

OHD
OHD Respirator Fit
Testing



OHD Respirator Fit Testing User Guide

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OHD Respirator Fit Testing



Breathe Easy

A Comprehensive Guide to Respirator Fit Testing

- Stephanie Lynch, PhD, CIH, CSP Luke Allen
- Hunter Strickler
- October 2024

What is a Respirator Fit Test?

The use of a protocol to evaluate the fit of a respirator on an individual

Verifies training and identifies the specific make, model, style, and size of respirator best suited for each employee

Why Fit Test?

- Protect the health of employees
- Ensure employees are trained on their mask and their risk
- Provide employees peace of mind
- Required by:
 - OSHA 29 CFR 1910.134
 - ANSI Z88.10 – 2010
 - ISO 16975-2017

- HSE INDG479
- INRS ED 6273
- AS/NZS 1715



Who Can Fit Test?

- Competent Individual?
- Qualified Individual?
- Program Administrator?
- Anyone?



Accreditation Schemes



How About a Repeat Test? When the wearer

- Loses or gains significant weight (+/- 20lbs or 9kg)
- Undergoes any substantial dental work
- Develops any facial changes (scars, moles, etc.) around the face seal area
- At the regulated time interval (typically annually)



Qualitative Fit Testing (QLFT)

- Relies on the wearer to detect leakage
- Pass/Fail Test
- Typically limited to half mask respirators
- Uses a machine to measure leakage
- Provides a fit factor
- Can be used on any respirator

Two Most Common Methods of QNFT

CNP	Ambient Aerosol CNC
<ul style="list-style-type: none"> • OHD Quantifit & QuantiFit2 • Air is the challenge agent • Carried out by replacing filters with fit test adapters • Uses a Controlled Negative Pressure to directly measure respirator leakage 	<ul style="list-style-type: none"> • OHD AeroFit • Aerosol is the challenge agent • Carried out by probing the respirator • Calculates the ratio of external particles to the particles in the mask

