



# Shawmut Protex™ N95 Respirators

The innovative Protex™ N95 respirator solution delivers cutting-edge comfort, performance, and protection that is miles ahead of the competition

# A Remarkable Feat of Engineering

The respirators described in this booklet are a remarkable feat of engineering. Each element was fine-tuned to deliver the optimal combination of comfort, breathability, and face seal. We devised and manufactured a proprietary meltblown filter material that offers cooler, easier breathing. We developed a unique elastomeric strap system to deliver constant force across a full range of head sizes. We sourced a special viscoelastic nose foam that relieves nose pressure and minimizes fogging. And we used digital prototyping technology and hundreds of digital fit test assessments to refine our cup design for a secure and comfortable seal on almost every face.

The result? The Shawmut Protex™ N95 Respirator has been shown to fit nearly 100% of test subjects across a full range of facial types. That's what makes it Premium. If a respirator does not fit you and seal properly, it cannot protect you, no matter how comfortable it is, what fancy features it has or how much marketing muscle is behind it. The Protex™ N95 is one of the very few in the market we have tested and found to meet and exceed the exacting ASTM F3407-20 Respirator Fit Capability standard that

predicts a respirator's ability to fit and seal a wide population. Our Fit Capability Scores are near 100%, well above the next highest competitor. NIOSH is looking at applying the standard to N95s. We're there now and are the only brand that has publicly adopted the standard.

We have a mission to bring high-quality N95 respirator manufacturing back to the United States. Shawmut is a fourth-generation, family-owned Advanced Materials business, with humble beginnings in 1916 in a Massachusetts woolen fabric mill. We have a 100-year history of rising up to support the nation during times of crisis, so when the last few years exposed weaknesses in our PPE supply chain, we saw it as our duty to jump in.

We are determined to use our manufacturing and materials engineering expertise to make the world's best N95 respirators, at an affordable price, right here in the US. It's a perfect fit with Shawmut's core mission: Materials Innovation for a Better World.



*James Wyner*

James Wyner, CEO  
Shawmut Corporation

# Fits, Seals and Protects

An N95 respirator that doesn't fit properly and leaks around the edges will not do the job it is intended to do.

Because the Protex™ N95 is designed and tested to fit and seal the widest range of face shapes and sizes, employees that have no way to fit test themselves can start with a respirator that meets the ASTM F3407 Standard for respirator fit capability.

And for those companies that have employee fit-test respiratory programs, their jobs just got easier.



VIEW VIDEO

## Protex™ Designed to Fit



# Premium Comes Standard, Not Extra



**Fits the Widest  
Range of Face  
Shapes and Sizes**



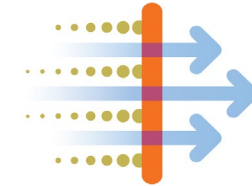
**Meets ASTM  
F3407 Standard**



**Made in the USA**



**Patent-Pending  
All-Day-Comfort™  
System**



**Lighter, Cooler,  
Best-in-Class  
Breathability**



**Reduces  
Eyeglass Fogging**

# The Protex™ N95 Has Premium Built In

## Unlike Most Others, It Fits and Seals the Widest Range of Faces (Page 11)

An N95 respirator might feel comfortable to wear, but without proper fit-testing, the wearer has no way of knowing if it is leaking around the edges and not doing its job. We know; we've tested a lot of them, and there's a lot of leakers out there! Most of your employees have no way to fit-test.

But with the Protex™ N95, Shawmut took fit and protection surety to a new level.

Our custom-designed cup and components have produced an N95 respirator with unparalleled fit capability based on the ASTM F3407 Respirator Fit Capability (RFC) standard.

**Protex™ N95s meet the ASTM F3407-20 standard and are the only commercial N95s to claim this today.**

The Protex™ N95s achieve passing fit scores on close to 100% of subjects tested, far exceeding the ASTM standard.

