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Science.
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Respiratory Protection Program

Respiratory Protection
Stacy Richardson, BSc., IHT, CRSP

April 2022

This presentation is approved for the following audiences:

- ✓ External Customers
- ✓ External Sales (e.g. Distributor) Reps
- ✓ Internal (3M) Sales Reps
- ✓ 3M Global Application Engineering

This presentation was approved by:

- ✓ 3M US PSD Application Engineering
- ✓ 3M US PSD Legal Counsel

Date Approved: March 2022

Topics

Are Respirators Needed?

Face Coverings, Masks and Respirators – Comparison

Respiratory Protection Program

Respiratory Protection and COVID

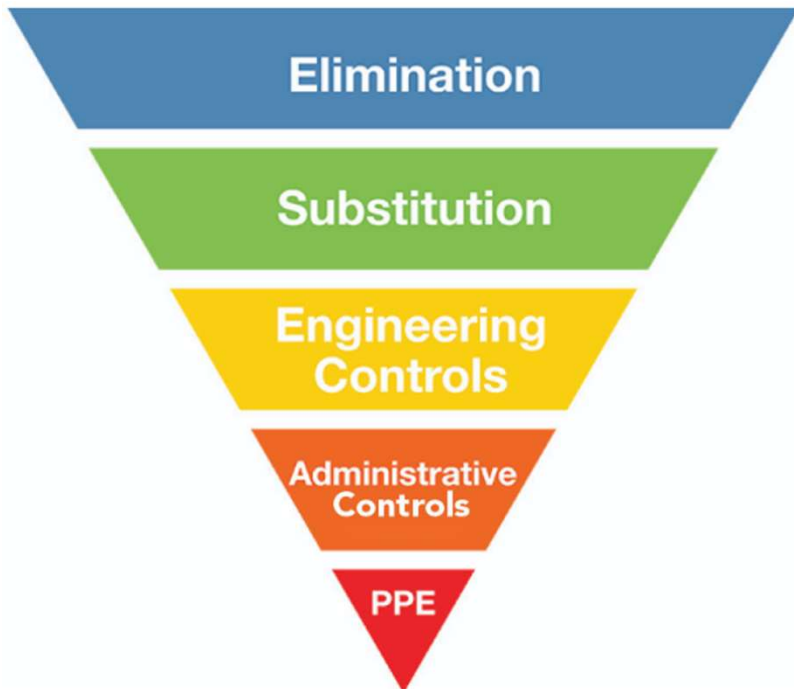
The background of the slide is a complex, abstract geometric pattern composed of numerous overlapping triangles and polygons in various shades of blue, ranging from light cyan to deep navy. The shapes are arranged in a way that creates a sense of depth and movement, with some areas appearing more prominent than others. The overall effect is a modern, high-tech aesthetic.

Are Respirators Needed?

Getting Started



Hierarchy of Controls



<https://www.cdc.gov/niosh/topics/hierarchy/default.html>

Elimination: Focusses on eliminating / removing the hazard altogether

Substitution: Looks at the materials used in the process and considers there's a suitable alternative that's safer

Engineering Controls: examine what engineering controls can be installed in the existing process, applications or facilities to reduce exposure to the hazard at source

Administrative controls: the last of the collective controls such as safety signage, job rotation, PPE zones

PPE : PPE is classified as the least effective and reliable control measure in the hierarchy of that requires correct selection of adequate and suitable PPE

Respirator Selection









Note: When the only hazard identified is a bioaerosols, follow the Control Banding Selection Process (CSA Z94.4-11)



The background is a complex, abstract geometric pattern composed of numerous overlapping triangles and polygons in various shades of blue, ranging from light cyan to deep navy. The shapes are arranged in a way that creates a sense of depth and movement, with some areas appearing more prominent than others.

Face Coverings, Masks and Respirators

Respiratory Protection Devices and Masks

	Not PPE ¹	Considered PPE by OSHA ¹				
	Homemade face covering 	Procedure Mask 	Surgical Mask 	Filtering Facepiece Respirators 	Elastomeric Respirators 	PAPR with hood, helmet, or headcover 
Fit	Loose	Loose	Loose	Tight	Tight	Loose
Recommended* as source control to help capture spit or mucous expelled by wearer	●	●	●	●		
Tested for fluid resistance			●	● (some models only)		
Designed to help reduce the wearer's exposure to airborne particulate hazards when properly selected and worn				●	●	●
>94-95% filtration efficiency against particulates**				●	●	●
Some components can be cleaned / disinfected and reused					●	●

This table provides general information concerning the products shown. Always read and follow all user instructions and applicable guidance.

*Recommended by [CDC](#), [OSHA](#), and/or [FDA](#) as source control. **when used with an N95, FFP2 or similar particulate filter

¹ OSHA Guidance on Returning to Work <https://www.osha.gov/Publications/OSHA4045.pdf>

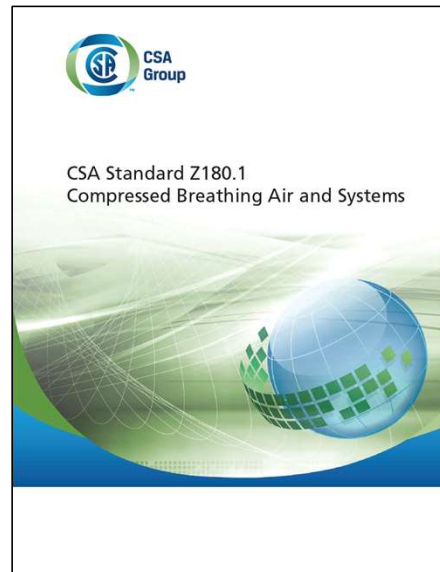
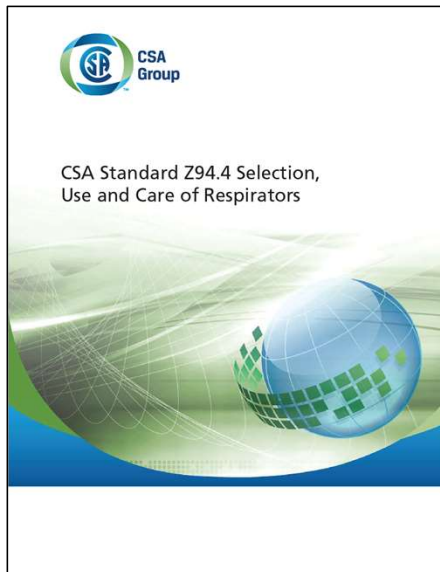




Respiratory Protection Program

Introduction to Regulations and Standards

- Respirators must be used and selected in accordance with the authority having jurisdiction
- Provincial regulations & Federal regulations
- Additional regulatory bodies, standards and best practices



Standards, regulations and guidance

NIOSH European Norms

Performance Standards National or International

- Define how equipment must deliver protective capability
- Usually defined by equipment design

Occupational Health and Safety Acts

Regulations

National & Provincial

- Define what employers must do to ensure worker safety
- This includes a requirement to assess if respirators are needed and requirement that those used should meet a performance requirement

Canadian Standard Z94.4

Standards

National or International

- Provide guidance on how to perform necessary functions associated with respirator usage such as respiratory protection programmes, training, fit testing and how select respirators