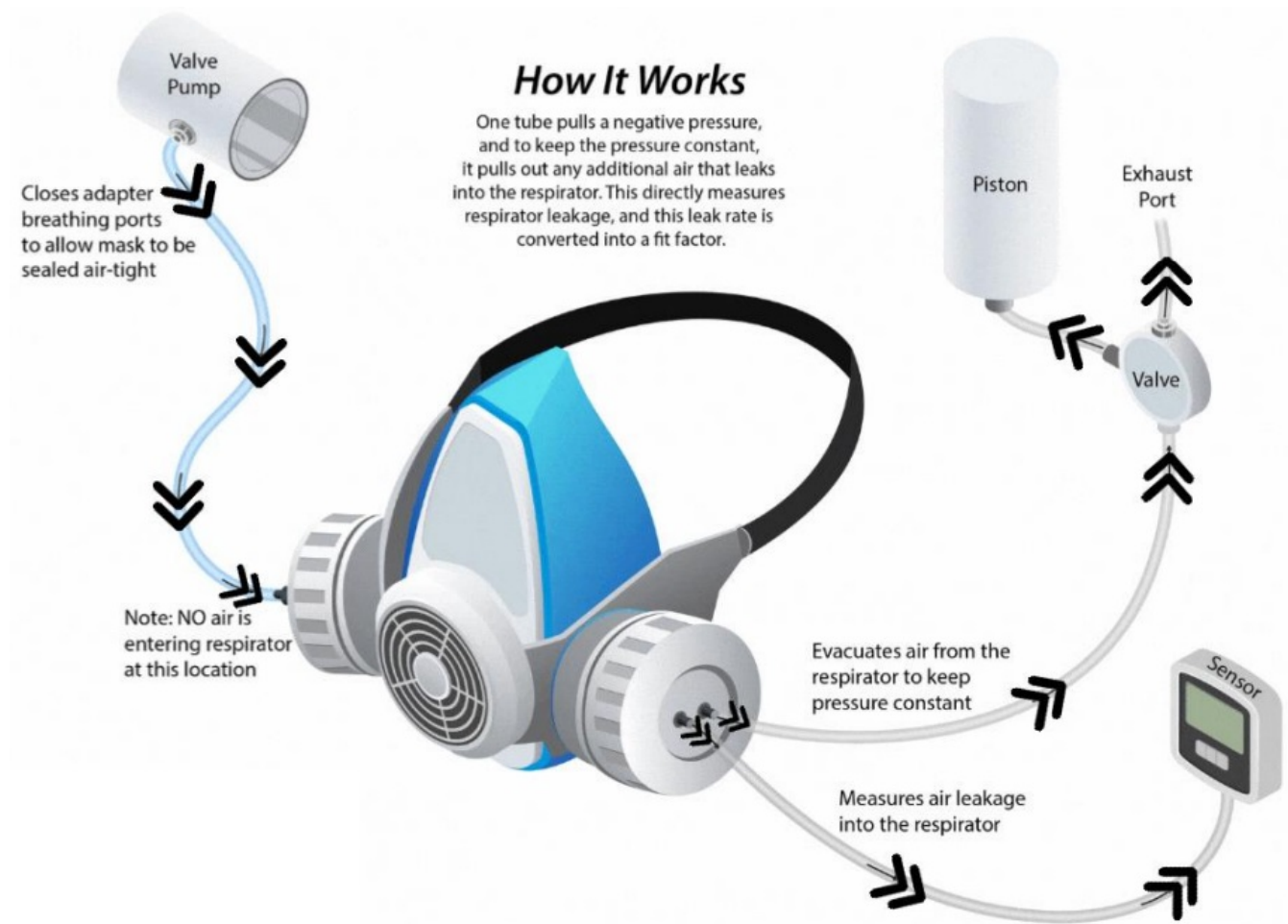


Controlled Negative Pressure

- Uses Controlled Negative Pressure technology directly related to a scientifically validated modelled breathing rate to measure respirator leakage.
- Respirator must be equipped with fit test adapters.
- The idea is that once a controlled pressure is achieved within the respirator facepiece, any air that is removed is the result of leakage.
- CNP precisely measures leak rate in cc/min after a series of exercises.
- The ratio of this leak rate to the modelled breathing rate is the Fit Factor.