The result is a single product line that can fit the vast majority of users and will simplify the fit testing for companies who have employee respiratory programs.

We are also the only brand to adopt the RFC standard for all our respirators and publicly publish the results.

## Supply Chain Security and Speed (page 8)

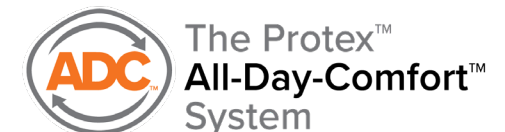


Because it is locally designed, engineered and made in the US, the Protex™ N95 is not subject to long and expensive ocean voyages which can impact the performance of the sensitive filter media, the heart of the respirator. The result is much shorter lead times and quick turnaround when you need it, as well as a responsive local partner. **We are not beholden to third-party factories on the other side of the globe**, which don't have the regulatory oversight that US factories have. Oversight drives consistent quality, regulatory performance and compliance. Made in the USA matters.

## Engineered to be Most Comfortable (page 9)






We heard the stories and complaints about the poor comfort of the market-leading N95s. We knew we could do better. We set out to make the most comfortable cup-style N95 that was also the best-performing for fit and seal. Customer feedback has been that we have hit the mark and feel Protex™ is the most comfortable cup style N95 they have worn.

Because they were all designed to work together, the components of our **patent-pending Protex™ All-Day-Comfort™ System deliver new levels of comfort, performance, fit, seal, and protection**. From the engineered flange of the cup, to the long-force-curve head straps, to the 50% lighter and 3°F cooler filter layer, all materials and components were chosen and manufactured to achieve All-Day-Comfort.



The One Designed to Fit is the One to Beat

# N95 Respirator Comparison Chart

Category	Protex™ 	Competitor A 	Competitor B 	Competitor C 	Competitor D 
100% US-Sourced Material	✓				
Country of Origin	USA	USA w/Global Materials	China	Global	India
Easy Breathing ( $< 10\text{mm H}_2\text{O}$ )	✓	✓		✓	
Cooler to Wear	✓				
All-Day-Comfort™ System	✓				
Fits and Seals Widest Range of Face Sizes	✓	✓			
Meets ASTM F3407 Standard	✓	✓			
Fit Capability Score	97%	73%	0%	23%	16%

Comparison results obtained through in-house laboratory testing

**Protex™**  
Advanced Protection



**106** YEARS  
OF INNOVATION

## Shawmut makes Advanced Materials...

We apply our expertise in textiles, fibers, foams, films, coating, laminating, and surface treatments to develop custom engineered, high-performance flexible materials

## That perform...

...in some of the toughest applications in some of the world's most demanding industries

## That tell your story...

...by creating custom materials that support your design vision, using insights into market and technology trends and access to the universe of emerging materials

## And are available where you need them...

...with turn-key global solutions with a fully-supported, world-wide sales, manufacturing and field support platform that is seamless from development through mass production.

## What Do You Need?

### AUTOMOTIVE



- Moldability
- Pressure Barrier
- Temperature Cycling
- Hot Shear and Pull

### MEDICAL



- Absorbency
- Viral Barrier
- Breathability
- Drape

### PROTECTIVE WEAR



- Fire Retardancy
- Chemical Barrier
- Heat Transmission
- Drape
- Washability

### FILTRATION



- Porosity
- Chemical Resistance
- Hydrostatic Resistance
- Formability

### PERFORMANCE WEAR



- Elasticity
- Water Barrier
- Breathability
- Washability



# Why Made in the USA Matters



You need to **trust** your PPE products every time you put them on and use them. We put that trust into every health and safety product we make, and it starts with US-sourced materials, our own Shawmut MB™ proprietary high-quality meltblown filtration media and products engineered and manufactured in the US.

## Why US Manufacturing Of N95 Respirators Matters

American-made manufacturing can respond and scale to answer national PPE needs in a manner difficult for foreign bodies to match.