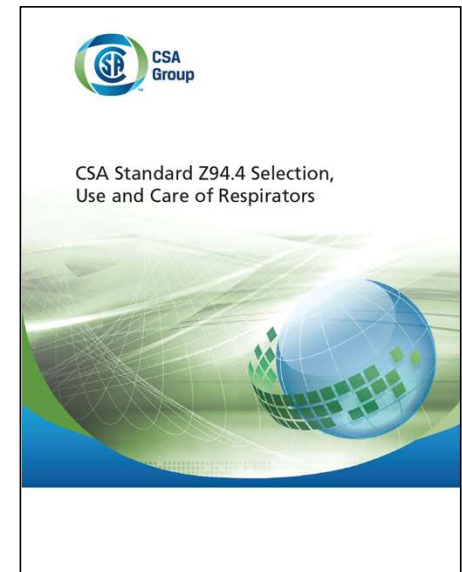


CSA Z94.4: selection, use and care of respirators

Requires that a respiratory protection program be developed and implemented. Includes:

- Roles and responsibilities
- Hazard assessment
- Selection of the appropriate respirator
- Respirator fit testing
- Training
- Use of respirators
- Cleaning, inspection, maintenance, and storage of respirators
- Health surveillance of respirator users
- Program evaluation
- Recordkeeping

NIOSH approved respirators must be used – no modifications or non-approved assemblies



If a worker wears a respirator:

A
Respiratory
Protection
Program is
Required!

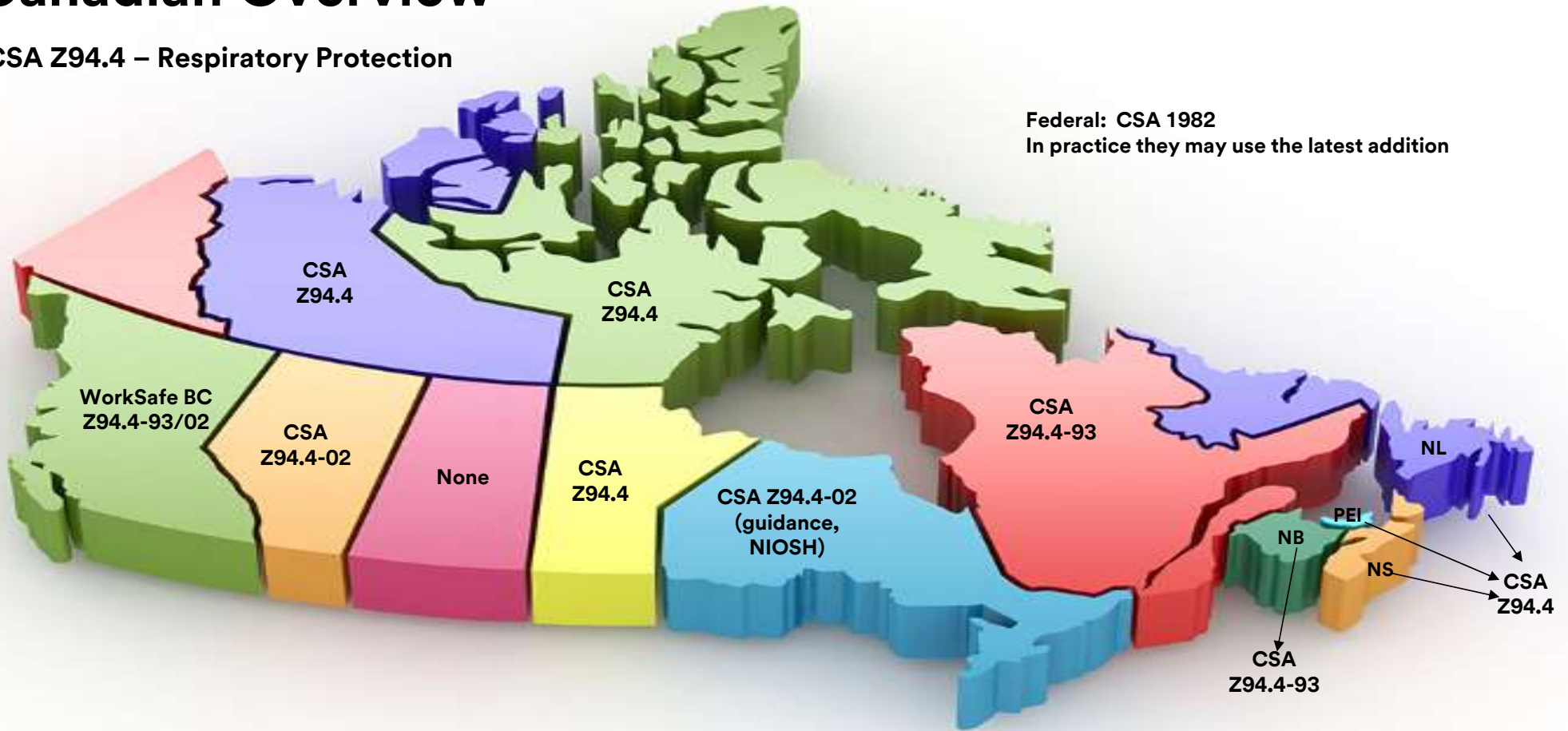
Follow the
elements in
CSA Z94.4

What
Version of
CSA Z94.4?



