

Improving Worksite Emergency Response Time with Emergency Fixture Signaling Systems



White Paper





EVERY SECOND COUNTS

The U.S. Department of Labor estimates that 2.2 million workers worldwide lose their lives each year due to workplace-related accidents, injuries, and diseases, and that another 4.1 million workers in the United States suffer serious work-related illnesses or injury.¹ The sooner first responders are called the faster the injured person will get medical support.



SUMMARY

In an emergency situation, time is of the essence. When an employee at a worksite is exposed to hazardous chemicals, length of response time for drenching the affected area and receiving proper post-medical care becomes a crucial factor in mitigating pain, discomfort and permanent bodily damage.

Using new signaling technology coupled with each emergency fixture installed at a worksite will immediately notify onsite workers and medical personnel, and expedite the emergency response and recovery process.

BACKGROUND

Emergency response in a worksite is a time-sensitive issue. For example, an eyewash or drench shower must be located within 10 seconds of the hazard, so the injured person can quickly and easily reach the plumbed fixture to immediately drench affected areas. Time is also a factor in the length of time one stays in the flushing fluid, which should be for a full 15 minutes, as required by the ANSI/ISEA Z358.1 standard. Reaction time of emergency response personnel to swiftly gain access to the injured party is also critical in halting further injury and getting the exposed user proper medical attention.

Another hindrance to response time is due to the fact that industrial work environments don't always allow for several people to be in the immediate area of a worksite hazard. One person could be working outside alone, or only a very few people could be working on third shift. This can affect co-workers' ability to be aware of an emergency, impeding their ability to help the injured.

Immediate emergency response is a time-sensitive issue. Seeing that time is absolutely crucial to halting and addressing such emergencies, how can facility managers ensure help is easily accessible in the most expedient way possible?

PROBLEM SOLUTION

In order to rapidly attend to worksite emergencies, it is absolutely essential to have the ability to immediately – and easily – send a highly recognizable signal of an emergency and notify others to help and/or send help. The solution is for facility safety managers to install a reliable emergency signaling system along with the eyewash or drench shower for immediate notification of the emergency.

Installing an emergency signaling system is a much faster and efficient way to alert not only those in the immediate area, but also managers or safety personnel in other locations that an employee is in need of help.

The average
Emergency
Medical Services
response time
in the United
States is 9.4
minutes.²



While all employees should be trained on what to do if a coworker has been exposed to hazardous chemicals, they should not be relied upon to completely abate the emergency. It's best to ensure proper medical response is provided in such a dynamic and emergent situation and an emergency signaling system is a clear method to communicate when and where medical assistance is needed.

PRODUCT SOLUTION

Recently, Bradley Corporation, manufacturer of industrial safety products, completely redesigned the emergency signaling devices used in these situations. The new system is designed to be flexible for usage in all types of emergency fixture locations. These devices can be easily recessed into a wall, mounted directly to the surface of a wall or mounted onto the safety fixture itself. They can be built for general area, Class 1 Division 1, or Class 1 Division 2 hazardous locations, and can be placed indoor or outdoor with waterproof and corrosion-resistant NEMA 4X rated products.

Bradley has incorporated more features, options and benefits to ensure the appropriate signaling system is provided for each specific facility's needs. At the heart of each signaling device is a central control to allow for simple connection of all input devices and output devices. The central control also allows for a simple hook up to a building's remote monitoring system. This ensures the right people are notified when someone is using each safety fixture.

All signaling systems need a method to trigger the visual flashing light and audible sound. This is done through either a brass or stainless steel flow switch that will trigger at flow rates as low as 2.4 gpm. The flow switch can be located anywhere on a horizontal supply pipe feeding the safety fixture. With several different cord lengths, they can be located as far as 50 feet away from the eyewash or drench shower.

When the system is activated, an amber signal light will begin to flash and a loud 108-decibel sound designed to cut through ambient noise will begin to broadcast in the area. On occasion this sound might seem close

or similar to another warning or alarm sound in the building. To prevent misunderstanding or confusion of the event, Bradley offers two other alarm sound options.

The alarm's sound and signal light will continue to activate for as long as someone is using the drench shower or eyewash, but once emergency responders have arrived, the loud sound may no longer be necessary. To silence the audible portion of the signaling system, a reset switch can be provided. This switch will silence the sound but allow the light to continue to flash. The absence of the alarm sound may help remove anxiety or stress that may occur during the event. The switch also allows the system to be silenced during weekly testing of the emergency fixtures. The mechanism includes an auto reset feature ensuring the entire system will be ready for use after the testing is completed.

The flashing signal light is critical to show people where the injured person is located, but other lights can be beneficial as well. A green beacon light placed in a clearly visible overhead location can help point the way to the safety fixture location and ensure that all personnel can quickly reach the eyewash or drench shower in 10 seconds or less. The ANSI/ISEA standard also requires the surrounding area to be well lit. To accommodate this, a bright area light can be included to illuminate the space directly around the safety fixture. Both of these lights will be steady state, or constantly on, until the fixture is used. Once the shower or eyewash is activated, the beacon light will turn off giving way to the flashing amber light, while the area light will remain on.

There are a few final things to consider when looking over the various options and product choices available. Each signaling system is powered by a convenient and easy-to-use universal power supply that can accept anything between 90-264 volts and convert it down to a safe 24 volts for each component. This allows for simple electrical hook up in any city, state or country. All systems are completely pre-assembled, tested and certified to meet all UL requirements, providing users peace of mind that all systems are operating optimally.

SIGNALING SYSTEMS:

- Signal when someone needs help
- Draw attention to the immediate area of need
- Allow management to contact first responders
- Provide for remote monitoring of safety equipment
- Deter false activations



World Health Organization (WHO) estimated 20-50% of workers are exposed to hazards at work in industrialized countries and this rate may be higher in the developing and newly industrialized counties. Estimates based on International Labour Organization (ILO) and the World Bank Group data in 2013, show 2.34 million occupational fatalities occur per year in a global workforce of 3.3 billion, with an incidence rate of 71 per 100,000 workers per year.³

CONCLUSION

In work site emergencies, time and immediacy are critical factors in saving employees' lives and ensuring their well being. Therefore, it is imperative that employees have quick and easy access to the proper eyewash and drench showers to instantaneously irrigate their eyes and/or skin for 15 minutes. But when it comes to proper medical protocol, that is only the first step. Effective emergency response also requires the injured party receives proper medical help in a timely manner. Providing a reliable and customizable emergency signaling system for all necessary responders of a tragic event notifies the injured and co-workers that help is on the way. The signaling system also helps to complete the safety loop and improve the outcome of the emergency.

Sources

- 1 US Dept. of Labor
- 2 http://www.nedarc.org/emsDataSystems/nemsisReports/2010_11EMSTimes.html
- 3 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4795358/>





ABOUT THE AUTHOR

Ryan Pfund is Senior Product Manager, Emergency Fixtures, for Bradley Corporation of Menomonee Falls, Wis., a USGBC & ISEA member and manufacturer of locker room products, plumbing fixtures, washroom accessories, partitions, emergency fixtures and tankless water heaters.

ABOUT BRADLEY CORPORATION

For 95 years, Bradley Corporation has designed and manufactured commercial washfountains, and today is the industry's comprehensive source for plumbing fixtures, washroom accessories, restroom partitions, emergency fixtures and solid plastic lockers. Headquartered in Wisconsin, Bradley serves the commercial, industrial, health care, recreation, education, and corrections markets worldwide.

262 251 6000
800 BRADLEY bradleycorp.com
W142 N9101 Fountain Boulevard
Menomonee Falls, WI 53051 USA
4220-0716

