Fit Clinic: Strategies for Assessing Personal Protective Equipment in Construction

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3M Science. Applied to Life.™

Opening Points

- This presentation is based on current United States federal requirements
  - US state or other country requirements may be different
  - Always consult User Instructions and follow local laws and regulations
- This presentation contains an overview of general information and should not be relied upon to make specific decisions
- Completing this program does not certify proficiency in safety and health
- Information is current as of the date listed for this presentation, and requirements can change in the future
- This presentation should not be relied upon in isolation, as the content is often accompanied by additional and/or clarifying information or discussion
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Steve Kosch, MS

- Global Segment Application Engineering Team responsible for Utilities, Up-Stream Oil & Gas, Mining, Fire & EMS
- Global Confined Space & Rescue Specialist
- Firefighter and Emergency Medical Technician, 30+ years of emergency response experience.
- Principal member for NFPA 350 – Guide for Safe Confined Space Entry and Work and ANSI Z117.1 – Confined Spaces.
- 3M for 27 years
- MS in Risk Control/Safety from the University of Wisconsin-Stout.

Jeffrey Taylor

- Core Safety Specialist responsible for Southern Colorado, New Mexico, and Arizona.
- He has assisted numerous companies with respiratory regulatory compliance, product selection, fit testing and the establishment of respiratory protection programs.
- 3M™ Personal Safety Division for 25 years
- Bachelor's degree from North Carolina State University