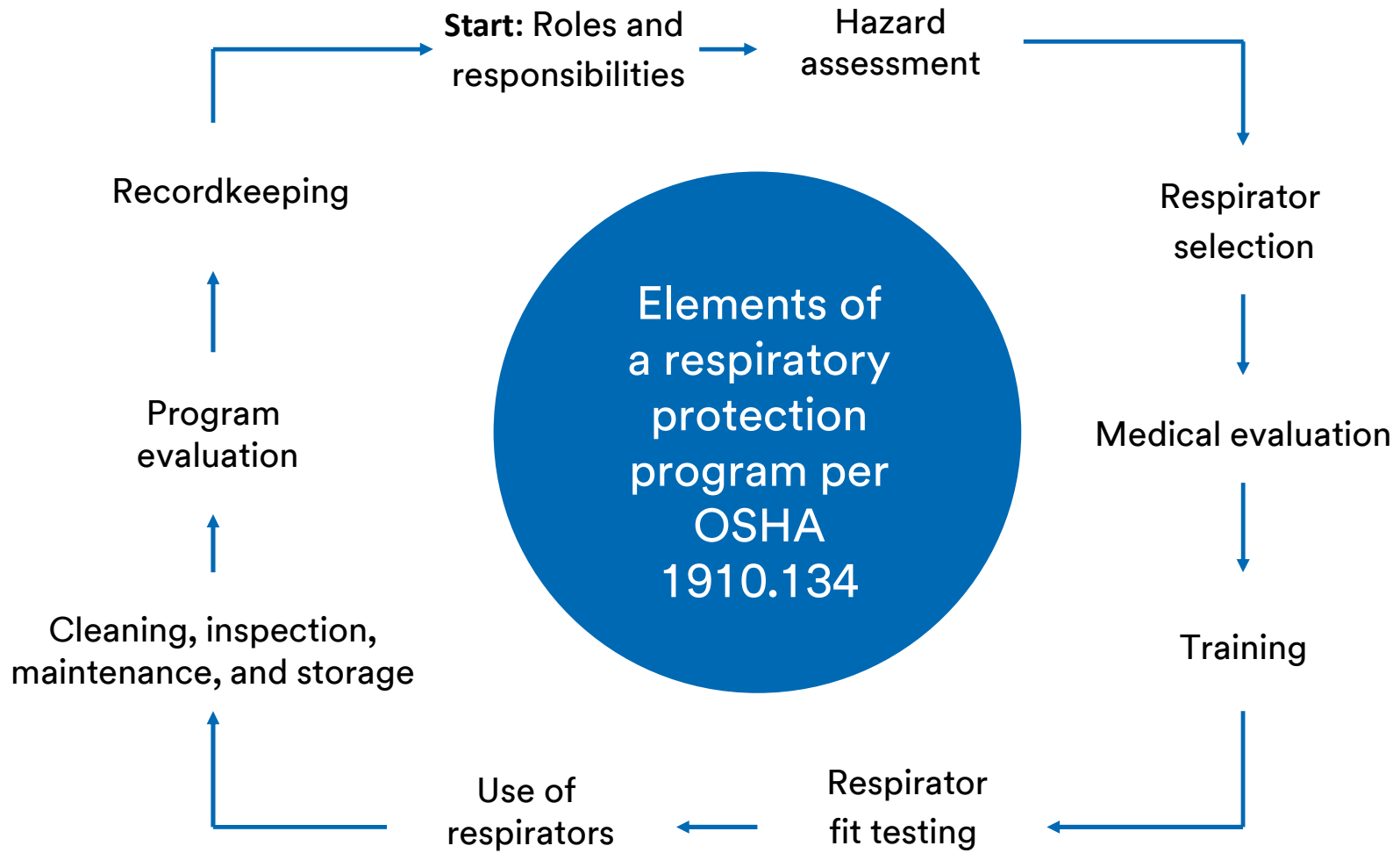
Canadian Overview

CSA Z94.4 – Respiratory Protection





ELEMENTS OF A RESPIRATORY PROTECTION PROGRAM



Roles and Responsibilities

Employer Responsibilities

Establish written protocols for respirator cleaning, inspection, maintenance, and storage

Train employees in respirator use and respiratory hazards

Ensure employees are medically cleared to wear respiratory protection

Fit test employees when respiratory protection is required

Employee Responsibilities

Inspect respirator before each use

Don respirator and conduct user seal check before each use

Be clean shaven for fit test and respirator use

Must wear the model of respirator with which they passed a fit test



Respiratory Selection Considerations

Respiratory Hazards – Types

- Oxygen Deficiency

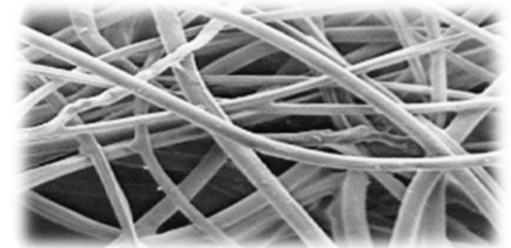


- Gases and Vapors



- Particulates

- Dusts, Mists, Fumes
- Fibers, Micro-organisms



Filters vs Cartridges?

Filters

Particulates:

- Dust
- Fibres
- Mist
- Bioaerosols
- Fumes



Cartridges

Gas / Vapours:



Air Purifying Filters

Negative Pressure

NIOSH Filter Categories (42 CFR Part 84)			
Minimum Filter Efficiency	Resistance to Oil		
	N (No Oil)	R (Oil Resistant)	P (Oil Proof)
95%	N95	R95	P95
99%	N99	R99	P99
100% (99.97%)	N100	R100	P100*

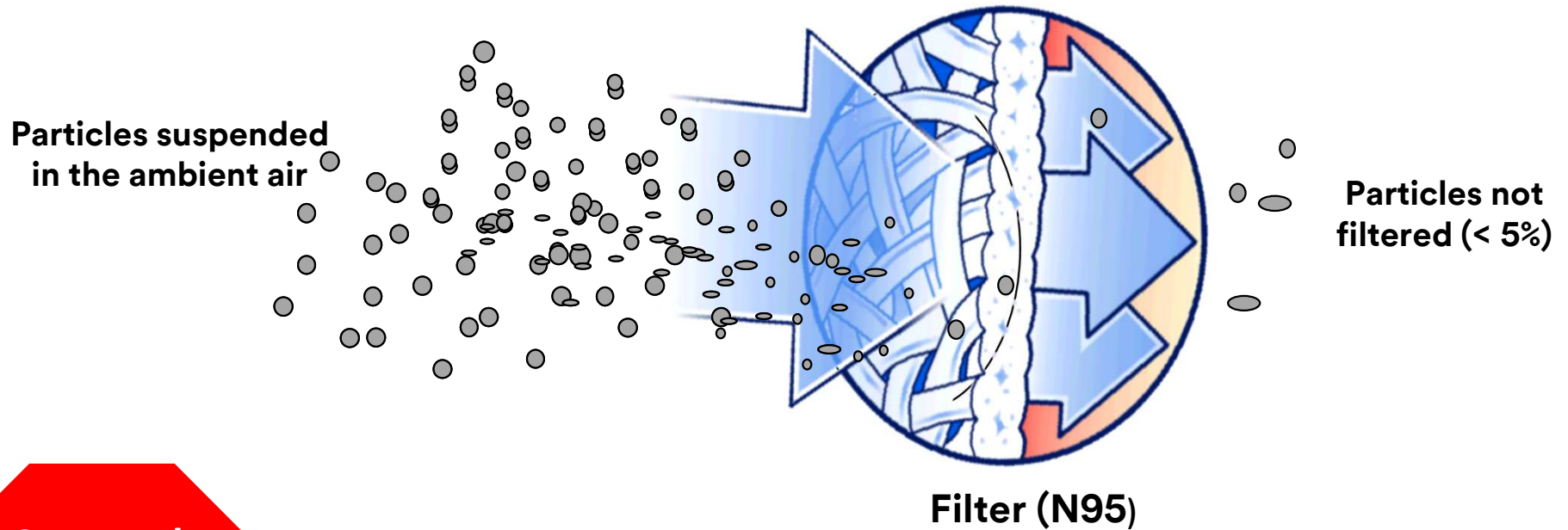


HEPA only

* For Powered Air Purifying Respirators (PAPRS) there is only one filter class, HE (high Efficiency)



Particulates



**Captured
using a
FILTER**

A filter is an open structure of randomly oriented small fibers with finite depth. Particles are collected throughout the depth of the filter

<https://multimedia.3m.com/mws/media/3761790/nanotechnology-and-respirator-use.pdf>



Replacement criteria - filter

For “N” Series

- Physically damaged
- Unhygienic
- Increased breathing resistance
- Employer’s change out schedule

