SAFETY

Presenter

Matt Mountain, ASCS

Matt Mountain is a 2nd generation duct/HVAC cleaning technician and business owner. Matt cleaned his first duct system at the age of 14. He has been an ASCS since 2010.

Mountain Duct Cleaning provides Residential, Commercial, and Industrial duct and HVAC cleaning services in the Minneapolis/St. Paul MN metro area.

Disclaimer

This presentation is not intended to be a comprehensive program covering all aspects of this topic. All technicians are encouraged to read and follow all applicable standards, codes and regulations related to this topic.

- ✔ It is the responsibility of each individual contractor to follow local building codes and licensing requirements and to work safely in accordance with OSHA guidelines.
- ✔ It is the contractor's responsibility to take proper precautions on each project to prevent cross contamination. Always take the health and safety of the building occupants into consideration before you conduct any cleaning procedures.
- ✔ All of the following tips are only general tips. They do not cover every situation and it is your responsibility to adapt these tips to the individual system you are working on.
- ✔ The Instructor is not responsible in any way for the work you perform after viewing this slide show. You are responsible for your own work.
- ✔ The views and opinions following are the instructors' opinions and not necessarily the official position of the National Air Duct Cleaners Association.

What We'll Learn

- Having a Safety Plan
- Personal Protective Equipment (PPE)
- Engineering Controls/Containment
- Lock-Out Tag-Out
- Fall Protection
- Hazardous Materials
- Confined Space Entry

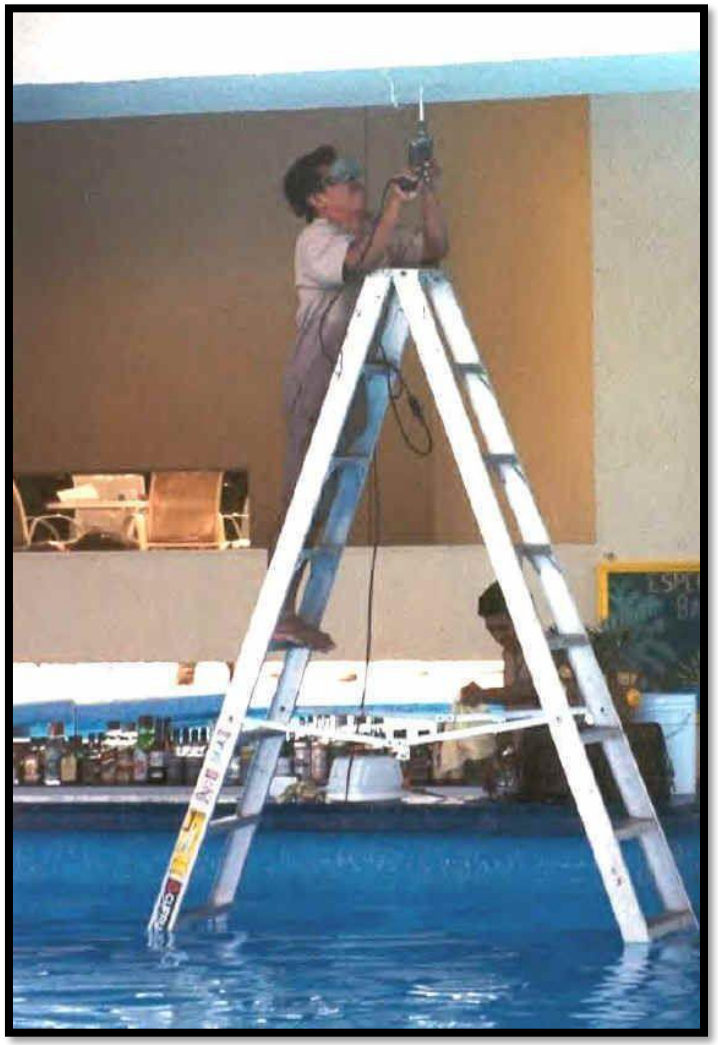
Safety

Safety is a multi-step process.

Is this guy being safe?

Safety

And it requires a wholistic approach!



How about now?