How It Works



CNP

Benefits

- No Environmental Requirements
- Highly Portable
- Battery power

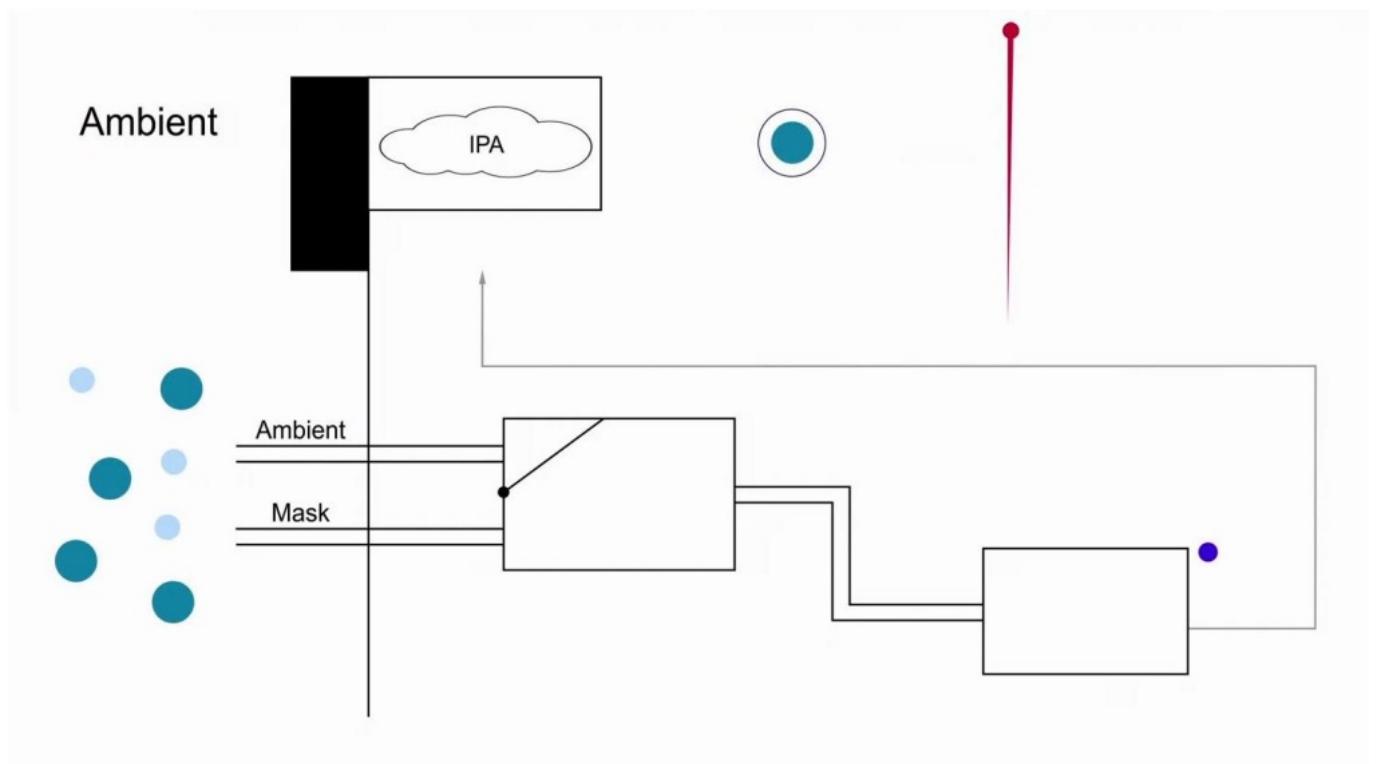
Limitations

Cannot fit test Filtering Facepiece Respirators



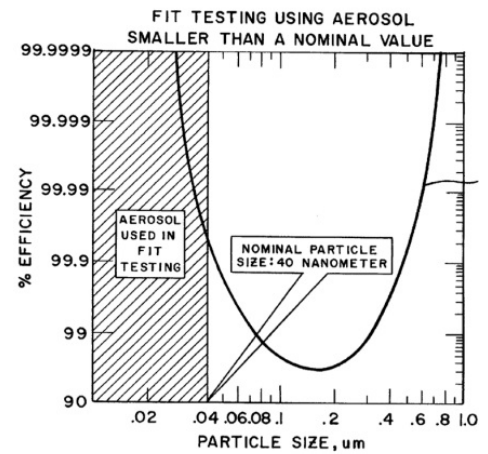
Condensation Nuclei Counting

- Uses laser technology to measure aerosol concentrations inside and outside the respirator.
- Respirator must be equipped with high efficiency filters.
- The idea is that because few particles penetrate a high efficiency filter, any found inside the respirator can be attributed to face seal leakage.
- Measures the concentration of particular particulates in the respirator while the test subject is performing a series of exercises.
- The ratio of this concentration in the breathing zone to the ambient particulate concentration is the Fit Factor.



N95/DMA Explanation

Minimum filter efficiency	N series	R series	P series
	Not resistant to oil	Somewhat resistant to oil	Strongly resistant to oil
95%	N95	R95	P95
99%	N99	R99	P99
100% (99.97%)	N100	R100	P100



CNC/APC

Benefits

Can fit test any tight-fitting respirator

Limitations

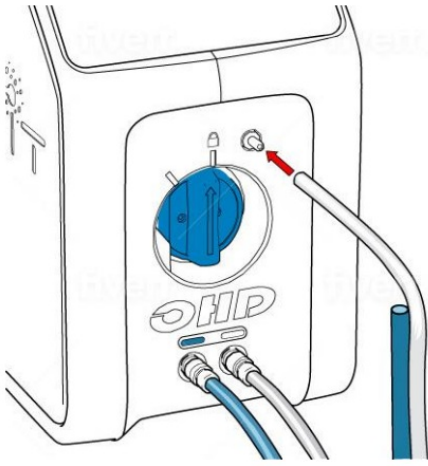
Environmental requirements
Consumables
Test Subject should not eat or smoke for 30 minutes before testing

Overall **Fit** Factor =
$$N / [1/FF1 + 1/FF2 + \dots 1/FFN]$$

Where:
N = The number of exercises;
FF1 = The fit factor for the first exercise;
FF2 = The fit factor of the second exercise;
FFN = The fit factor of the Nth Exercise.