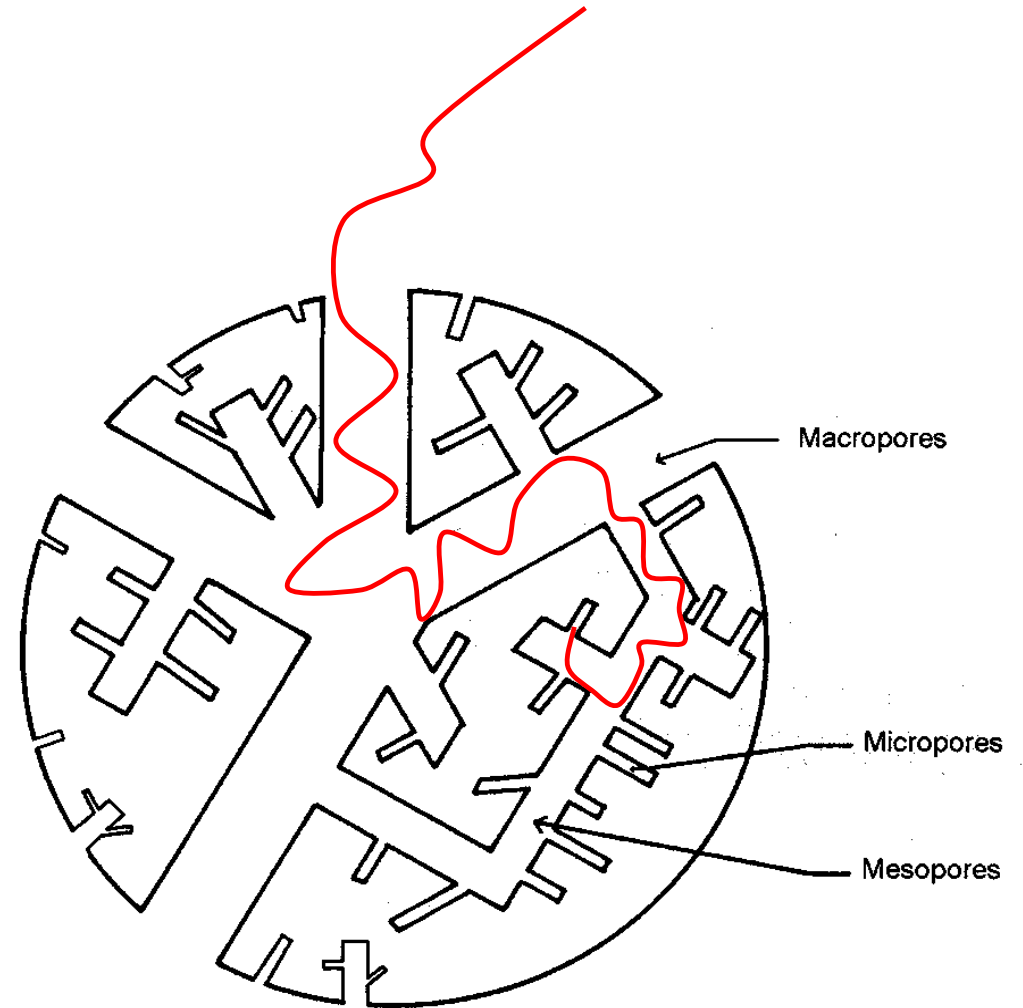
For R and P series, in environments containing oily aerosols, **also follow;**

- R series: every shift (8 hours)
- P series: according to manufacturer. (ex. 3M recommends 30 days or 40 hours use, whichever comes first)

Note: For PAPR replace filter when air flow doesn’t meet manufacturer’s requirements

Gas and Vapours

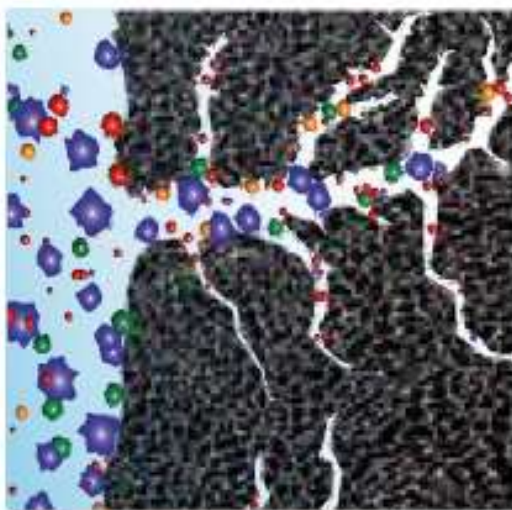
- Gas: neither liquids nor solids at room temperature and pressure
- Vapour: evaporate from liquids or solids



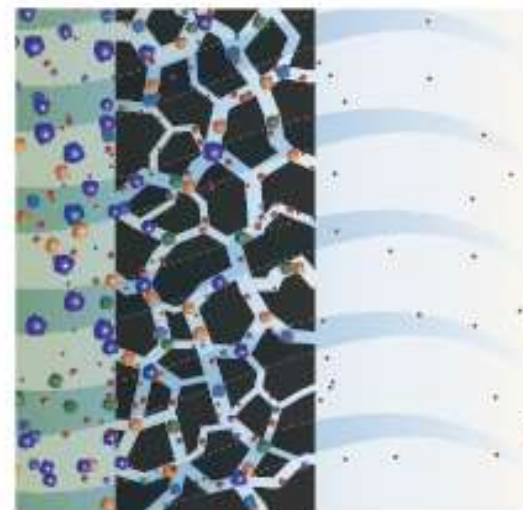
How does the cartridge work?



Unfiltered organic vapours are drawn into the cartridge.



Activated carbon adsorbs organic vapours on molecular level.



Service life continues until vapours begin to escape the cartridge.

Color Codes for Cartridges and Filters

Organic Vapor

Black



Acid Gas

White



Organic Vapor / Acid Gas

Yellow



Ammonia / Methylamine

Green



Formaldehyde

Olive



Multi-Gas / Vapor

Olive



Mercury/OV/AG

Olive



P100 Particulate Filter

Magenta



Cartridge service life is affected by

- Cartridge type
- Contaminant concentration
- Temperature: service life ↓ as temperature ↑
- Humidity: Water takes up space in carbon pores
 - ↓ capacity with organics
 - ↑ reactivity with inorganics
- Respiratory rate / Airflow volume
- Presence of other contaminants:
 - Competition for active sites
 - Low volatility organics may displace more volatile organics
- Storage considerations: low volatility organics may migrate during storage

Cartridge replacement schedules are mandatory

OSHA 29 CFR 1910.134

- The employer must implement a change schedule for canisters and cartridges that will ensure that they are changed before the end of their service life
- Describes in the respirator program the information and data relied upon and basis for the change schedule and reliance on the data

Options:

- Estimated using software programs
 - End of service life indicators
 - Maximum use time
 - Breathing resistance as appropriate (filters)
-
- Note: Software programs help estimate cartridge service life based on inputs – but they do not account for individual use/storage/reuse patterns or changes in exposure, temperature, humidity, breathing rate, etc that affect service life.



3M Service Life Software



Select and Service Life

1 Setup

Once you know what's in your air, 3M™ Select and Service Life Software helps you explore respirators, cartridges and filter options and select the one that's right for you. Then you can establish an effective gas/vapor cartridge change out schedule to help keep workers protected.

Select the results you are wanting to view.

1 Select respirators, cartridges and filters for my contaminants

2 Estimate service life for gas/vapor cartridges

Summary

Location

United States (English)

Contaminants

Cartridge/Filter

<http://extra8.3m.com/SLSWeb/home.html>

Environment Questions

Cartridge

Relative Humidity

Atmospheric Pressure 1.0 Acceptable range of atmospheric pressure is 0.8 to 1.2 ATM.

