Understanding and Calculating Fall Clearances

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And Stark County Safety Committee Steering Member

Falls are common and, too often, fatal. They are one of the most common causes of work-related injuries and deaths in the construction industry, and occur frequently in other industries as well. It is important to understand fall clearances and how to select the correct fall arrest equipment.

Personal fall arrest systems (PFAS) are used to safely arrest a worker in a fall from a working level. They consist of three key components including an anchorage point, connectors (including a lanyard, deceleration device, or self-retracting lifeline), and a body belt or body harness. Individually these components will not provide protection from a fall. But, when used properly and in conjunction with each other, they form a personal fall arrest system that becomes vitally important for safety on the job site.

Although a personal fall arrest system is meant to keep the worker safe in the event of a fall, it will not protect the worker if the fall distance to the nearest obstruction is less than that of the full length of the arrest system after deployment of all its’ components. It is crucial to always know your fall distances and select the proper fall arrest equipment to meet fall protection requirements.

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Spotlight Company

US Safety Gear Inc.

US Safety Gear Inc. is a full line safety equipment distributor based in Warren, Ohio since 1989 with 6 retail stores in Ohio, including our store at 2813 Cleveland Avenue SE, Canton, Ohio.

We offer on-site shoe trailer service for safety footwear and feature Carolina and Timberland Boots. We also perform glove surveys to help improve quality and safety while reducing overall cost. Please contact me if I can help with your logo clothing program for golf shirts, t-shirts, safety vests, hats, or jackets.

Chris Zabel, Territory Manager
US Safety Gear Inc.
(330) 717-6626
czabel@ussafetygear.com
Total fall clearance distances are simple to calculate based on the following factors. This will give you the required fall clearance distance needed below the working surface to prevent workers from a fall obstruction.

1. Length of Anchorage Connection
2. Free Fall Distance
   - This is the distance the worker falls before the personal protective arrest system begins to apply force to arrest the fall.
   - Maximum Free Fall Distance:
     - Construction Industry: 6 feet, nor contact with any lower level per OSHA requirements- 29 CFR 1926.502(d)(16)(iii)- Fall protection systems criteria and practices.
     - General Industry: 4 feet, nor contact with any lower level per OSHA 29 CFR 1910 Subpart D- Walking Working Surfaces
3. Deceleration distance
   - This is the additional distance the worker falls after the activation of the shock pack for lanyards and locking point for self-retracting lifelines (lanyard/lifeline stretch/elongation)
   - Maximum length: 3.5 feet per OSHA requirements- 29 CFR 1926.502(d)(16)(iv)
4. D-ring shift (Harness Shift)
   - This is the distance the D-ring moves and the harness shifts when they support the worker’s full weight. As the line tugs upwards, the harness can shift so the D-ring location is higher on the worker than it was before the fall. This is typically assumed as 1 foot, but can vary, depending on the equipment design and manufacturer.
5. Back D-ring height
   - The D-ring height is measured as the distance between the D-ring and the worker’s shoe sole. This height is often standardized as 5 feet for six foot tall workers, but can vary depending on the worker’s actual height and may need adjusted accordingly during calculation.
6. Safety Factor
   - The safety factor is the remaining distance between the worker’s shoe soles and the nearest obstruction below. This is typically 2 feet.

The equations below show how to add the values in order to calculate total fall distance clearance for Self Retracting Lifelines (SRL) and Shock-Absorbing Lanyards. A fall arrest system will not protect a falling worker if the calculated clearance distance is greater than the actual distance available to the nearest obstruction.
**Respirable Crystalline Silica Rule — What Do You Need to Know: Medical Surveillance Requirement**

Who needs medical surveillance under the new rule?

- In general industry and maritime, medical surveillance must “be made available to employees exposed to respirable crystalline silica at or above the action level of 25 μg/m³ as an 8-hour TWA [time weighted average] for 30 or more days per year.”
- In the construction industry, the new rule requires that medical surveillance be made available to employees who “use respirators for 30 or more days per year” in situations where those respirators are required by OSHA.

What exactly must the physician’s exam involve?

OSHA specifies that the exam conducted by the physician (or other qualified healthcare provider) must include the following:

- A review of the patient’s “medical and work history”
- A “physical examination with special emphasis on the respiratory system”
- A “chest x-ray interpreted and classified according to the International Labour Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader”
- A “pulmonary function test administered by a spirometry technician with a current certificate from a NIOSH-approved course”
- “Testing for latent tuberculosis”
- “Any other tests deemed appropriate” by the healthcare provider

Some physicians specialize in examining patients for ailments related to exposure to silica dust. OSHA does not require it, but you may find it more efficient to proactively seek out these practitioners in your community.

You must also make subsequent medical exams available “at least every three years” and more frequently if that’s recommended by the healthcare provider.

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**Coming next month:**

**September 8, 2016**

2016 “Safety, Health & Human Resource Fair”

Limited spaces still available

More information on pages 7 and 8

Sponsored by:
The Stark County Safety Council

11:00 a.m. – 1:00 p.m.