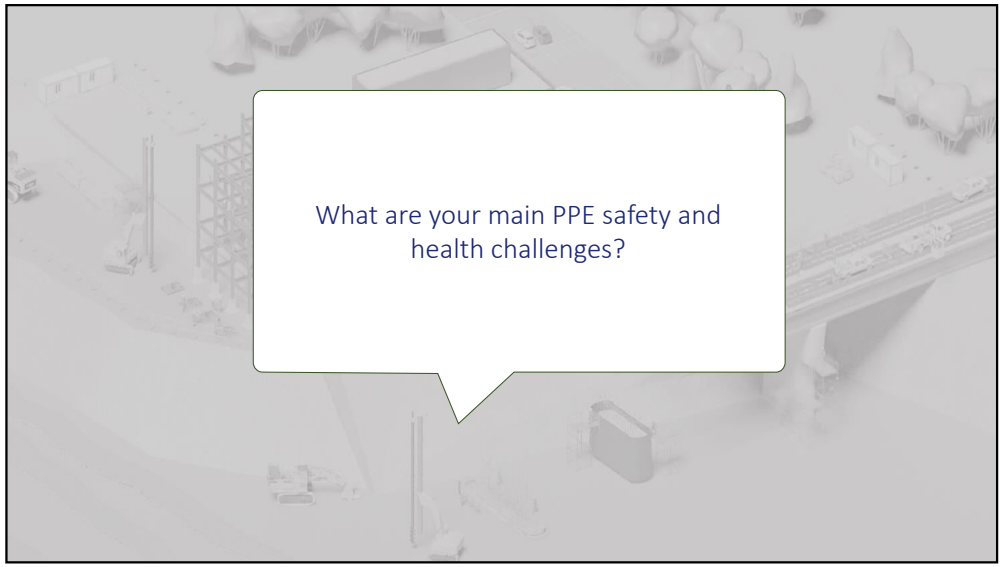
Construction Proposed PPE Fit Revisions

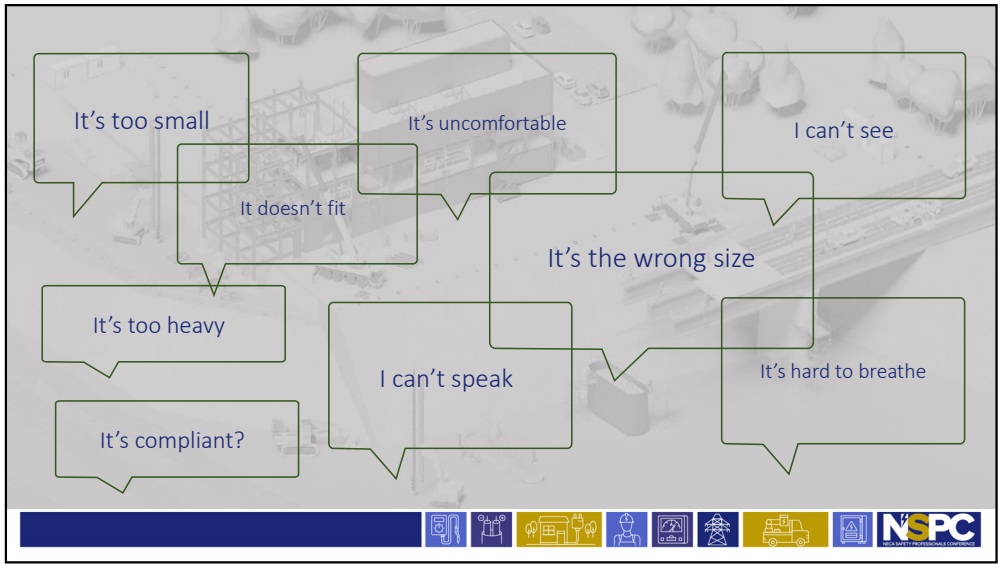
OSHA Notice of Proposed Rule Making

- Revision of Construction PPE Standard to include explicit fit requirements

Current Text	Proposed, New Text:
1926.95(c)	§ 1926.95(c)
Design. All personal protective equipment shall be of safe design and construction for the work to be performed.	(c) Design and selection. **Employers must ensure** that all personal protective equipment: (1) Is of safe design and construction for the work to be performed; and **(2) Is selected to ensure that it properly fits each affected employee.**

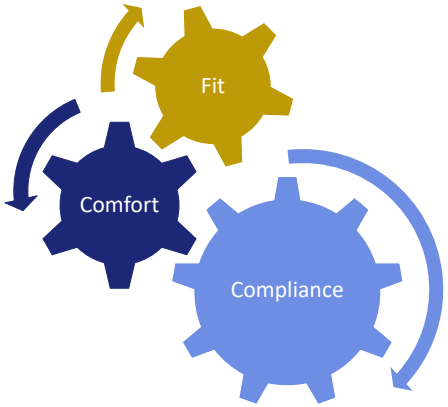
Source: https://www.federalregister.gov/public-inspection/2023-15285/personal-protective-equipment-in-construction





The Need: Choosing the Right PPE for ALL workers

Consider:



Developing an Equitable PPE Program

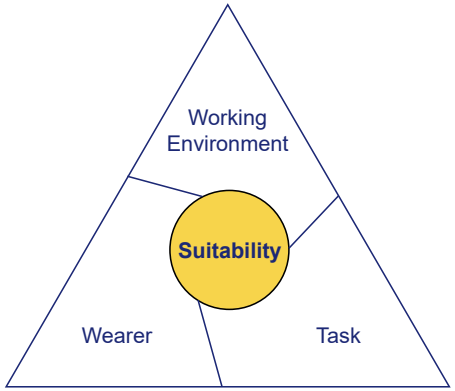
5 Questions to Consider:

How does your organization?

- Identify the need for equitable and inclusive PPE selection options
- Ensure PPE options are available for the full range of employees
- Ensure the proper fit of all PPE types
- Gather feedback from employees on PPE offerings
- Engage your PPE suppliers

Source: Synergist Article March 2023 "Common PPE Challenges for Women" by Diana Peroni and Katie Stryker

Selecting suitable PPE for ALL workers



Source: Women's Personal Protective Equipment: One Size Does Not Fit All. https://www.tuc.org.uk/sites/default/files/2016-01299-Leaflet-booklet-Women%27s-PPE--One-Size-Does-Not-Fit-All-Version-26-09-2016%20%282%29.pdf.