Temperature Fahrenheit

Work Rate

Solution

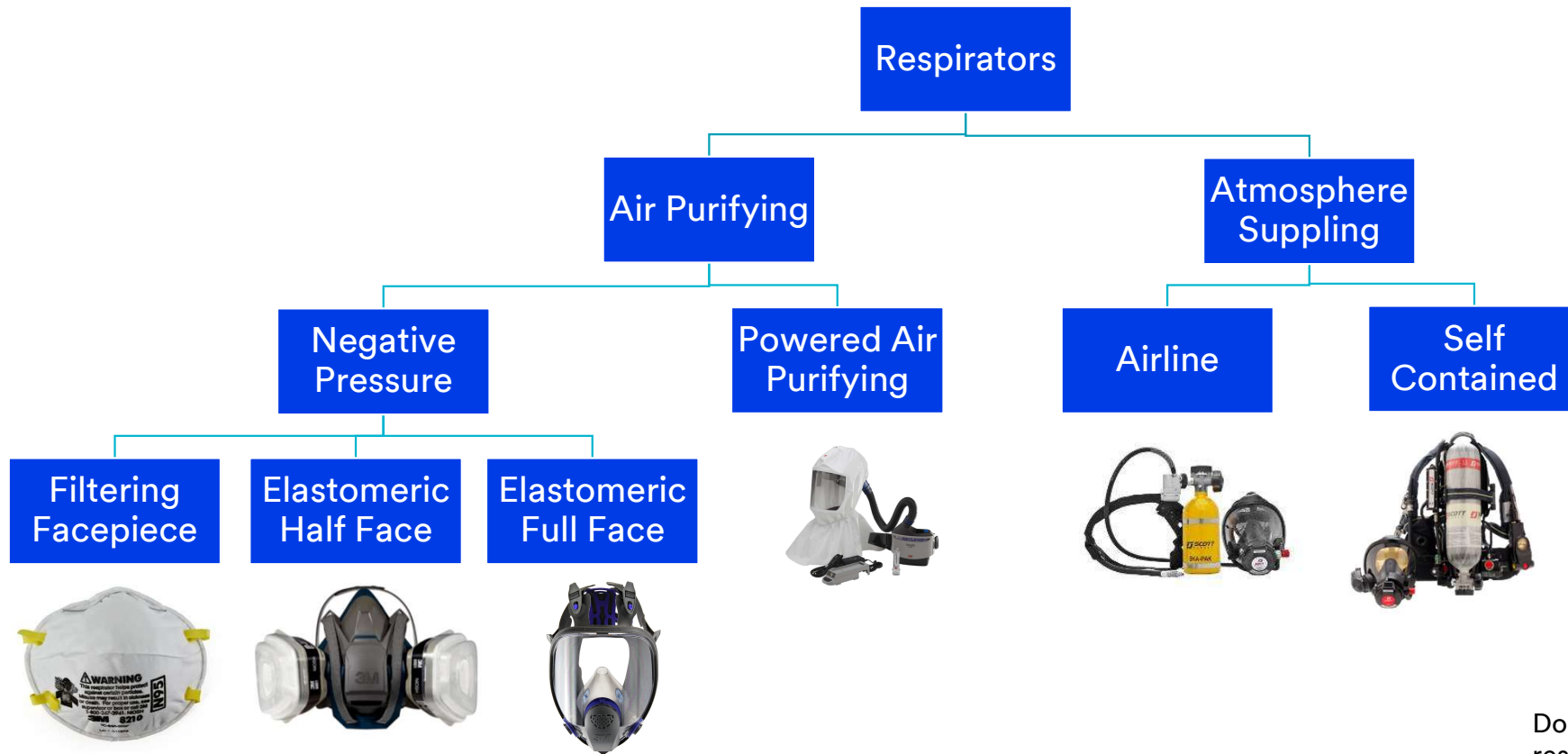
WARNING: These results are estimates only and must be used with caution. Change cartridge earlier if taste, smell or irritation from contaminant is detected.

Contaminants

Contaminant	CAS Number	Exposure	Unit
Styrene	100-42-5	100.0	ppm



Respirators – Many Options for Various Applications



Does not include all respirator types or styles

Assigned protection factors

Respirator Type		CSA	CSA	CSA	CSA	BC	NIOSH	OSHA
		Z94.4-93	Z94.4-02	Z94.4-11	Z94.4-18		2004 Selection Logic	OSHA Nov. 2006 29 CFR 1910.134
Air Purifying	Half Facepiece	10	10	10	10	10	10	10
	Full Facepiece	100	100 (QLFT – 10)	50 (QLFT 10)	50 (QLFT 10)	50	10 ¹ / 50 ²	50
Powered Air Purifying	Loose-fitting facepiece	25	25	25	25	25	25	25
	Half facepiece	50	50	50	50	-----	50	50
	Full facepiece	1000	1000	1000	1000	100 ⁵ 1000 ⁶	50	1000
	Helmet or hood	1000	1000	25 / 1000 ³	25 / 1000 ³	25 / 1000 ³	25	25 / 1000 ³
Air Line Continuous Flow Supplied Air	Loose fitting facepiece	25	25	25	25	25	25	25
	Half facepiece	50	50	50	50	50	50	50
	Full facepiece	1000	1000	1000	1000	1000	50	1000
	Helmet or hood	1000	1000	25 / 1000 ³	25 / 1000 ³	1000	25	25 / 1000 ³
Air Line Pressure Demand	Half facepiece	50	50	50	50	50	1000	50
	Full facepiece	1000	1000	1000	1000	1000	2000	1000
	SCBA Full facepiece ⁴	-----	-----	10000 ⁴	10000 ⁴	10000	10000	10000
	SCBA tight fitting hood	-----	-----	10000 ⁴	10000 ⁴	10000	-----	10000

¹APF of 10 with full facepiece respirators equipped with N/R/P 95 or 99 class filters.

²APF of 50 with a full facepiece equipped with a class 100 filter. Full facepiece with gas/vapour cartridge and/or equipped with a 100 class pre-filter.

© ³ Manufacturer must demonstrate APF of 1000

⁴ Must be QNFT

⁵ Full facepiece, powered (PAPR), equipped with HEPA filters for exposure to asbestos

⁶ Full facepiece, powered (PAPR), equipped with HEPA filters and/or sorbent cartridge or canister for exposure to contaminants other than asbestos

Effective Protection vs. Assigned Protection Factor (APF)

Respirator Type	APF	Percent of Time Respirator Worn & Associated EPF			
		80%	90%	95%	100%
Half Facepiece APR	10	3.6	5.3	6.9	10
Loose fitting Facepiece	25	4.3	7.4	11.4	25
Full Facepiece APR	50	4.6	8.5	14.5	50
Hood or Helmet	1000	4.98	9.9	19.6	1000
SCBA	10,000	4.99	9.99	19.9	10,000

Colton, Craig. "Respiratory Protection." *Fundamentals of Industrial Hygiene*. Ed. Barbara Plog. Itasca: National Safety Council, 2012. 678-679. Print.