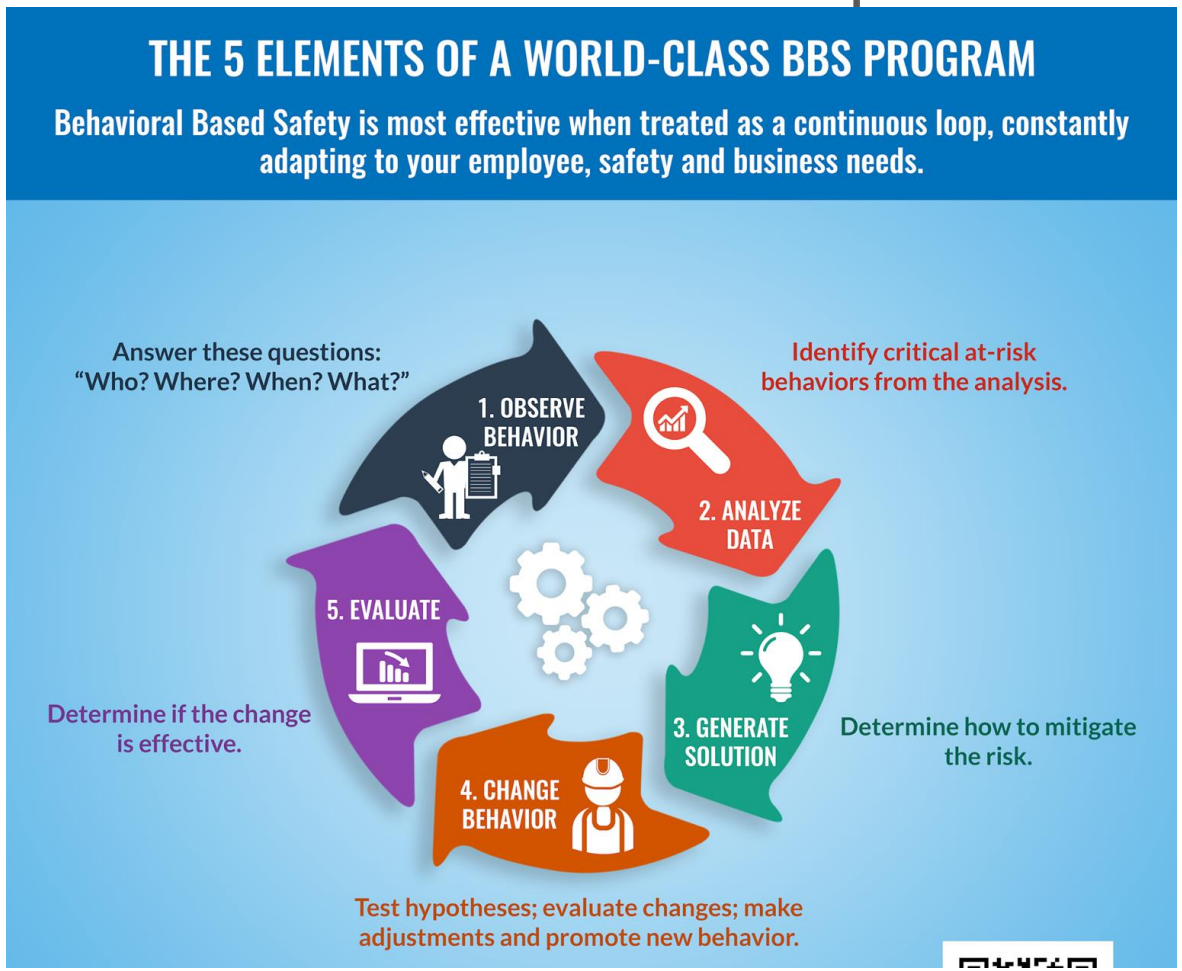
Safety – Having a Safety Plan

You need to have a plan.

Just like cleaning procedures, safety is **learned** behavior.
Which means it must be **taught**!

Safety – Having a Safety Plan

You need to have a plan.



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Safety – Having a Safety Plan

You need to have a plan.

NADCA Safety Manual

This fully customizable manual allows you to insert your company logo and contact information to create a safety manual for any job. The manual includes chapters on confined space entry, hazard communication, ladder safety, fall protection, emergency procedures, accident investigation, fire protection and much more.

INSERT YOUR LOGO HERE	COMPANY Safety Management System		Doc No:	ABRASIVE
			Initial Issue Date	Insert Date
			Revision Date:	Initial Version
STATEMENT OF POLICY			Revision No:	0
			Next Review Date:	Insert Date
Preparation: Safety Mgr	Authority: President	Issuing Dept: Safety	Page:	Page 1 of 1

Safety – Having a Safety Plan

You need to have a plan.

- Develop a Company Safety Manual
- Require that its studied. Keep it on all trucks.
- Train on the manual in-shop and on-site.
- Point out and fix infractions immediately.
- Keep each other accountable.
- Penalize if necessary to drive the point home.

Safety – Having a Safety Plan

You need to have a plan.