Food * Fun * Door Prizes

(Grand Prize- $250.00 Visa Gift Card)
Ohio’s Move Over Law requires motorists to cautiously shift over one lane — or slow down if changing lanes is not possible — when passing any vehicle with flashing lights on the side of a road. Its purpose is to protect everyone who works on our roads and everyone who travels on them.

**What is the Move Over Law?**
Ohio's Move Over Law is designed to protect the lives of everyone who works on or uses our roadways. The law requires all drivers to move over one lane passing by any vehicle with flashing or rotating lights parked on the roadside.

The original law took effect in 2004 to reduce risk to law-enforcement officers, emergency responders and tow operators. It was expanded in December 2013 to apply to every stationary vehicle with flashing lights, including road construction, maintenance and utility crews.

**What if I can't move over?**
The law recognizes that sometimes it is not safe or possible to move over because of traffic or weather conditions or because a second lane does not exist. In those situations, slow down and proceed with caution. Watch for people or objects that could enter your travel lane, and be prepared to stop.

**How does the Move Over law differ from yielding the right of way to emergency vehicles?**
Yielding the right of way to an emergency responder requires you as a driver to pull to the right-hand side of the road and stop when a law-enforcement officer, fire truck, ambulance or other emergency vehicle approaches using a siren, lights, or other warning devices. You must wait until the emergency responder(s) has passed by before you can resume driving.

**How serious is the problem?**
Across the nation, hundreds of people are killed or injured every year when they're struck by a vehicle after pulling over to the side of the road or highway. On average, these "struck-by" crashes kill one tow-truck driver every six days; 23 highway workers and one law-enforcement officer every month; and five firefighters every year. Tragically, stranded motorists are also struck and killed.
Can I be cited for failing to comply with the Move Over law?
Yes and the issue is so serious that fines are doubled. Violators are fined 2 x $150 for the first violation (a minor misdemeanor), 2 x $250 for the same violation within a year of the first, and 2 x $500 for more than two violations in a year.

What types of roadways does the law apply to?
Ohio’s Move Over law applies to all interstates and state highways. It can be enforced by any law-enforcement officer, including state highway patrol officers, local police, and county sheriff's deputies.
THURSDAY, SEPT. 8
11:30 A.M. - 1 P.M.
Meyer’s Lake Ballroom
3218 Parkway NW, Canton

300+ Attendees
Attendees from businesses, organizations and government entities shop for health and HR services, industrial supplies, training and safety equipment

EARLY BIRD SPECIAL - SAVE $50
DEADLINE: 8-5-16

PRODUCTS & SERVICES AT THE FAIR INCLUDE:
Safety Equipment & Services ♦ Ergonomic Products ♦ Health & Medical Services ♦ Wellness ♦ Industrial Hygiene Testing and Labs ♦ Managed Care Organizations ♦ Training ♦ Legal ♦ Occupational Safety & Health Consulting ♦ Staffing Agencies ♦ Third-Party Administrators ♦ Rehab and Wellness ♦ Health Insurance Reps

EARLY BIRD SPECIAL - SAVE $50
Cost: $100.00 per table, Includes: 1 round display table, linen tablecloth & 2 chairs (tables are not skirted); lunch for two; listing on the SCSC Website and in the October SCSC Newsletter.

◆ Doors open at 9:30 a.m. for vendors
◆ Set Up By 10:30 a.m. – No Exceptions
◆ Limited electricity available upon request

REGISTER EARLY!

DON'T MISS OUT - RESERVE YOUR TABLE NOW!

BUY TABLE ONLINE OR CALL 330-458-2070
WWW.STARKCOUNTYSAFETYCOUNCIL.ORG
SCSC SAFETY, HEALTH & HUMAN RESOURCE FAIR REGISTRATION FORM

Call (330) 458-2070, register online at www.starkcountysafetycouncil.org or complete the form and mail to the address below or fax it to (330) 456-0123

EARLY REGISTRATION DEADLINE IS AUGUST 5, 2016.

The Stark County Safety Council is administered locally by the Canton Regional Chamber of Commerce and the Ohio BWC Division of Safety and Hygiene.

Stark County Safety Council Safety, Health & Human Resource Fair

9/8/16 - Meyers Lake Ballroom, 3218 Parkway St NW, Canton OH 44708

Please reserve ______ tables at $100 per table (by August 5, 2016)  Amount enclosed: ______

Please reserve ______ tables at $150 per table (after August 5, 2016)

☐ Please check to request electricity. There is limited availability.

Payment Options:  ☐ Please bill my credit card  ☐ Check enclosed
(circle one)  MasterCard  VISA  AmEx  Discover  3 digit #: ______

CC#: ____________________________________ Expires:___________ Name as it appears on card_____________________________________________

Attendees:____________________________________________________________________________________________________________________

Reservation cancellations received less than 48 hours prior to the event will be billed accordingly.