Latest Advancements in Respirator Fit Testing

AeroFit Built in Zero Port



AEROFIT

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YOUR PROTECTION. OUR PRIORITY.



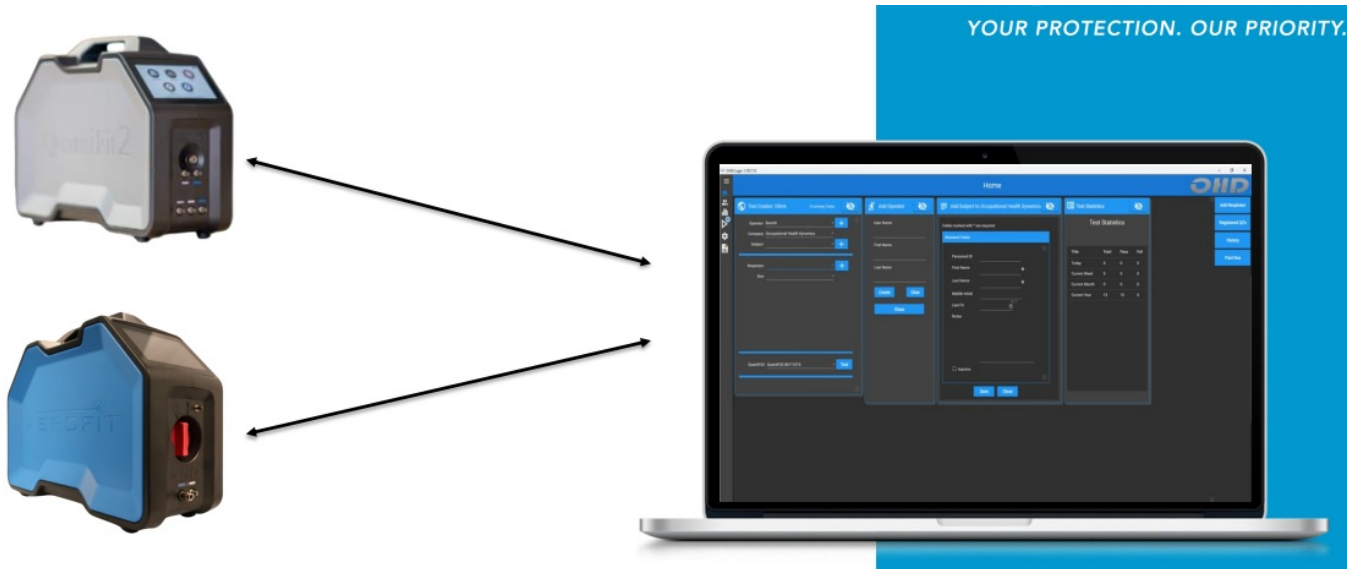
QuantiFit2 – Integrated Valve Prop Adapters

- **Convenience:** Eliminates the need to use and keep track of separate, small valve props
- **Speed & Efficiency:** Reduces setup time for fit testing
- **Consistency:** Ensures consistent, repeatable results in fit testing by standardizing the valve propping process

QuantiFit2 and AeroFit

- Can operate in stand-alone mode with virtually unlimited data storage or can operate through OHD Logic software.
- OHD Logic software can operate both the QuantiFit2 (CNP) and AeroFit (CNC) simultaneously out of one fit testing database.