PPE Compatibility: What does it mean?

- **Obtain intended protection from all PPE worn together**
- Incompatible PPE may pose additional risk
- Comfort

- **How to achieve compatibility?**
- Consider how PPE fits the individual
- Offer a mix of sizes or models

Source: Is your Personal Protective Equipment working together? | Safety Network (3m.com)

How does your company ensure the proper fit of PPE?

Key Considerations to help make PPE selection more equitable

- Ensure PPE choices are compliant and appropriate for task
- Work with suppliers to offer a full range of sizes
- Consider PPE designed for adjustability
- Use fit testing to ensure a proper initial fit and to help confirm selections
- Ensure proper adjustments in donning
- Allow workers to trial PPE
- Assess comfort
- Provide training

Always ensure workers have been trained in the care, use, maintenance and inspection of their PPE.

Break Outs

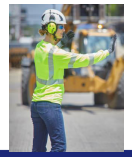
- Hearing Protection Fit
- Protective Eye Wear Fit Assessment
- Respiratory Protection Fit
- Fall Protection

Science of Fit: Eye Protection

Step 1: Eyewear Selection

Provide options appropriate for task

Assess optimum fit

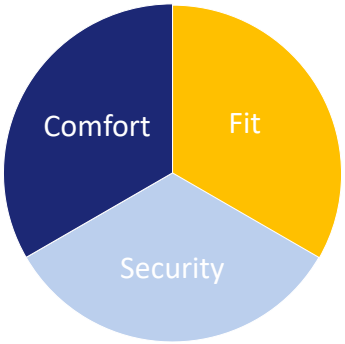


Have worker try on eyewear options

Assess comfort

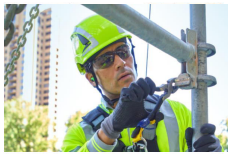
The Science of Fit: Eyewear

- Why is fit so important when it comes to safety glasses?
- Why comfort and fit are related
- The science of comfort



Elements of Protective eyewear fit

View



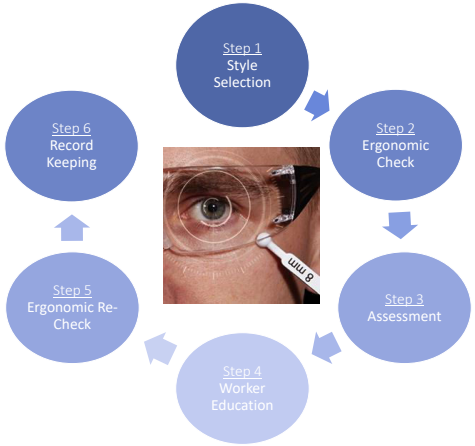
Security

Coverage

Gaps

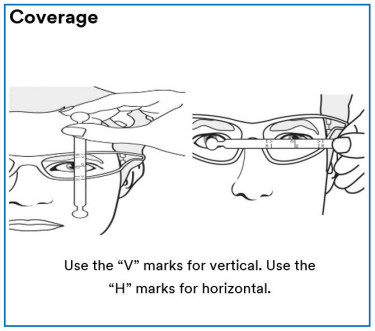
Eyewear Fit

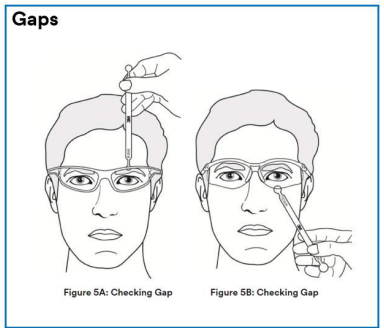
A simple 6 step system can help confirm appropriate fit of protective eyewear.



