

Protective Barriers, Warning Signs and Tags

Short description

This procedure outlines the guidance for the use of protective barriers, warning signs and tags on Centennial project sites.

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1 Objective and area of application

The objective of this section is to provide consistent and specific standards regarding the use and implementation of construction protective barriers, warning signs and tags and to ensure that each Centennial employee and subcontractor is adequately trained and fully aware of safety procedures associated with protective barriers, warning signs and tags.

This section establishes requirements for a uniform visual system of identification of hazards in the work environment. It provides for the design, application and use of signs, tags and temporary barriers by all Centennial employees and subcontractors.

This section provides:

- An effective means of communicating information concerning safety hazards to observers so that risk of injuries resulting from these hazards can be avoided
- A means of uniformly applying safety signs, tags, and temporary barriers for demarcating hazards

Each Centennial superintendent and / or PSO shall conduct routine inspections in accordance with HSEQ Manual section 7 (HSEQ Inspection, Surveillance, Audit and Monitoring) of jobsites to ensure compliance with this section.

This section applies to all Centennial sites:

- Construction project sites
- Permanent office facilities
- Temporary office facilities

2 Superior and additional applicable documents

1000_GP_11_01_en_5.0 Global Policy on Health, Safety, Environment/Sustainability and Quality (HSEQ)

Manual of Uniform Traffic Control Devices (MUTCD)

ANSI Z535.5

This section of the HSEQ Manual applies to all Centennial employees and subcontractors who are performing work in Centennial facilities and / or on project sites. There may be more stringent requirements than this section as defined by specific State, local or contact specific requirements. If there is a conflict between this section and other applicable regulations, the more stringent will apply.

3 Definitions

The following definitions of terms are important for an understanding of this procedure.

Term	Definition
Centennial	All Centennial employees, joint venture employees, subcontractors and business partners
Competent person	Person who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees and has authority to take prompt corrective measures to eliminate or protect against those hazards
Barricade	An obstruction to deter the passage of persons or vehicles
DOT	Department of Transportation
HSEQ	Health, Safety, Environment and Quality
Long duration project	A project with a duration or >90 days
MUTCD	Manual of Uniform Traffic Control Devices
OSHA	Occupational Health and Safety Administration
PSM	Project Safety Manager
PSO	Project Safety Officer
SSR	Senior Site Representative
Sign	Warning of hazard, temporarily or permanently affixed or placed at locations where hazards exist
Signal	Moving signs, provided by workers such as flaggers or by devices such as flashing lights to warn of possible or existing hazards
Tag	Temporary signs usually attached to a piece of equipment or part of a structure to warn of existing or immediate hazards
HSEQ Director	Leads the HSEQ Team

4 General requirements

Below are some of the general requirements that apply to the use and placement of temporary barriers, signs and tags on Centennial project sites:

- Safety signs and barriers are a supplement to, but not a substitute for, engineering and additional administrative controls when mitigating hazards
- Safety signs and barriers shall be strategically and prominently placed to alert and inform a viewer in sufficient time so that the viewer can take appropriate evasive action to avoid potential harm from the demarcated hazard
- Safety signs and barriers shall be placed and constructed in a manner that they are legible, non-distracting and do not, of themselves, become hazardous

- Safety signs and barriers shall be displayed with illumination or retro-reflective qualities to ensure visibility and legibility under normal working conditions; when illumination is inadequate, supplemental illumination shall be provided to ensure that safety signs shall be legible and the color-coding is not distorted
- Safety signs and barriers shall be promptly removed or covered when a hazard no longer exists
- Accident prevention tags shall be used only as a temporary means of notifying employees of an existing hazard, such as defective tools, equipment, etc.

4.1 Construction limit barriers

Construction areas shall be barricaded and posted “Construction Area” with a physical boundary (such as fencing where practical) to control access and warn of potential hazards.