Safety Meetings

- Start of every work shift, especially at the start of a new project.
  - Risks may change day-to-day. Staff may change.
- Assess and highlight job or site-specific risks.
  - Working with a lift? On a roof? In a big hole in the ground?
  - Other trades working on site?
  - Asbestos insulation in the attic you're working in?
  - Clients in the work area or not?
  - Excessive heat or cold?
  - Etc. etc. etc.
- Review general safety procedures.
  - Pick one topic to cover each day.

Even solo techs on a residential job need to do this!

- Are the front steps icy?
- How hot is it in that attic?
- Angry Chihuahua?

Safety – Having a Safety Plan

You need to have a plan.

You (or your boss) can't afford not to!

OSHA Fine: $1036 up to $15,625 for serious violation.

- Same amount PER DAY for not fixing the issue by abatement date.

The OSHA fine might not be the worst of it:

- Job has to stop, loss of that day's revenue.
- Technician out for the next day.
- Technician out for a week.
- Technician out for 3 months.
- Technician dies. Lawsuits. End of company.

Safety – Worker Readiness

Worker Readiness

- **Fatigue Management**
  - To ensure our employees recognize to effect of fatigue as related to safely being able to perform work and to establish guidelines for work hours and equipment to reduce fatigue in our business and at our client locations.

Warning Signs

- head nodding
- drowsiness
- inability to keep eyes open
- constant yawning
- poor concentration
- slow reaction time
- increased irritability

Safety – Worker Readiness

Worker Readiness

- **Fit for Duty**
  - Employees are expected to report for work fit for duty, which means able to perform their job duties in a safe, appropriate and an effective manner free from the adverse effects of physical, mental, emotional and personal problems.