The Manufacture and Selection of Eye Protection at Work | Blogs | CDC

Eyewear Fit System

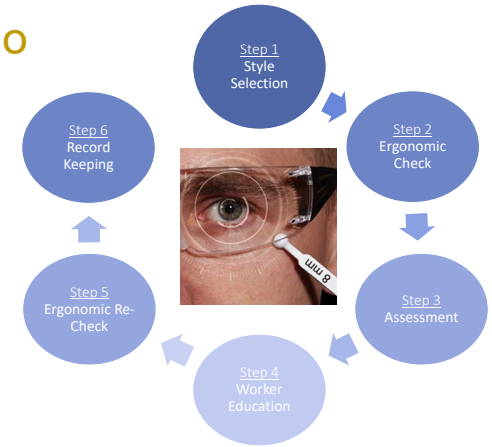




3m-eyewear-protection-and-safety-glasses-fit-kit-system.pdf

Eyewear Fit Demo

A simple 6 step system can help confirm appropriate fit of protective eyewear.



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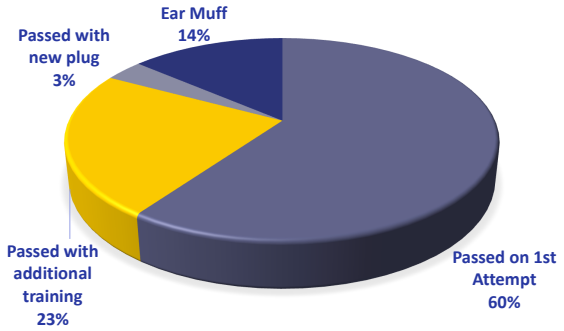
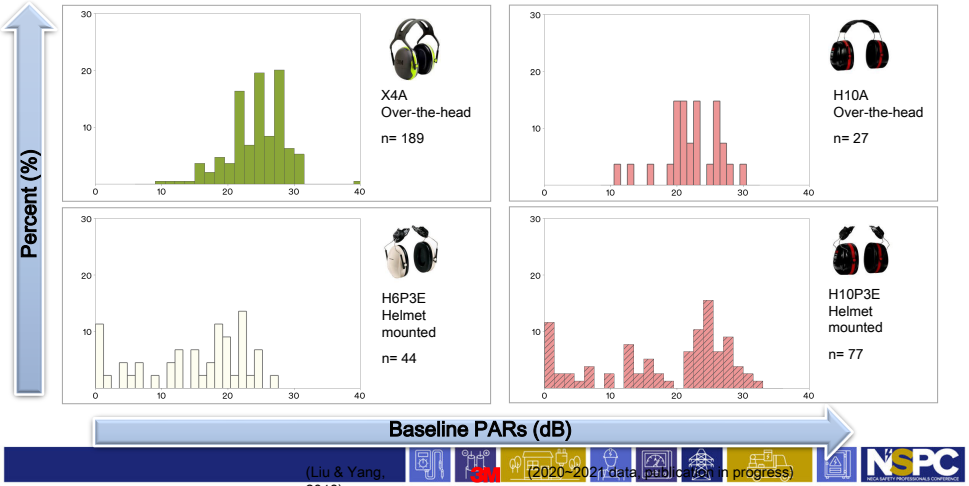
Science of Fit: Hearing Protection

Case Study: Construction Company Summary of Results



Source reference: Study by Vicky Gaglia, Occupational Health Nurse, Duradiamond. Dated October – November 2019.

Distribution of baseline PARs obtained by earmuff users



(Liu & Yang, 2018) (2020–2021 data publication in progress)

Personal Attenuation Rating, PAR

Demonstration:

Why not measure attenuation on the worker?

Key Benefits of Fit Testing

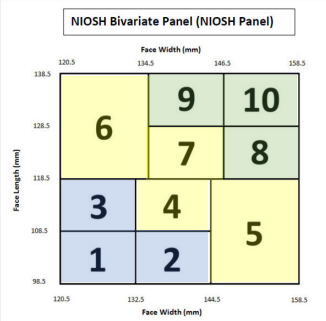
1. Identify At-Risk Population
2. Train & Motivate
3. Selection Tool
4. Verify Performance
5. Train-the-Trainer
6. Provides Documentation

Science of Fit: Respirators

Respirator Design

The 2019 NIOSH bivariate panel to assess respirator fit considers a wider variety of facial sizes than the previous panel.