Below are some examples of appropriate construction site signage:



4.2 Minimum requirements for project site postings

Centennial project sites shall have a “job board” with all applicable postings complying with all regulatory posting requirements and contract specific posting requirements. The minimum project site postings include:

- Minimum requirements for PPE on the project site
- The four leading causes of fatalities in the construction industry (falls, struck by, caught in or between, electrocution)
- Instructions that all contractors be equipped with first aid kit, GFCI, and fire extinguisher
- OSHA Job Safety- “It’s the Law” poster
- Emergency contact information posting
- Map and route to the nearest hospital and occupational clinic
- “Safety First” posting

An example of a project site safety posting that complies with the above criteria is included on the following page:

Jobsite Safety Postings

CENTENNIAL
Part of the Bilfinger Group

All visitors must check in at the project site office
 The following PPE is required to be worn at all times:

Hard Hat Safety Glasses Work Boots

DATE OF LAST LOST WORKDAY INCIDENT

Project Title: _____
 Task Order #: _____

MONTH	DAY	YEAR

NOTE: To view the following documents please refer to the Project Binder / Site Superintendent:

- Site Specific Accident Prevention Plan
- Activity Hazard Analysis
- Deficiency Tracking Log
- Hazardous Material Inventory (Safety Data Sheets)

4 Leading Causes – In The Construction Industry

Falls From or Into

Struck By

Caught In or Between

Electrocution

Know Them! Look For Them! Prevent Them!

All Contractors are Required to Have the Following Items:

First Aid Kit

GFCI

Fire Extinguisher

Insert
Emergency Contact/Information Posting
Emergency Rally Point

Insert
Map & Route to Nearest Medical Facility

Job Safety and Health
IT'S THE LAW!

All workers have the right to:

- A safe workplace
- Receive a safety or health consultation with your employer or OSHA, to report a work-related injury or illness, without being retaliated against.
- Receive information and training on job hazards, including all hazardous substances in your workplace.
- Request an OSHA inspection of your workplace if you believe there are unsafe or unhealthy conditions. OSHA will keep your name confidential. You have the right to have a representative contact OSHA on your behalf.
- Participate for have your representative participate in an OSHA inspection and speak in private to the inspector.
- File a complaint with OSHA within 30 days by phone, online or by mail if you have been retaliated against for using your rights.
- See any OSHA citations issued to your employer.
- Request copies of your medical records, assess that measure hazards in the workplace, and the workplace injury and illness log.

Contact OSHA. We can help.

1-800-321-OSHA (6742) • TTY: 1-877-889-5627 • www.osha.gov

SAFETY FIRST

EVERY INJURY
NO MATTER HOW SLIGHT
MUST BE REPORTED
IMMEDIATELY

CAUTION

CONSTRUCTION AREA
AUTHORIZED
PERSONNEL ONLY

4.3 Barricade tape

4.3.1 Yellow and black barricade tape (caution tape)

Yellow and black barricade tape serves as a caution to indicate to employees that a potential hazard exists.

This barricade tape is used for, but not limited to, the following:

- Excavation less than 4 feet in depth
- Identification of trip hazards, and low hanging objects
- Material storage on the site

4.3.2 Red barricade tape (danger tape)

Red barricade tape indicates DANGER and that a potentially serious hazard may be present. No Centennial employee, subcontractor employee or any other person may enter without first obtaining permission from the erector of the tape.

This barricade tape is used for, but is not limited to, the following:

- Overhead work
- Live electrical components
- Scaffold under construction
- Around swing radius of equipment with a rotating superstructure
- Slip/trip/fall hazard

4.4 Traffic control devices

All traffic control signs, flaggers, devices and / or barricades used for protection of construction workers and roadway users shall conform to Part VI of the MUTCD (most current version).