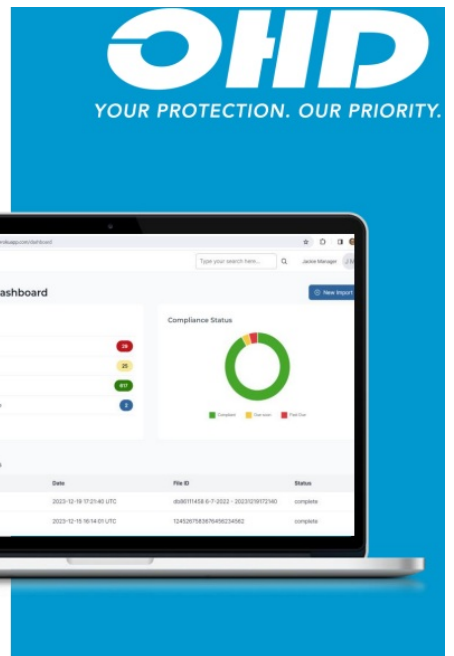
One Software, Two Instruments



Software Innovations

The image shows a laptop displaying the OHD Logic Cloud Manager Dashboard. The dashboard includes a sidebar with navigation options like Dashboard, Personnel, Notifications, Conflicts, Instruments, Data Imports, and Reports. The main content area shows an Overview section with status indicators for Past Due, Due Soon, Compliant, and Calibration Due. A Compliance Status donut chart is also present, with a legend for Compliant (green), Due Soon (yellow), and Past Due (red). Below the chart, there are two tables: 'Due Soon Personnel' and 'Past Due Personnel', each listing names, due dates, and actions. The background of the image features the text 'FIT TESTING COMPLIANCE. SIMPLIFIED. WITH LOGIC CLOUD' and the OHD logo with the slogan 'YOUR PROTECTION. OUR PRIORITY.'

Logic Cloud Data Flow



OHD - Logic Cloud

https://staging.ohdlogic.com/dashboard

OHD All Locations ▾

Type your search here... 🔍 Hunter Strickler HS

Manager Dashboard [New Import](#)

Overview

Past Due	305
Due Soon ⓘ	16
Compliant	1888
Calibration Due	1

Compliance Status

■ Compliant ■ Due Soon ■ Past Due

Due Soon Personnel

Name	Due Date	Actions
Ashton Dunbar	05/26/2024	Profile >
Yunki Noh	05/26/2024	Profile >

Past Due Personnel

Name	Due Date	Actions
Amy Easha	02/23/2023	Profile >
Brian Clancy	03/24/2023	Profile >

[Settings](#) ▾

Version 1.10.0

Dashboard

Personnel

Notifications

Conflicts

Instruments

Data Imports

Reports

Settings

OHD

1 Locations

Type your search here...

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HS

ABC Manufacturing Co

Home > Personnel List

Personnel List

Export CSVImport CSWNew Personnel

Compliance statusDue Soon-+Apply Filters

Status	First Name	Last Name	Due Date	Company	Notes	Actions
Due Soon	Aaron	Sadler	06/08/2024	ABC Manufacturing Co		Profile >
Due Soon	Adam	Kilian	06/13/2024	ABC Manufacturing Co		Profile >
Due Soon	Tomas	Sierra	06/13/2024	ABC Manufacturing Co		Profile >
Due Soon	JASON	HURD	06/13/2024	ABC Manufacturing Co		Profile >

4 Total Records

Version 1.10.0

Dashboard

Personnel

Notifications

Conflicts

Instruments

Data Imports

Reports

Settings

OHD

1 Locations

Type your search here...

Hunter Strickler

HS

ABC Manufacturing Co

Home > Notifications > New Notification

New Notification

Recipient(s) email

supervisor@abc.com

Notification type:

Past Due List

Due Soon List

Start date

Frequency

Time (Cdt)

2024-05-21

Every Tuesday

08:00 AM

Location

Select all

☒ ABC Manufacturing Co

Version 1.10.0

Training Innovations

ONLINE TRAINING

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AND MAXIMIZE THE
VALUE FROM YOUR
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How to Use the QuantiFit2 (03:12 / 15:03)