Notes
- Based on US workforce
- Some manufacturers test new designs using the updated panel



NIOSH Panel - cell number	Population distribution (%)	Number of test subjects based on the population distribution
1	5.5	1
2	5.3	1
3	10.5	2
4	25.0	4
5	7.1	1
6	5.7	1
7	21.3	4
8	8.7	2
9	5.2	1
10	3.5	1
Total number of subjects		18

ble 1: NIOSH Panel cell designations, population distribution, and number of test subjects per cell, based on an 18-mber panel

NIOSH Conformity Assessment Interpretation Notice (CA 2019-1011) | NPPTL | NIOSH | CDC

Initial respirator fit considerations

Always read the user instructions and follow manufacturers instructions. Respirators must be worn the entire time wearers are exposed.

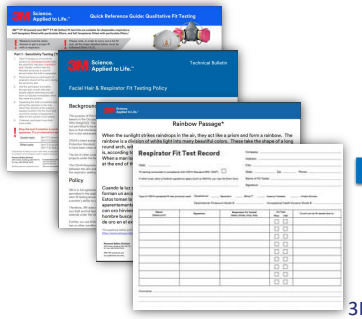
- Compatibility
- Comfort
- Size/ Style
- Verification
- Seal

Improving Testing Confidence & Convenience!

"I need help to make certain that my folks are testing the right way each time."

"We only fit test every so often, so I need a system that can make it easy to fit test without retraining the testers."

3M Wear it Right App (Works with many respirator manufacturers)



- Digitize the fit test process
- Model-specific guided fit tests
- Global fit test protocol and language support
- Print and email fit test certificates
- In-app record keeping

3M WiR Page

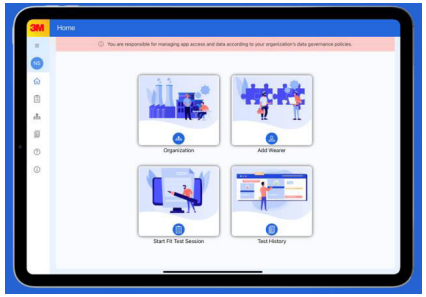
Apple

Google Play

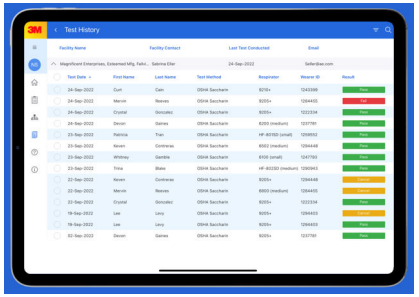
3M™ Wear it Right- How it Works

- Aids in fit test training and maintaining consistency

Designed to guide qualitative respirator fit testing following standard protocols



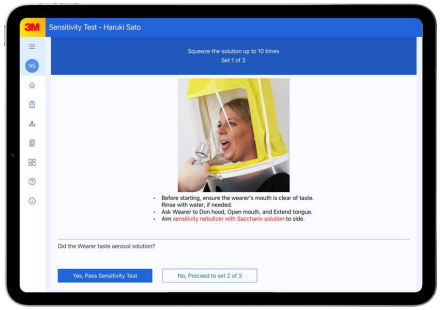
Reduce paper with all fit test results stored locally. Facility/wearer info can be imported, and results can be exported if needed.