4.5 Accident prevention signs

Please use the chart below to determine the appropriate signal word:

If Worst Credible Severity of Harm is Death or Serious Injury.		Probability of Accident if hazardous Situation is not Avoided	
		WILL	COULD
Probability of Death or Serious Injury if Accident occurs	WILL		
	COULD		

If Worst Credible Severity of Harm is Moderate or Minor Injury.	
For all Probabilities:	

If Worst Credible Severity of Harm is Property Damage.	
Preferred →	
For all Probabilities:	
Alternate →	

4.5.1 Caution signs

Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices. Caution signs shall have yellow as the predominating color with a black upper panel and borders and yellow lettering of "caution" on the black panel. The lower yellow panel shall be used for additional sign wording. Black lettering shall be used for additional wording.



4.5.2 Danger signs

Danger signs shall be used only where an immediate hazard exists. Danger signs shall have red as the predominating color for the upper panel; black outline on the borders; and a white lower panel for additional sign wording.



4.5.3 Exit signs

Exit signs, when required, shall be lettered in legible red letters, not less than 6 inches high, on a white field and the principal stroke of the letters shall be at least three-fourths inch in width.



4.5.4 Safety instruction signs

Safety instruction signs, when used, shall be white with green upper panel with white letters to convey the principal message. Any additional wording on the sign shall be black letters on the white background.



4.5.5 Accident prevention tags

Accident prevention tags shall be used as a temporary means of warning employees of an existing hazard, such as defective tools, equipment, etc. They shall not be used in place of, or as a substitute for, accident prevention signs.

- Accident prevention tags contain a signal word and a major message. The signal word shall be legible at a minimum distance of five feet
- Accident prevention tags shall not to be used as a substitute for accident prevention signs
- Accident prevention tags shall be affixed as close as safely possible to the respective hazards by a positive means, such as string, wire, or adhesive, that prevents loss or unintentional removal
- Accident prevention tags shall be promptly removed when a hazard no longer exists. The tag is removed by the person who installed the tag or their designee

Examples include, but are not limited to:





4.6 Pedestrian protection

Pedestrians shall be protected at all times from the potentially negative effects of activities taking place on and around or related to Centennial construction project sites. Since construction operations alter the familiar setting and path of travel, it is necessary to provide visible directional signs or guidance to lead personnel who are unfamiliar with the project toward a safe path and away from potential hazards. No demolition or construction shall be performed on any building or structure adjacent to a public way in general use unless the pedestrians are protected by approved methods as specified in this section. Each project with a scope of work that includes demolition, alteration, remodel or new construction shall be reviewed to determine if pedestrian protection is required for the project.

For the purpose of this section, pedestrians include, but are not limited to, the following categories of personnel:

- Guests and visitors
- Customers
- Clients
- Building occupants
- Facility end users
- Regulatory inspectors
- Other personnel who may enter the work area (aware or un-aware)

The following shall be considered in regards to planning for pedestrian protection on or near Centennial project sites:

- Pedestrians shall not be exposed to hazardous acts or conditions
- Pedestrians shall not be exposed to project site traffic from vehicles or mechanized equipment moving on or around the project site
- Pedestrians shall be provided with a safe, non-hazardous travel path that replicates as nearly as possible a sidewalks or a compacted footpath

When pedestrians are required to access and pass through a Centennial project site they shall be accompanied by a Centennial employee or competent person. Appropriate signs and barricades shall be placed where applicable and in accordance with this section.

4.6.1 Project signs and fencing

Signs warning of the presence of construction hazards and requiring unauthorized

persons to keep out of the construction area shall be conspicuously posted on all Centennial project sites. The Centennial PSO, project manager and/or superintendent shall evaluate the proposed site and activities to determine if temporary fencing or other controls are needed to ensure pedestrians and the public are not exposed to hazards created from construction activity.

4.6.2 Vehicles and mechanized equipment

Project sites or locations where pedestrians are especially vulnerable to being struck by vehicles or motorized equipment shall be protected by physical barriers or restricted from entering the work area. Physical barrier systems erected to protect pedestrians from vehicles shall be of sufficient strength and have adequate deflection characteristics. Movement by work vehicles and mechanized equipment across designated pedestrian paths shall be minimized and, when necessary, should be controlled by certified flaggers and/or temporary traffic control in accordance with the MUTCD.