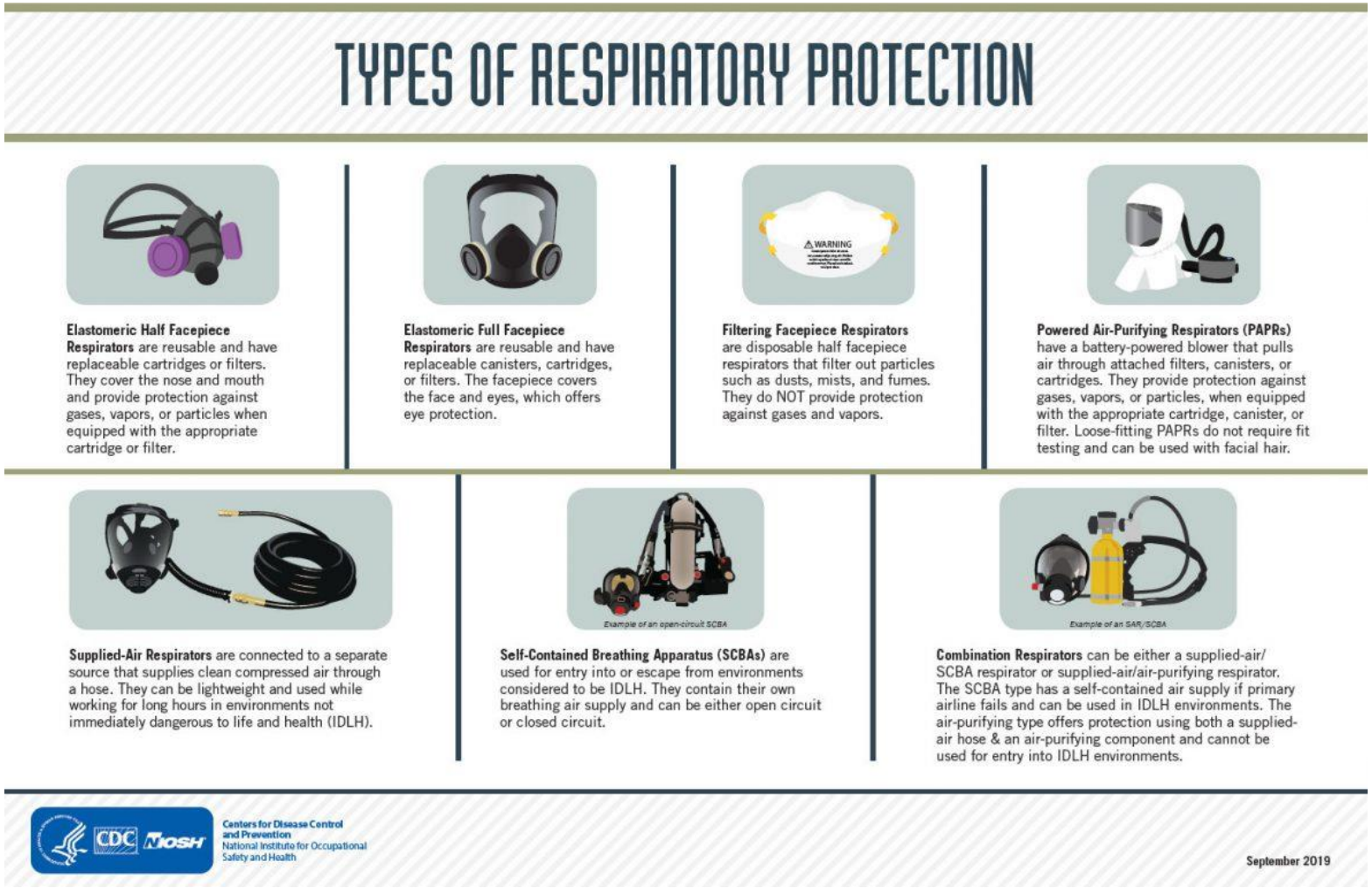
Safety – PPE

Personal Protective Equipment (PPE)

- Hearing Protection
- Eye Protection
- Head Protection
- Hand Protection
- Feet Protection
- Hi-Vis
- Face Protection
- Respiratory Protection

Safety – PPE

Personal Protective Equipment (PPE)



Safety – Engineering Controls

Engineering Controls (Containment)

Meant to protect the workers, the occupants, and the property.

ACR, The NADCA Standard – 2021 Edition

3.13 Summary of Engineering Controls:

Appropriate engineering controls are mandatory on every HVAC cleaning and restoration project. Protecting workers and building occupants and preventing cross-contamination ***shall*** be considered a priority on every project. It is *recommended* that the above listed engineering controls are considered minimum requirements. When a contractor has any questions about project-specific engineering controls, it is *recommended* that an Indoor Environmental Professional (IEP) be consulted.

Safety – Engineering Controls

Engineering Controls (Containment)

ACR, The NADCA Standard – 2021 Edition

3.9 Level 1 Containment:

Level 1 is the minimum level of containment that ***shall*** be used on all HVAC system component cleaning projects.

Level 1 Containment

- **Negative Pressure**
- **Protective Coverings**
- **Clean Equipment**
- **Cross-Contamination Control**

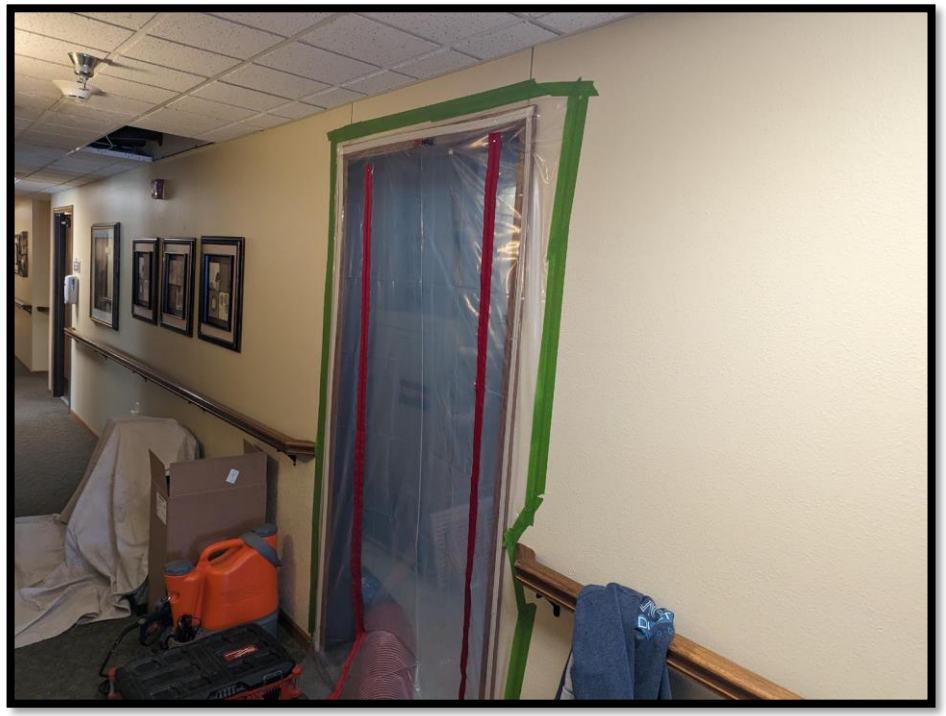
Safety – Engineering Controls

Engineering Controls (Containment)

ACR, The NADCA Standard – 2021 Edition

3.10 Level 2 Containment:

- **all requirements from Level 1**
- **temporary barriers**
- **containment area floor**
- **containment area under negative pressure (not just the duct)**
- **ambient air cleaning**



Safety – Engineering Controls

Engineering Controls (Containment)

ACR, The NADCA Standard – 2021 Edition

3.11 Level 3 Containment:

Level 3 is a containment with a single chamber decontamination unit.

