30 degrees out from the potential exposure heights at the face of the structure. If jobsite logistics or other restrictions interfere with maintaining said protection lengths, structure lengths will be reviewed with the Safety Manager, or their designate, as part of the SSFOPP.

#### **Handling, Storing, and Securing of Tools and Materials**

- All tools shall be raised and lowered by means of a hand line.
- Stored material shall be maintained in a manner that does not block access and is not subject to being knocked over.
- Large tools will be secured to the scaffold guard rail or aerial lift railing with cable.
- Electrical leads, welding leads, and other materials shall not be draped or tied to guard rail systems. Leads, if required, should be tied to the base of the stanchions.
- Toeboards shall be installed around all floor and roof openings, elevated work platforms, and scaffolds where tools, debris, or equipment may fall onto persons below.