4.6.3 Debris and falling objects

Project sites of long duration, with exposure to high pedestrian volumes, and/or where falling debris is a concern (such as work on overhead scaffolding or structures), may require a canopied walkway be constructed. These covered walkways shall be sturdily constructed and adequately lit for nighttime use (if necessary).

4.6.4 Pedestrian walkways

Construction sites contain a variety of hazardous conditions such as work areas, workers, tools, equipment, machines, and stockpiles of materials that may be potential obstacles and hazardous to pedestrians when not correctly stored.

Roadway and sidewalk maintenance and construction activities can adversely affect pedestrian access by:

- Removing or renovating sections of the primary path of travel or sidewalks from public use
- Failing to provide a continuous, accessible path of travel around or through project sites
- Failing to provide adequate pre-warning and rerouting signs to protect pedestrians from affected areas
- Allowing equipment and machines to operate in close proximity to pedestrians
- Reducing or blocking access and emergency egress with materials and/or equipment
- Restricting the use of crosswalks by blocking access to available curbs and/or ramps
- Not providing safe and accessible alternative routes through and around the project site

A walkway shall be provided for pedestrian travel around every construction and demolition site unless the authority having jurisdiction authorizes the sidewalk to be fenced or closed.

5 Color coding system

The following colors or color combinations shall be used for safety coding on all signs, tags, barriers and other markings meant to visually convey hazard information:

- Safety red shall be the color for the identification of DANGER and STOP. Common applications for the color safety red are: the background color of the signal word panel for DANGER signs/tags, fire protection equipment and apparatus, flammable liquid containers, STOP bars and STOP buttons or emergency shut-off controls
- Safety orange shall be the color used to identify intermediate-level hazards (e.g., WARNING) and hazardous parts of machines or tools. Common applications are the background color of the signal word panel for WARNING signs, labels and tags, and for marking parts of equipment that may cut, crush or otherwise injure
- Safety yellow shall be the color for the identification of CAUTION. Solid yellow, yellow and black stripes or yellow and black checkers are all acceptable color coding schemes to ensure maximum contrast with different colored backgrounds. Common applications are the background color of the signal word panel for CAUTION safety signs, labels and tags marking physical hazards, and tape, rope and barricades used to establish boundaries
- Safety green shall be the color for emergency egress and the location of first aid and safety equipment. Common applications are the background color of the signal word panel for general safety signs, demarcating the location of first aid stations and marking safety showers
- Safety blue shall be the color for the identification of safety information used on informational signs and bulletin boards. Common applications are the background color for the signal word panel for NOTICE and informational safety signs and mandatory action signs for wearing personal protective gear such as hard hats
- Fluorescent orange or orange red shall be the color used to signify the actual or potential presence of biological hazards and to identify equipment, containers, rooms, materials or combinations thereof which contain or are contaminated with viable biological agents. Biological hazards or biohazards are microorganisms that are known to cause disease in healthy humans

6 Amendment history

Date	Version	Revised content
07.07.2014	1.0	Initial Preparation
06.29.2015	1.1	Addition of "pedestrian protection" - paragraph 4.6
01.01.2018	2.0	Updates to Paragraph 2 Superior Documents to add the Group Policy and Global Standards, Paragraph 3 Definitions (Centennial and HSEQ Director), Paragraph 4.1 Construction limit barriers (removal of rope as a barrier), Paragraph 4.2 Minimum requirements for project site postings (addition of occupational clinic and updated jobsite posting), Paragraph 4.3.1 Yellow and black barricade tape (removal of entry statement) and Paragraph 4.3.2 Red barricade tape (addition of slip/trip/fall hazard)

7 Appendix

There are no appendices to this section.