3.12 Level 4 Containment:

A Level 4 containment is a containment with a two-chamber decontamination unit.

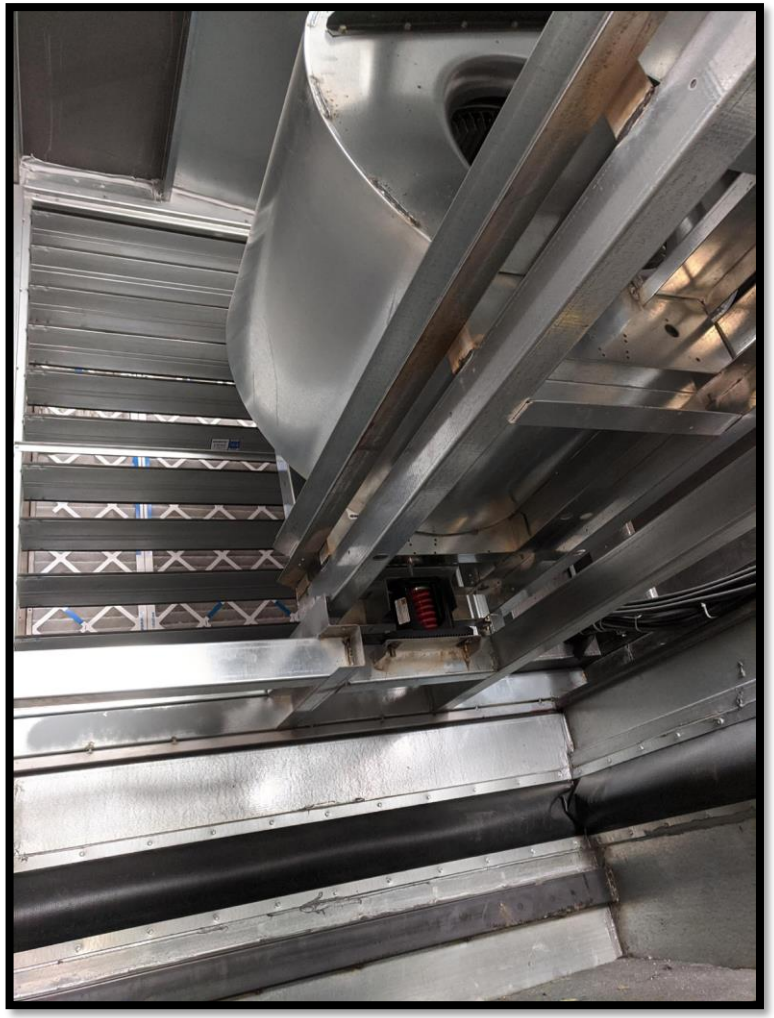
Safety – Lock-Out Tag-Out

Lock-Out Tag-Out

- **Lockout Tagout**
  - The purpose of this program is to establish procedures for affixing appropriate lockout/tagout equipment to energy isolating devices and to otherwise disable machines or equipment to prevent unexpected energization, start up or release of stored energy to prevent injury or incident.

Safety – Lock-Out Tag-Out

Lock-Out Tag-Out



Safety – Lock-Out Tag-Out

Lock-Out Tag-Out

Safety – Pop Quiz

What is the most common OSHA citation/fine?