Types of Respirators

Require fit testing

Tight-Fitting

Loose-Fitting

Half Facepiece

Full Facepiece



Disposable

Reusable

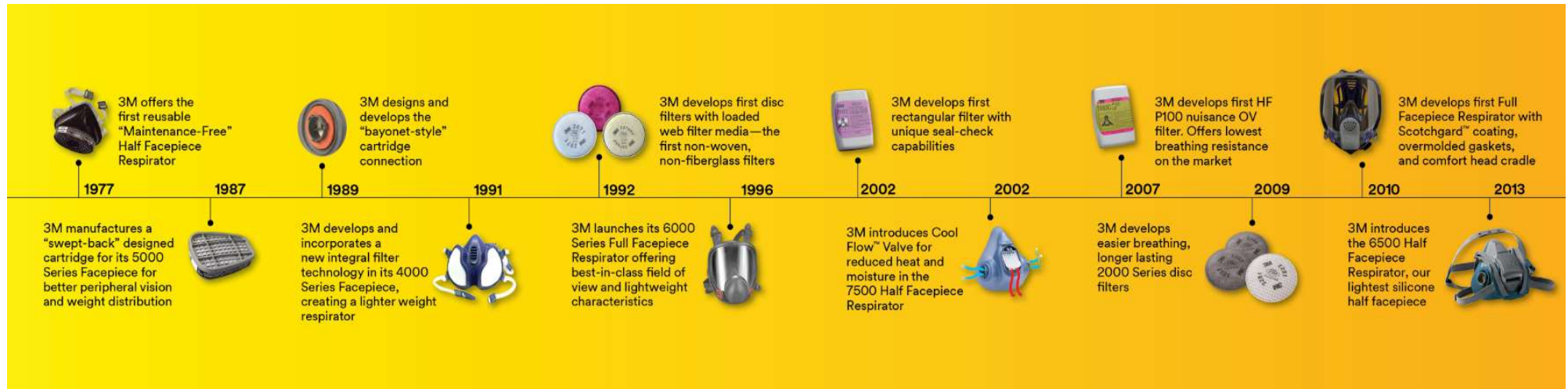
Helmet

Hood



RR History

Continued winning position in the Reusable Respirator category



Integrate significant new technology improvements into portfolio of Reusable Respirators

Innovate at the top of the pyramid to help us win in an increasingly competitive environment, including in the lower tiers

The RR portfolio expands with Secure Click



No other competitor offers this combination of features & benefits

The world's workforce deserves the next generation in respiratory protection.

Invented, not imitated.

Designed with smart and intuitive features, the 3M™ Secure Click™ Half Facepiece Reusable Respirator helps protect workers from airborne contaminants.

Greater breathability and comfort provided by the world's first quad flow cartridge system. Available in three sizes with optional speaking diaphragm.



Every single piece is new-to-the-world

Existing line



HALF
FACEPIECE



G&V
CARTRIDGES



COMBINATION
CARTRIDGES



REPLACEABLE
FILTER & RETAINER






PARTICULATE
FILTERS



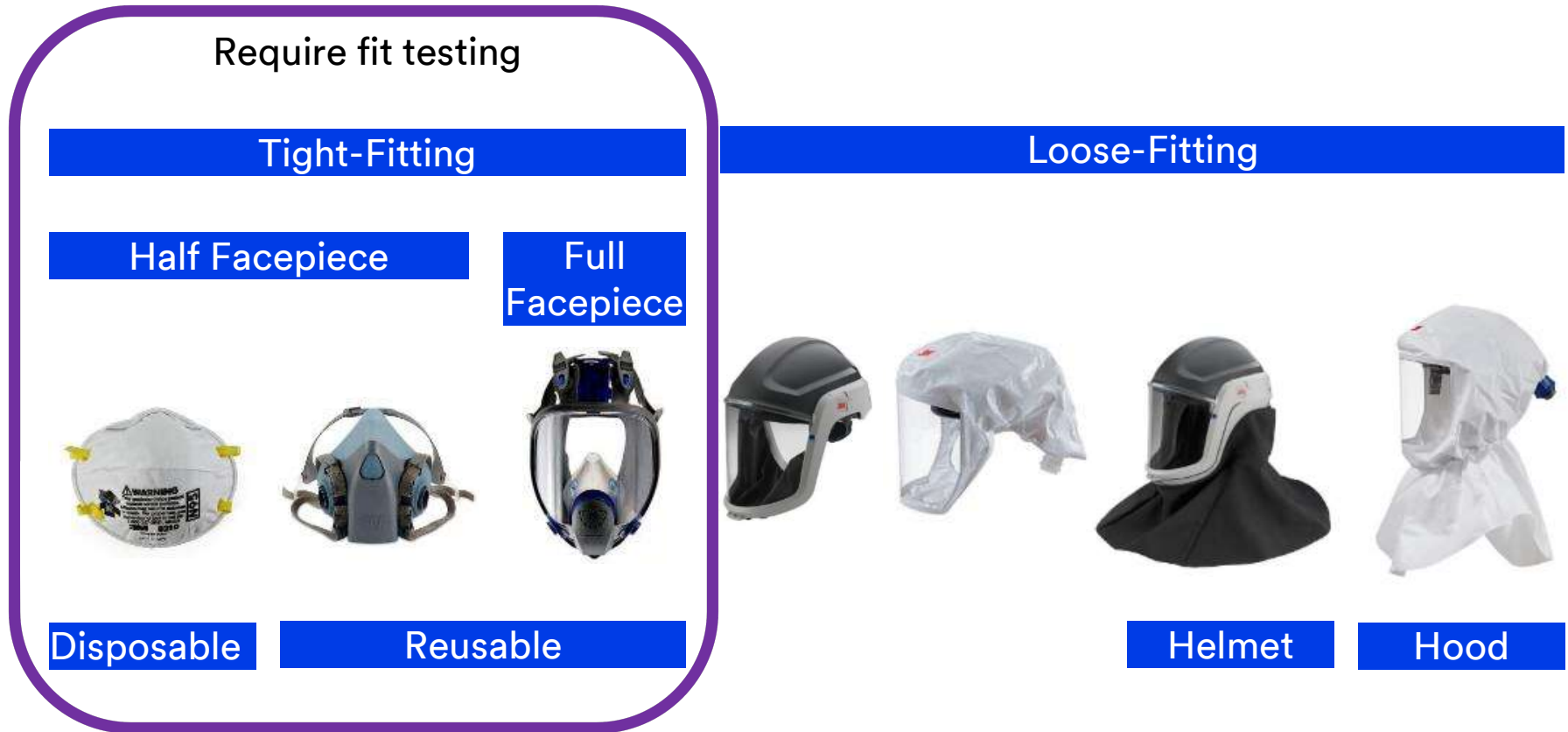
New 3M™ Secure Click line



HF-800 series offers many unique features

	 5000 series	 6000 series	 6500 series	 7500 series	 HF-800 series
Low profile	better	better	better	good	best
Face seal material	TPE	TPE	Silicone	Silicone	Silicone
Seal check	+/- check	+/- check	+/- check	+/- check	+ push button
Communication	No diaphragm	No diaphragm	No diaphragm	No diaphragm	Diaphragm
Connection type	n/a	bayonet	bayonet	bayonet	Secure Click™
Valve type	button	button	Cool Flow™	Cool Flow™	Secure Click™
Quick latch/drop down	no	no	yes	yes	no

Types of Respirators



When to Conduct Fit Testing

Repeat fit test:

- **Whenever** a different make, model or size respirator is used
- **Change** in employee's facial shape from accidents, surgery, dentures, piercings, excessive weight loss or gain
- **Employee** feels respirator isn't fitting properly
- **Required annually by OSHA**