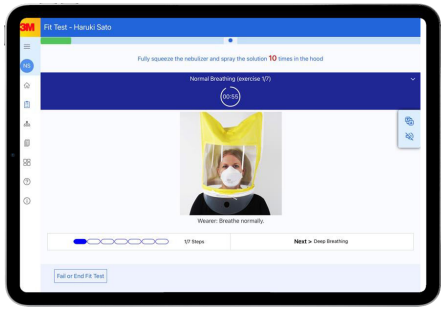
3M™ Wear it Right- How it Works (cont'd)

- Aids in fit test training and maintaining consistency

Guides conducting the sensitivity test and remembers the value for fit testing



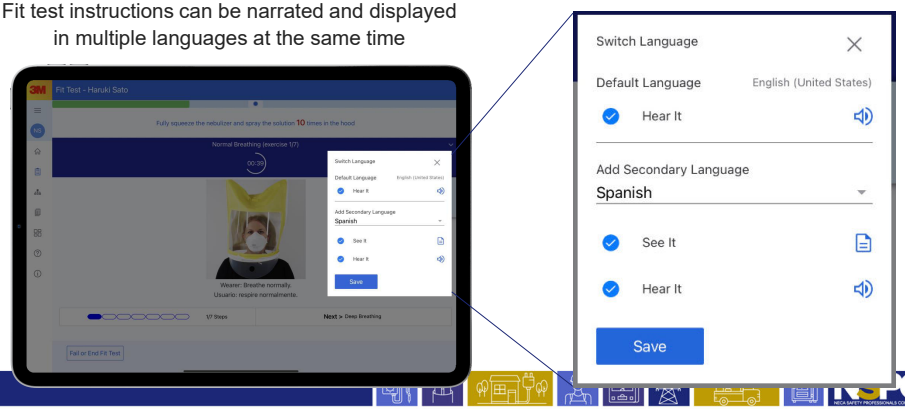
Helps ensure compliance and consistency with fit testing standards



3M™ Wear it Right - How it Works (cont'd)

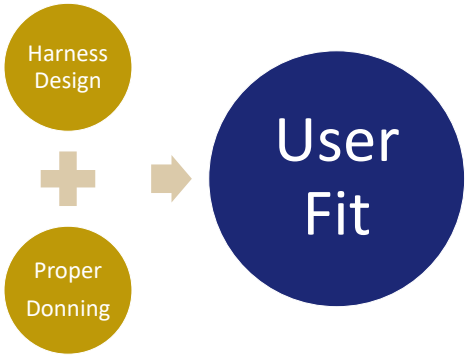
- Aids in fit test training and maintaining consistency

Fit test instructions can be narrated and displayed in multiple languages at the same time



Science of Fit: Fall Protection Harnesses

Optimal fit



Fall Protection Harness Selection & Fitting Considerations

1. **Consider the proper harness features needed for the task (D-ring location, side d-rings)**
2. Consider offering multiple harness styles
3. Consider comfort, adjustability, productivity features
4. Work with suppliers to have multiple sizes available
5. Allow workers to try on harnesses
6. Check for proper donning
7. Size up or down if needed, or adjust style

Consider a harness designed for the task

Fall Protection Harness Selection & Fitting Considerations

1. Consider the proper harness features needed for the task (D-ring location, side d-rings)
2. **Consider offering multiple harness styles**
3. Consider comfort, adjustability, productivity features
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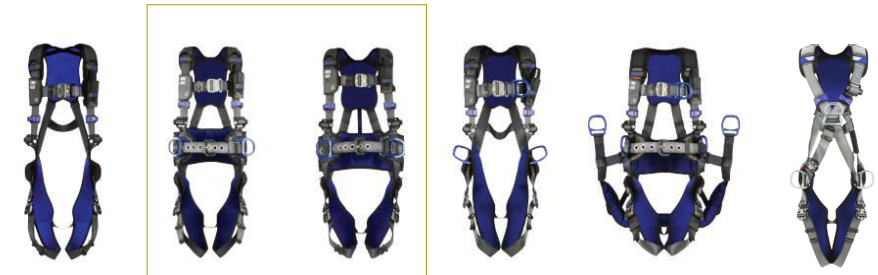
7. Size up or down if needed, or adjust style