Fall Protection

Safety – Fall Protection

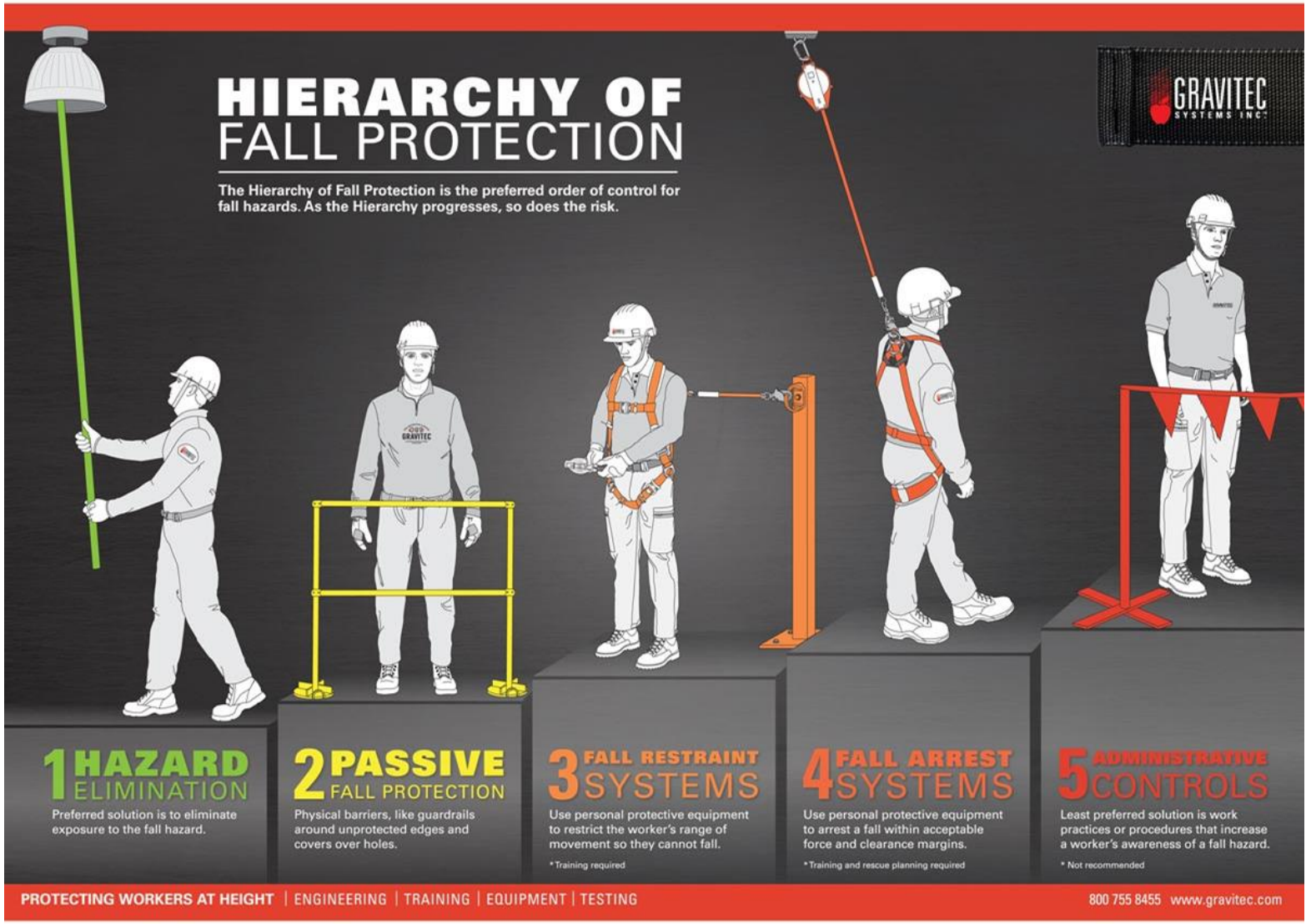
Fall Protection

Safety – Fall Protection

- Fall Protection
- Ladders
- Scaffolding
- Rooftops
- Aerial Work Platforms (lifts)
- Duct Risers
- Unprotected Edges (no railing)

Safety – Fall Protection

Fall Protection



Safety – Fall Protection

Fall Protection

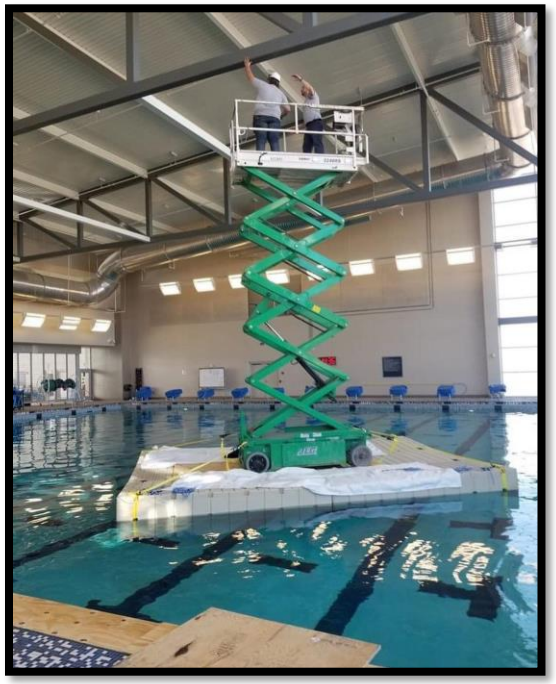
Ladders

- Shall be inspected for visible defects by a competent person on a periodic basis and after any occurrence that could affect their safe use.
  - Recommend same for scaffolding including portable scaffolding.
- Shall be used only for their intended purpose.