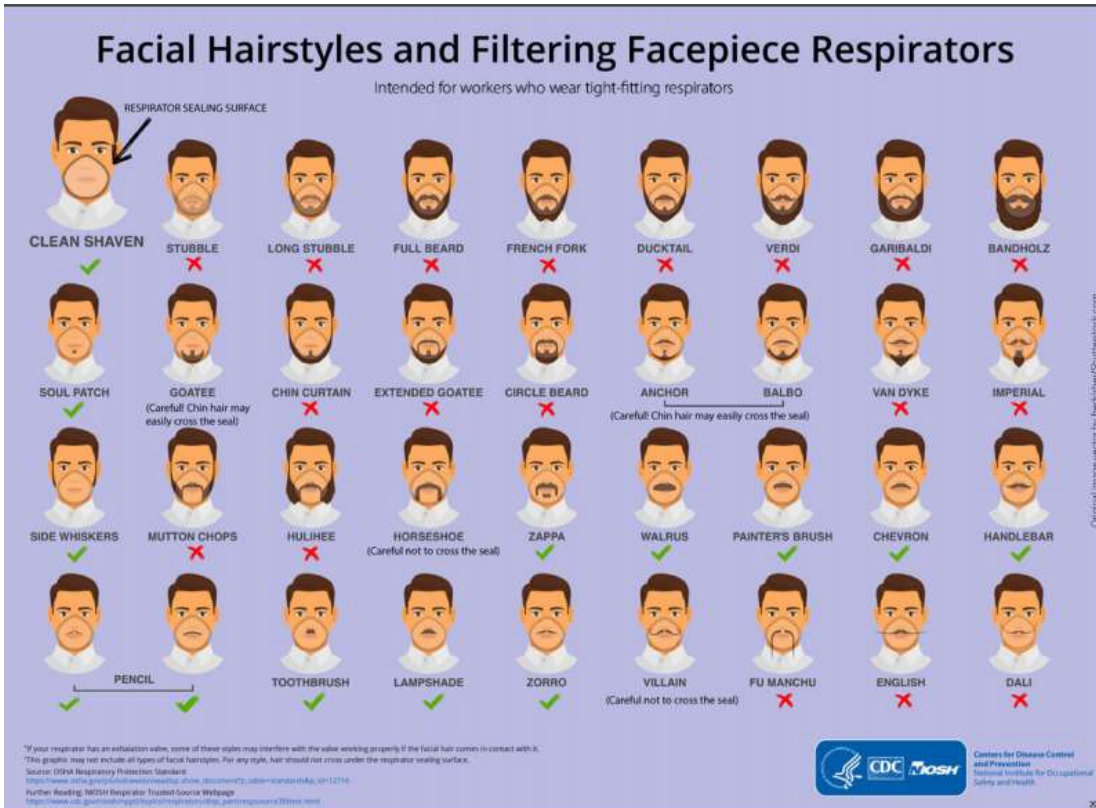


Fit Testing

Qualitative Vs Quantitative fit test



What about people with Facial hair?



- Facial hair can impair the sealing of the respirator
- “Clean shave policy” for all tight fitting respirators
- Contact your EHS / HSE to understand more
- Follow local regulatory guidelines

<https://www.cdc.gov/niosh/npptl/pdfs/FacialHairWmask11282017-508.pdf>



Respiratory Protection and COVID

Possible Alternatives to Surgical Filtering Facepiece Respirators: Healthcare

Evaluating Available Respiratory Protection Options

Examples of respirator types that may be available when availability of surgical N95 respirators is limited include:

		
Non-surgical filtering facepiece respirators	Reusable (elastomeric) respirators	Powered air-purifying respirators (PAPRs)

Can I decontaminate N95s?

Service life extensions of RPE

<https://multimedia.3m.com/mws/media/18248690/decontamination-methods-for-3m-filtering-facepiece-respirators-technical-bulletin.pdf>

Decontamination must

- Be effective against the agent
- Not damage filtration
- Not affect fit
- Be safe for the wearer

Decontamination of 3M Filtering Facepiece Respirators, such as N95 Respirators, in the United States - Considerations

Introduction

NOTE: Please revisit this document often for frequent updates.

The purpose of this document is to communicate information related to the impact of decontamination methods on certain 3M filtering facepiece respirator (FFR) models – the purpose is **not** to recommend the practice of decontamination or to comment on the efficacy of the decontamination method on the virus that causes COVID-19 or the safety of the decontamination methods for FFR wearers.

During this COVID-19 pandemic, several governmental agencies have recommended that decontamination may be part of a reuse approach to optimize the use of available FFRs. 3M cannot recommend decontamination of FFRs, because FFRs are not designed to be decontaminated, and doing so voids the regulatory approval (see details in the Background section). However, since certain decontamination methods have been recommended by United States Centers for Disease Control and Prevention (CDC), US Occupational Health and Safety Administration (OSHA), and US Food and Drug Administration (FDA), 3M has evaluated the impact of select decontamination methods on certain 3M FFR models, and is publishing this information to help customers who choose to implement decontamination to do so in such a way that they are unlikely to damage FFRs, as such damage may result in the FFRs not providing the indicated level of exposure reduction, such as N95.

Background

During this public health emergency of the COVID-19 pandemic outbreak, many healthcare institutions are experiencing shortages of FFRs such as N95 respirators.

The CDC has issued [Strategies for Optimizing the Supply of N95 Respirators](#). In this document the CDC recommends conventional capacity strategies, contingency capacity strategies (during expected shortages) and crisis strategies (during known shortages). Contingency and crisis strategies include use of N95s past their shelf life, extended use of N95s, use of other types of respirators, use of respirators from other countries, and re-use of respirators, ahead of decontamination of respirators.

The CDC discusses reuse and extended use of N95s as a crisis strategy at [Recommended Guidance for Extended Use and Limited Reuse of N95 Filtering Facepiece Respirators in Healthcare Settings](#) and has published guidelines on [Decontamination and Reuse of Filtering Facepiece Respirators](#). CDC is recommending a wait and reuse approach before consideration of other decontamination approaches.

Key excerpt from [CDC guidelines](#): **"One strategy to reduce the risk of contact transfer of pathogens from the FFR to the wearer during FFR reuse is to issue five N95 FFRs to each healthcare staff member who care for patients with suspected or confirmed COVID-19. The healthcare staff member can wear one N95 FFR each day and store it in a breathable paper bag at the end of each shift with a minimum of five days between each N95 FFR use, rotating the use**

Decontamination of Reusable (elastomeric) & PAPRs



See local/national guidance
See manufacturer's instructions



PPE needed?

<https://multimedia.3m.com/mws/media/17939590/cleaning-and-disinfecting-3m-reusable-respirators-following-potential-exposure-to-coronaviruses.pdf>
<https://multimedia.3m.com/mws/media/17939560/cleaning-and-disinfecting-3m-paprs-following-potential-exposure-to-coronaviruses.pdf>



Decontamination of Filters and Cartridges

Image				
Name	Disc Filters	Pre-Filter Pads	7093/7093C/603X	6092X/609X Cartridges
Wipe outside surface as indicated in disinfecting product user instructions with damp cloth and disinfecting solution				

Image					
Name	603	501	Pre-Filter Pad	603/501/Pre-filter Assembly	501/Pre-filter pad/cartridge Assembly
Cleaning Method	Wipe, spray or soak	Wipe, spray or soak		Wipe outside surfaces as indicated in disinfecting product user instructions with damp cloth and disinfecting solution. Do not allow disinfecting solution to reach the pre-filter.	