Consider a harness designed for an industry/ multiple styles



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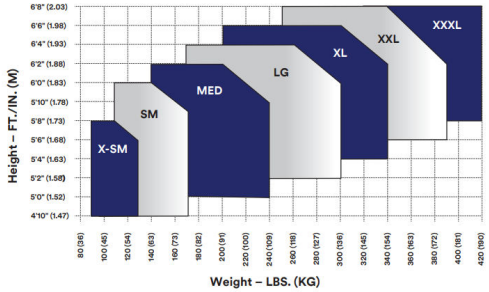
Selecting the proper size harness

3M™ DBI-SALA® ExoFit™ X100, X200, X300
Full Body Harness Sizing Chart



3M Full Body Harnesses are designed, tested and certified with a user capacity range of 130 lbs. to 310 lbs. as defined by ANSI/ASSP Z359.11 and up to 420 lbs. conforming with OSHA 29 CFR 1910.140 and 1926.502 regulations. For users below the weight capacity range of 130 lbs., the application shall be evaluated by the employer's Competent Person to determine alternate or applicable protection methods.

Fall Protection Harness Selection & Fitting Considerations

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4. Work with suppliers to have multiple sizes available
5. **Allow workers to try on harnesses**
6. Check for proper donning
7. Size up or down if needed, or adjust style

Don harness properly and adjust for proper fit

Before Starting → Step 1: Getting Started → Step 2: Shoulder Straps → Step 3: Leg Straps → Step 4: Chest Straps → Step 5: Waist belt → Step 6: Adjust harness to a snug fit

Fall Protection Harness Selection & Fitting Considerations

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Key Considerations to help make PPE selection more equitable

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- Provide training

Always ensure workers have been trained in the care, use, maintenance and inspection of their PPE.

NECA SAFETY PROFESSIONALS CONFERENCE

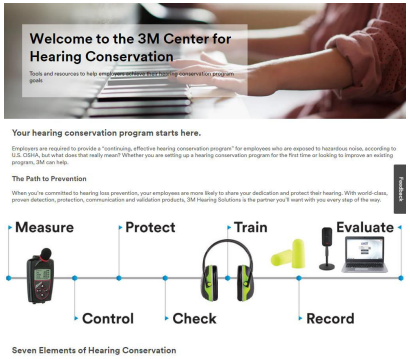
Resources

Eyewear resources

- Eyefit procedure protocol and evaluation form
- 3M Eyewear Fit System | Personal Protective Equipment | Worker Health & Safety | 3M United States
- eyewear-fit-system-procedure-protocol.pdf (3m.com)

Summary of Resources: Hearing

- 3M™ EARfit™ Dual-Ear Validation System
- Validation Testing | Hearing Protection | 3M - US
- 3M Center for Hearing Protection
- Science of fit testing: technical bulletin
- 3m-earfit-brochure-we-low-res-pdf.pdf|



Summary of Resources: Respirators

- PPE compatibility
- Is your Personal Protective Equipment working together? | Safety Network (3m.com)
- NIOSH Bivariate Panel
- NIOSH Conformity Assessment Interpretation Notice (CA 2019-1011) | NPPTL | NIOSH | CDC
- Filtering Facepiece Respirator Selection Considerations for Small faces
- Filtering Facepiece Respirator Selection Considerations for Small Faces (3m.com)

Respirator (Cont.)

Support for Qualitative Fit Testing:

https://go.3m.com/wearitright

https://multimedia.3m.com/mws/media/2286139O/psd-wear-it-right-app-instructional-video.mp4

Science of Fit testing

3M and the Science of Fit Testing |

Wear it Right Digitally Guided Fit Test

Fit Testing | Respiratory Protection | 3M

Fall Protection Resources

How to do a Fall Protection Fit Clinic:

Science of Fit: Fall Protection Guide

Thank YOU!

- Questions?
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Please complete the Online Evaluation

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