Making a ladder safer:

Safety – Fall Protection

Fall Protection



Aerial Work Platforms (Lifts)

- May include Scissor Lifts, Boom Lifts, Man Lifts, Articulating Bucket Truck, etc.
- PPE required
  - Fall Arrest Harness
  - Hardhat
  - Hi-Vis Clothing
- Always have a spotter.
- Get proper training!
  - Local OSHA office, large rental firms or third-party safety companies may offer.

Safety – Hazardous Materials

- Hazardous Materials
- Microbial (Mold)
- Asbestos
- Lead
- Chemicals
- Environmental

Safety – Hazardous Materials

Hazardous Materials

Identify potential hazards to protect you the worker, the company, and the customer.

Know when NOT to start or continue a job.

Safety – Hazardous Materials

Hazardous Materials

Hazard Communication

- Employees and Customers have right to know.
- Provide information (SDS) prior to starting the job.
- SDS Sheets should be on all trucks and a master list at the office.
  - Cleaning Agents
  - Fogging Chemicals
  - Surface Repair Coatings

NADCA White Paper:
Chemical Product Applications in HVAC Systems

Safety – Confined Space Entry

Confined Space Entry

What is a Confined Space?

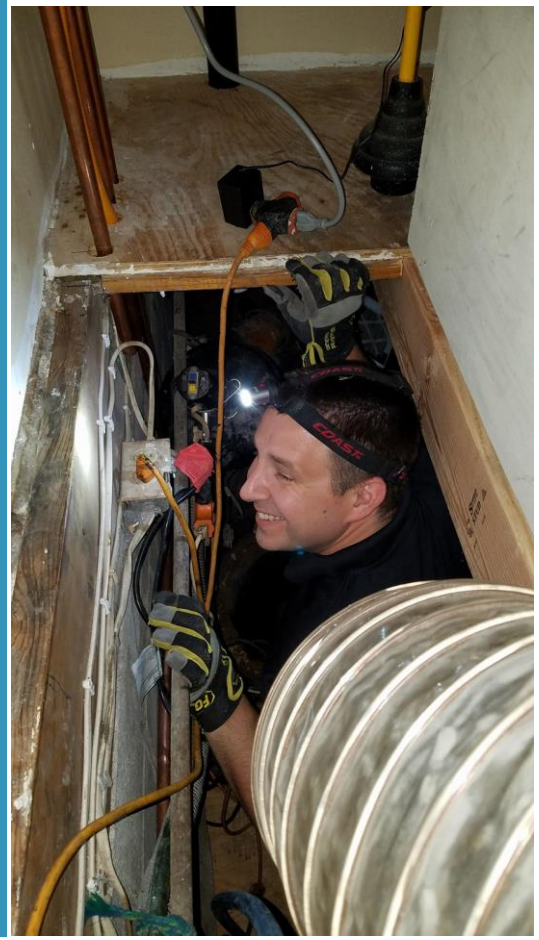
A Confined Space is/has:

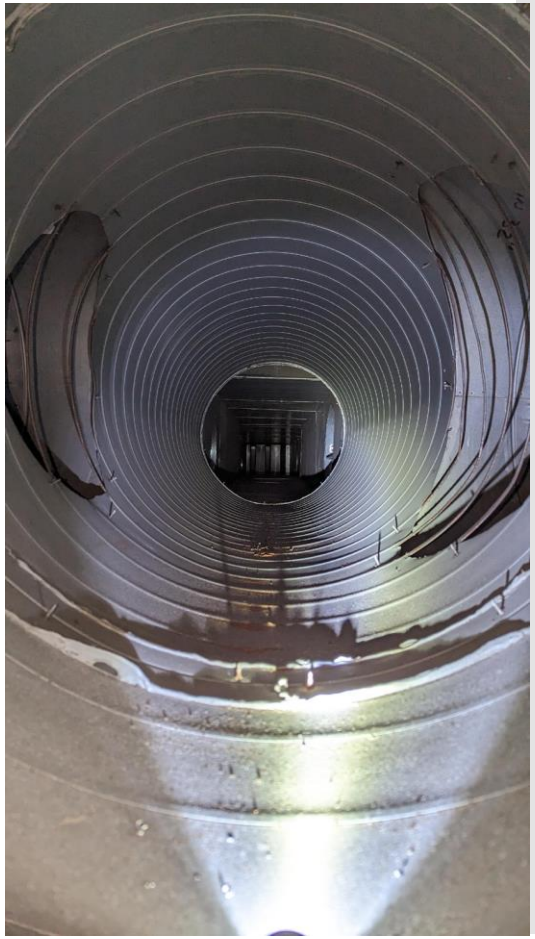
- Limited means of entry and/or exit
  - Need to use a ladder or movable stairs
  - Door that is difficult to open or too small
  - Obstructions worker must crawl over/around
  - Need to travel a long distance
- Is large enough for a worker to enter
  - You can fit in the hole
- Is NOT intended for regular or continuous occupancy
  - Not designed with features you'd normally need such as ventilation, lighting, and sufficient space to move around or work