Resources | Exit

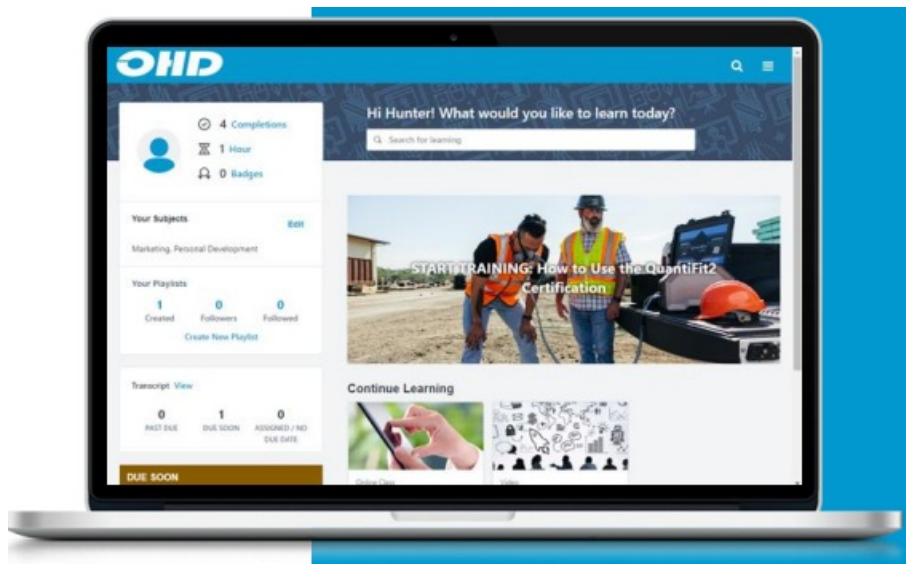
Menu

1. Introduction
2. Powering On Your Unit
3. Daily Verification
4. Adapters & Inhalation Valve Props
5. Knowledge Check 1
6. Adding a Test Subject
7. Performing a Fit Test
8. Knowledge Check 2
9. Record Keeping & Reports
10. Troubleshooting
11. Annual Calibration
12. Controlled Negative Pressure
13. Conclusion

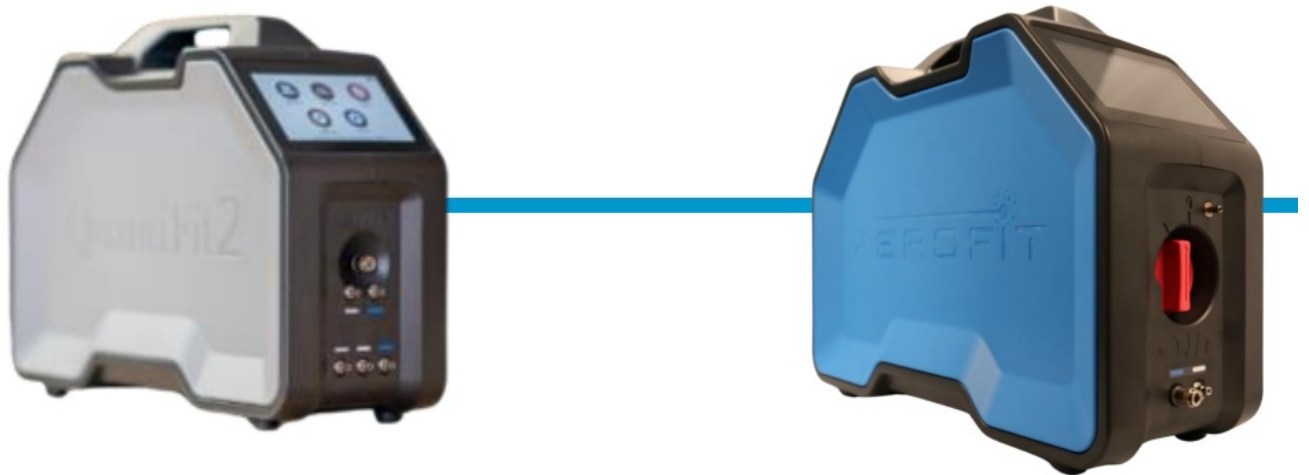


Introducing: OHD Academy

- How to Use the QuantiFit2 course has received early 5-star reviews
- Designed for individual (not group) training for new Q2 operators
- OHD registers each participant in the platform
- Certificate is issued upon completion



Which instrument is right for you?



Breathe Easy

With the launch of AeroFit, OHD will be the only respirator fit testing manufacturer with both CNC and CNP technologies.



Q&A

Thank You for Attending!

Visit us with Air-Met at the AIOH Conference in December!

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Visit us with Air-Met at the AIOH
Conference in December!



Documents / Resources



[OHD Respirator Fit Testing](#) [pdf] User Guide
Respirator Fit Testing, Respirator, Fit Testing, Testing

References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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