ROCKWOOD

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Dear valued partner,

In this month's safety newsletter, we will be discussing arc flash and electrical burns. An arc flash, also known as flashover, is a sudden electrical explosion or discharge that happens when electric current travels through the air from one conductor to another.

Which of the following is not a factor when determining the severity of an arc flash injury?

A. Brightness of the flash
B. Proximity of the worker to the event
C. Size of the explosion
D. Time exposed to the hazard

Answer at the end of the email.

(Missed a previous email? Click here to see an archive of previous months' safety emails on Rockwood's Loss Control website).

What causes arc flash?

An arc flash can be caused by an electrical fault in a power distribution system. Faulty wiring, loose connections, failure in the electrical system of a building or structure, or even faulty equipment can also cause an arc flash. It may occur in small spaces, such as a crawl space under a house. It can also occur in large spaces, such as a basement, or in a machine room. Some examples given by the Workplace Safety Awareness Council are: Dust, dropping tools, accidental touching of two conductors, condensation, material failure, corrosion and faulty installation.

Typical injuries and results from an arc flash include:

- Internal and external electrical burns

- Intoxication from the inhalation of hot gasses or of vaporized metal
- Eye damage and blindness caused by the ultraviolet light of the arc flash
- Fire that could spread rapidly through a building
- Flying molten metal
- Extremely high pressure
- Ear damage caused by a sound blast
- Heat (upwards of 35,000°F or 20,000°C) – which is up to four times the heat of the sun

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Safety tips for preventing arc flash and electrical burns

Follow these tips to help avoid incident or injury:

 Training	• The National Fire Protection Association (NFPA) details how to comply with OSHA regulations through the NFPA 70E standard. • NFPA offers online training for electrical safety.
 Warning Labels	• In compliance with NFPA 70E, energized equipment should be installed with warning labels, such as arc flash stickers. • These warning labels inform workers about the potential of explosion or high voltages.
 Limits of Approach	• Arc Flash Protection Boundary (outer boundary) – farthest boundary from energized equipment. If an arc flash occurred, this is the boundary where a worker could receive a first-degree burn. • Limited Approach – distance where barriers should be placed to protect

	personnel. • Restricted Approach – distance where there is an increased risk of shock. Only qualified personnel are allowed with the appropriate PPE. • Prohibited Approach (inner boundary) – distance from an exposed component that is the same distance between the exposed component and the live part. • It is important to note that the limits of approach vary among equipment.


PPE
	• PPE is classified into four categories, each category containing the minimum Arc Rating value for the PPE that is required.
	  ◦ Cat 1: Minimum Arc Rating (AR) of 4 cal/cm2
	  ◦ Cat 2: Minimum AR of 8 cal/cm2
	  ◦ Cat 3: Minimum AR of 25 cal/cm2
	  ◦ Cat 4: Minimum AR of 40 cal/cm2
	• NFPA 70E TABLE 130.7(C)(15)(c): PPE categories – please see specific PPE requirements for each category here.

Rockwood resources:

- High Voltage – Toolbox Talk
- Power Cables Splicing and Repairing – Toolbox Talk
- Electrical Safety - Shocking Experience – Poster
- You can find additional Rockwood Toolbox Talks here

MSHA, OSHA and other resources:

- Arc Flash Resources – OSHA
- NFPA 70E Team Training | Electrical Safety in the Workplace – NFPA

- CDC - Mining - Arc Flash Awareness – NIOSH

Learn more about arc flash and electrical burns on Streamery

Every Rockwood policy includes access to Streamery, a vast safety library with videos, quizzes and more resources to help you promote safety in your workplace. If you don't have access, contact us to get a username. Enter the SKU number below to find the recommended video.

Watch Streamery videos on arc flash and electrical burns:

- **Arc flash safety:** 16 min / SKU: 3252 + 3252-S / English & Spanish
- **Safe electrical work practices and the 2024 NFPA 70E for electrical workers:** 28 min / SKU: 5474 / English
- **Electrical safety for qualified workers - concise:** 13 min / SKU: 3178 + 3178 / English & Spanish
- **Many more on Streamery**

Bonus materials:

1: OSHA recordkeeping – posted February 1 – April 30

Each February through April, many employers with more than 10 employees must post a summary of the injuries and illnesses recorded the previous year. Records must be maintained at the worksite for at least five years. If you need more information to know if you fall under this requirement or what kind of information is required of you, please visit this link: Recordkeeping - Overview | Occupational Safety and Health Administration or reach out to the Rockwood Loss Control team at the email listed below.

2: Paths Training – February – PA Department of Labor & Industry

Paths will offer over 50 training sessions in February to

educate on burn awareness and safety. Just to highlight a few:

- Kitchen Safety - Burn and Fire Prevention
- Bloodborne Pathogens
- Managing Emergencies
- Job Safety Analysis

3: Seatbelt covers

Don't forget that Rockwood Casualty is providing FREE high visibility seatbelt covers to our insureds to assist in enforcement of seatbelt use by employees. Please contact safetysolutions@rockwoodcasualty.com to make a request for your company and specify orange or yellow.


Questions? Feel free to reach out

As always, your Rockwood partners are available to answer your questions and help you promote safety in the workplace. Contact Rockwood Loss Control for any support you need.

Thank you for your continued partnership,

Rockwood Loss Control Team
Safetysolutions@rockwoodcasualty.com

#RockwoodSafetySolutions #LossControl #SafetyTips

ANSWER: Which of the following is not a factor when determining the severity of an arc flash injury?

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