Safety – Confined Space Entry

Confined Space Entry

EXAMPLES





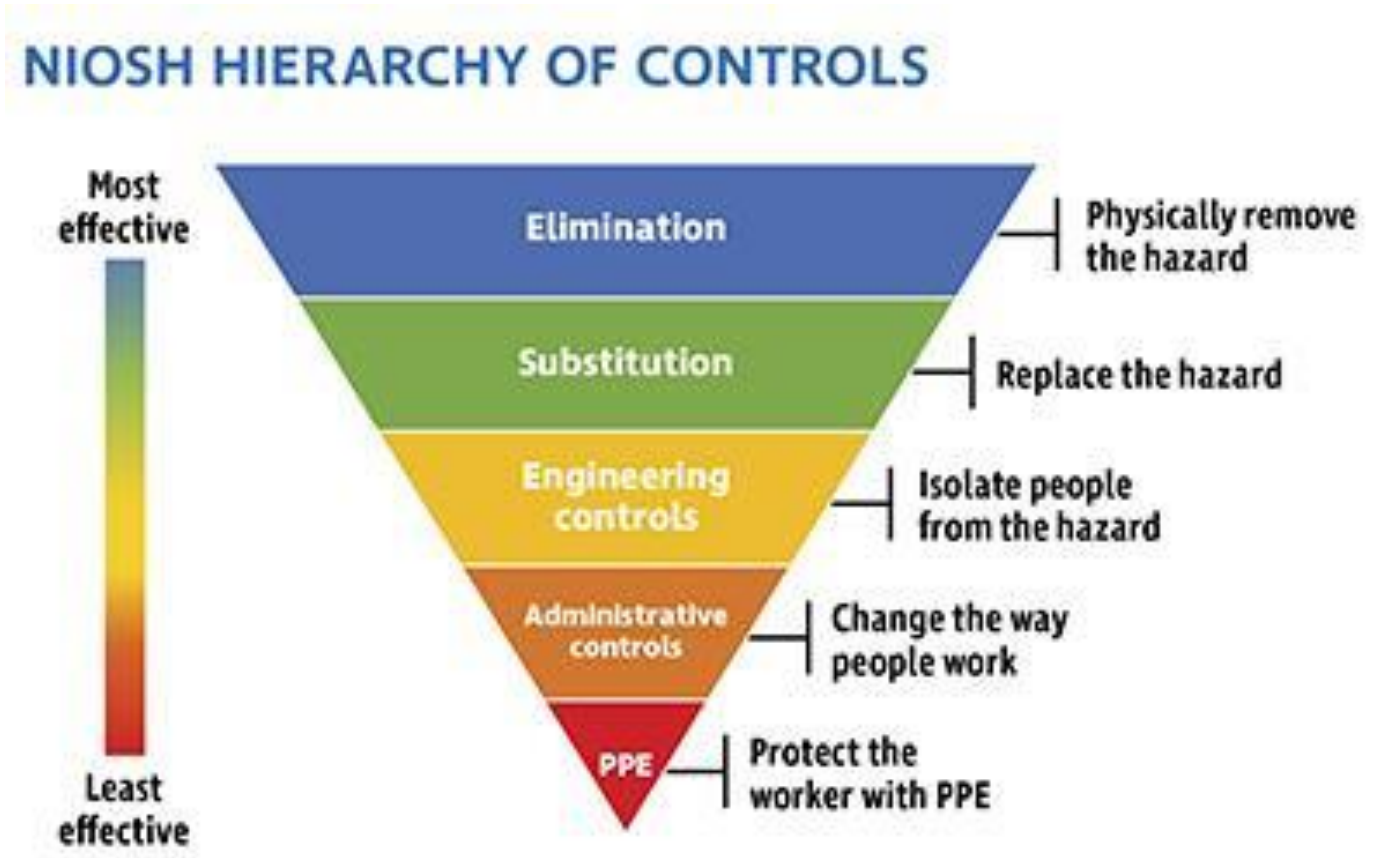
Safety – Confined Space Entry

Confined Space Entry

EXAMPLES

Safety – Confined Space Entry

Confined Space Entry



Safety

Residential HVAC 101

Presenter Contact Information

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Thank you for Participating!