Possible Facepiece disinfection methods:

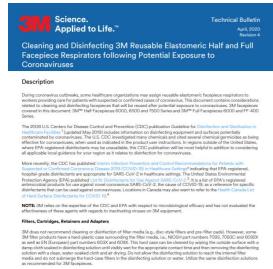
Sodium hypochlorite solution (at a free chlorine concentration of **5,000 ppm**) with 1-minute contact time.

70% Isopropanol solution with 1-minute contact time **Note:** Soaking in IPA solution resulted in degradation of inhalation valves after ~ 20 cycles, for some 3M facepieces. Pay close attention to this area during inspection, for all facepieces.

* Read the complete bulletin

[Cleaning and Disinfecting 3M Reusable Elastomeric Half and Full Facepiece Respirators following Potential Exposure to Coronaviruses](#)

Video



Other Country Approved Respirators

RPE approved to other standards

Different Standards adoption for RPE

- ★ N95 (United States)
- ★ FFP2 (Europe)
- ★ KN95 (China)
- ★ P2 (Australia/New Zealand)
- ★ Korea 1st class (Korea)
- ★ DS2 (Japan)

Comparison of global Filtering facepiece respirator classes -
Technical bulletin:

<https://multimedia.3m.com/mws/media/1791500O/comparison-ffp2-kn95-n95-filtering-facepiece-respirator-classes-tb.pdf>

3M Personal Safety Division

Based on this comparison, it is reasonable to consider China KN95, AS/NZ P2, Korea 1st Class, and Japan DS FRs as "equivalent" to US NIOSH N95 and European FFP2 respirators, for filtering non-oil-based particles such as those resulting from wildfires, PM 2.5 air pollution, volcanic eruptions, or bioaerosols (e.g. viruses). However, prior to selecting a respirator, users should consult their local respiratory protection regulations and requirements or check with their local public health authorities for selection guidance.

Certification/ Class (Standard)	N95 (NIOSH-42C FR84)	FFP2 (EN 149-2001)	KN95 (GB2626-20 06)	P2 (AS/NZ 1716:2012)	Korea 1 st Class (KMOEL - 2017-64)	DS (Japan JMHLW- Notification 214, 2018)
Filter performance – (must be ≥ X% efficient)	≥ 95%	≥ 94%	≥ 95%	≥ 94%	≥ 94%	≥ 95%
Test agent	NaCl	NaCl and paraffin oil	NaCl	NaCl	NaCl and paraffin oil	NaCl
Flow rate	85 L/min	95 L/min	85 L/min	95 L/min	95 L/min	85 L/min
Total inward leakage (TIL)* – tested on human subjects each performing exercises	N/A	≤ 8% leakage (arithmetic mean)	≤ 8% leakage (arithmetic mean)	≤ 8% leakage (individual and arithmetic mean)	≤ 8% leakage (arithmetic mean)	Inward Leakage measured and included in User Instructions
Inhalation resistance – max pressure drop	≤ 343 Pa	≤ 70 Pa (at 30 L/min) ≤ 240 Pa (at 95 L/min) ≤ 500 Pa (clogging)	≤ 350 Pa	≤ 70 Pa (at 30 L/min) ≤ 240 Pa (at 95 L/min)	≤ 70 Pa (at 30 L/min) ≤ 240 Pa (at 95 L/min)	≤ 70 Pa (w/valve) ≤ 50 Pa (no valve)
Flow rate	85 L/min	Varied – see above	85 L/min	Varied – see above	Varied – see above	40 L/min
Exhalation resistance - max pressure drop	≤ 245 Pa	≤ 300 Pa	≤ 250 Pa	≤ 120 Pa	≤ 300 Pa	≤ 70 Pa (w/valve) ≤ 50 Pa (no valve)
Flow rate	85 L/min	160 L/min	85 L/min	85 L/min	160 L/min	40 L/min
Exhalation valve leakage requirement	Leak rate ≤ 30 mL/min	N/A	Depressuriza tion to 0 Pa ≥ 20 sec	Leak rate ≤ 30 mL/min	visual inspection after 300 L/min for 30 sec	Depressuriza tion to 0 Pa ≥ 15 sec
Force applied	-245 Pa	N/A	-1180 Pa	-250 Pa	N/A	-1,470 Pa
CO ₂ clearance requirement	N/A	≤ 1%	≤ 1%	≤ 1%	≤ 1%	≤ 1%

*Japan JMHLW-Notification 214 requires an Inward Leakage test rather than a TIL test.



How to know if this product Fake or Counterfeit?

3M recommends purchasing 3M respirators from 3M authorized distributors or dealers, which will increase the likelihood that you will receive authentic 3M products.

3M does not recommend purchasing respirators from unknown sellers on multi-party internet e-commerce platforms.

Here are some tips to help avoid counterfeit products:



3M respirators will be sold in 3M packaging, with model-specific user instructions accompanying the product.

3M respirators should not be sold individually, or without packaging (including user instructions).

3M has strict quality standards, and therefore products that have missing straps, strange odors, blocked valves, misspelled words, etc. are likely not authentic 3M respirators

FAQs for Work Places

<https://multimedia.3m.com/mws/media/1792539O/respiratory-protection-faq-workplace.pdf>

Key Questions:

- Can FFRs be re-used?
- Is there a time limit to wearing an FFR?
- Can FFRs be shared?

3M Science.
Applied to Life.™

Technical Bulletin
May, 2020
Revision 4

Filtering Facepiece Respirators FAQ: Workplace

Introduction

This is a general document that is not specific to any particular airborne contaminant, including viruses and bacteria.

During public health events – such as wildfires, times of high air pollution, airborne-transmissible disease outbreaks, etc. – employers may need to provide respiratory protection to workers who usually do not require respiratory protection. Examples include workers whose jobs keep them outdoors during air pollution events, or workers with prolonged or frequent exposure to large groups of people during disease outbreak events.

When respiratory protection is recommended for workers and the public, the recommendations focus on government approved respirators such as "N95, FFR2 or equivalent." When used correctly, respirators can help reduce wearers' exposures to airborne particulate hazards such as dusts, mists and fumes – including particles so small that they can't be seen. Respirators contain filter material and are designed to form a seal with the wearer's face, so that air passes through the filter (instead of around the edges) before it is inhaled. A common choice is a disposable filtering facepiece respirator (FFR), such as those shown below.



No matter how well a respirator seals to the face and how efficient the filter media is, wearers should expect a small amount of leakage inside any respirator. No respirator will eliminate exposures entirely. Please read the questions and answers below to give you a better understanding of how respirators work. If you have additional questions about the use of 3M respirators, please consult our website or your local 3M office. The following are generalized responses to some frequently asked questions, to help provide clarity around the following topics:

- 1) [Respirators vs. Masks](#)
- 2) [Types of Respirators](#)
- 3) [How Respirators Work](#)
- 4) [How to Use Respirators](#)
- 5) [Comfort Considerations](#)
- 6) [Aesthetic Considerations](#)



Thank You

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