READ THE BLOG

*Adhering to our custom design specifications and engineered to exceed typical standards, our custom-formulated synthetic polypropylene Shawmut MB™ meltblown is an incredibly lightweight but highly efficient and effective filtration media.*

*It is produced to exceed the 95% filtration requirements, while minimizing the pressure drop to ensure ease of breathability. And it's manufactured in our US plant using equipment from Reifenhäuser Reicofil, the world's most advanced meltblown filter media production system.*



# Why Designed in the USA Matters

With access to the local US workforce as test subjects and local US component sources for rapid iteration development, we were able to get the details of the **All-Day-Comfort™ System** right

We tested and rejected several aluminum nose clip candidates until we found one with the best combination of strength, durability and flexibility that retains its shape and position over long periods to provide a **secure custom seal and to help reduce eyeglass fogging**

Internal high-sealing, slow-recovery viscoelastic memory nose foam for a **secure but comfortable seal** that provides a better fit around the unique contours of the nose and upper cheeks without excessive pressure on the face and skin

A **durable outer layer** protects the filtering layers from potential damage as well as filtering out larger particles

**Incredibly lightweight** (half the weight of others) but highly efficient and effective proprietary middle melt blown filtration layers made in our US plant are **cooler and easier to breathe through**, and make the Protex™ N95 lighter and more comfortable

**Ultrasonically welded long-force-curve** head straps without staples are designed to produce an optimum fit and seal across a wide range of head sizes without the need for user-adjusted straps that can negatively impact fit if improperly adjusted

A **uniquely soft but strong** inner layer has a precisely thermoformed and soft edge flange designed for a **superior and comfortable fit** that also reduces abrasiveness on the skin



## The All-Day-Comfort™ System Gives You...

**Less air resistance** – our proprietary Shawmut MB™ filtering technology exceeds N95 standards while allowing for lighter filter media weight (50% lighter than competition) and higher breathability

**Cooler and fresher air** inside the cup reduces humidity buildup

**Less pressure on the face** for all-day-comfort and wear, Protex™ N95 wearers feel the overall lightness of the N95 and the softness of the foam with less eyeglass fogging when shaped around the bridge of the nose properly



# Delta-P

**Pressure Drop**  
**< 10 mm H<sub>2</sub>O**



# 3°

**3°F cooler**  
**than others**



*The masks I ordered arrived today and **THEY ARE PERFECT!** Comfortable snug fit, good breathability, a relief to know that it's possible to get quality manufactured goods from the U.S. Thank you. I'll let friends know.*



# We Fit the Widest Range of Faces, Comfortably



Tall and Narrow



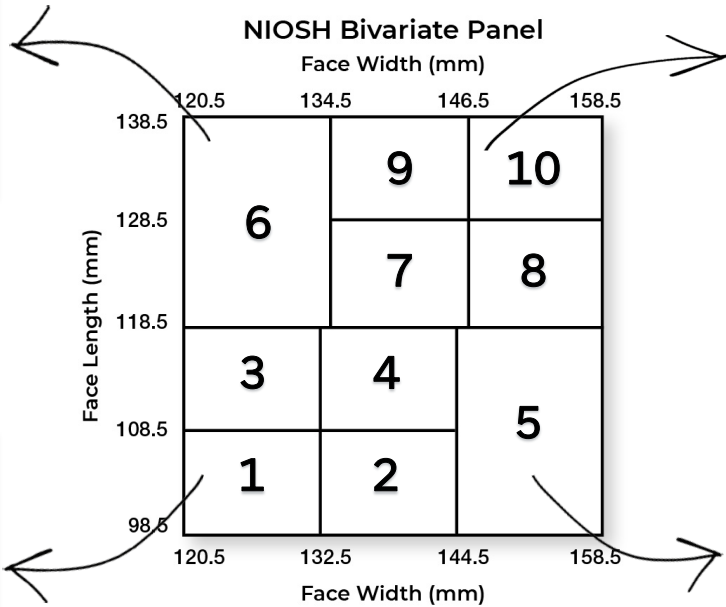
Short and Narrow



Tall and Wide



Short and Wide



Description	Definition	Diagram
Bizygomatic Breadth	Maximum horizontal breadth of the face as measured with a spreading caliper between the zygomatic arches.	
Menton-Sellion Length	Distance as measured with a sliding caliper in the midsagittal plane between the menton landmark and the sellion landmark.	

ASTM  
Resource Page



## The Importance of Fit and Seal

The [ASTM F3407](#) Respirator Fit Capability (RFC) Standard tests the capability of an N95 to fit a wide range of faces in the US workforce.

The RFC Standard tests are conducted in a calibrated laboratory environment with digital measurement instruments. The test procedures measure a respirator's Fit Factor score on a minimum of 25 human subjects with various face sizes using the NIOSH Bivariate Panel representing the U.S. civilian workforce.

To pass, a respirator must get a passing Fit Factor score\* of 100 or more on more than 50% of the test subjects.

The Shawmut Protex™ Fit Capability score\*\* was close to 100%, far exceeding the 50% minimum.

Respirators passing the RFC Standard test method are expected to have better fitting characteristics.

We listened to the experts and created an N95 that meets and exceeds full panel testing while offering the most comfort.

\*Fit Factor score = Ratio of airborne particle count outside the respirator vs inside the respirator during a fit test procedure. NIOSH N95 approval calls for respirator samples to exceed a Fit Factor score of 100 or above.

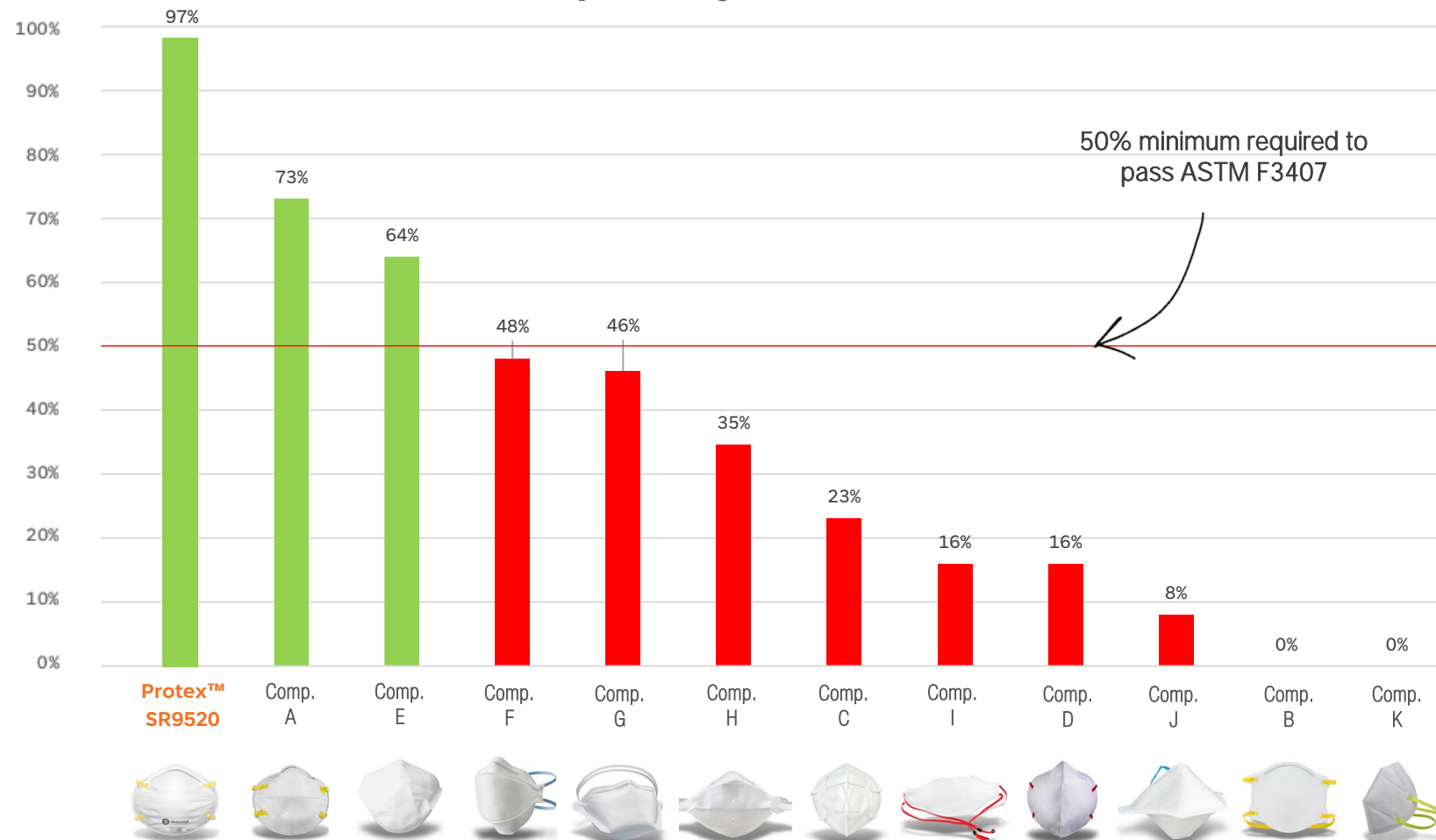
\*\*Fit Capability score = Percent of test panel subjects during ASTM RFC testing that achieved a Fit Factor Score above 100.



Using the ASTM F3407 RFC Standard, we tested our Protex™ N95s as well as several leading and popular competitors.

*To pass, a respirator must get a passing Fit Factor score of 100 or more on more than 50% of the test subjects.*

## Fit Capability Scores



- Fit capability is essential to understanding respirator performance, but many N95's don't fit well
- To address this issue NIOSH is looking at how to apply the ASTM F3407 standard to N95s
- Fit performance varied dramatically across individual N95 models
- Most N95s tested did not meet the fit capability standard which calls for a minimum fit capability of 50%
- The Shawmut Protex™ SR9520 Fit Capability score was an unprecedented 97% in our testing
- Protex N95s are the by far and away the best fitting N95s we tested

Great Fit Comes in Sizes

FITS THE  
WIDEST  
RANGE OF  
FACE  
SHAPES AND  
SIZES

Shawmut's N95 respirators are available in Medium/Large and Small sizes to fit the widest range of face shapes and sizes.

SKILLFULLY  
ENGINEERED  
FOR  
SMALLER  
FACES

The Small size Protex™ N95 respirator was skillfully engineered with fit and comfort in mind for smaller faces. It was made with the same careful design as the M/L N95, but with a smaller form factor to fit smaller faces.

ADDRESSES  
THE SIZE  
GAP IN THE  
INDUSTRY

Small size N95 addresses the significant size gap in the industry, leaving millions struggling with poor-fitting N95s – or completely unprotected.



Model SR9520: Size M/L



Model SR9520S: Size Small



## Maximum Protection

- Made in the USA
- NIOSH Approved TC-84A-9295
- Meets ASTM F3407-20 Standard
- Protex™ All-Day-Comfort™ System
  - Yellow ultrasonically welded head straps, designed with a consistently long force curve to fit a wide range of faces, for a secure fit and staple-free worry, provide our best seal for maximum protection
  - Viscoelastic memory nose foam offers the utmost comfort to your nose bridge and skin while retaining a secure seal all day
  - In-house proprietary filtration layers that are half the weight of others reduce the overall weight of the N95 for all-day comfort
  - Engineered flexible flanged edge for secure facial seal with softer welded seam for a comfortable feel and fit with less pressure on your face





# Shawmut Protex™ N95 Respirators

More Than Just Create • Innovate

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