3M Science. Applied to Life.™

Take worker health and safety to the next level.

3M™ Personal Protective Solutions for the Mining Industry



Table of contents

Introduction: 3M History 3

Health and Safety

3M science and PPE 5

Building a strong health and safety culture 6

Common mining risks that PPE has the potential to mitigate 6

The impacts of everyday work hazards 7

Worker health and safety throughout the mining process 8

3M products to address workplace hazards 10

The importance of wear-time 11

3M Personal Protective Equipment

What does integrated protection look like? 12

Select 3M PPE solutions 13

Respiratory protection solutions 14

Welding protection solutions 15

Protective communication and hearing protection solutions 16

Intrinsically safe communication solutions 17

Intrinsically safe Powered Air Purifying Respirator solutions 18

What does personal protection look like? 19

Respiratory protection solutions 20

Eye protection solutions 21

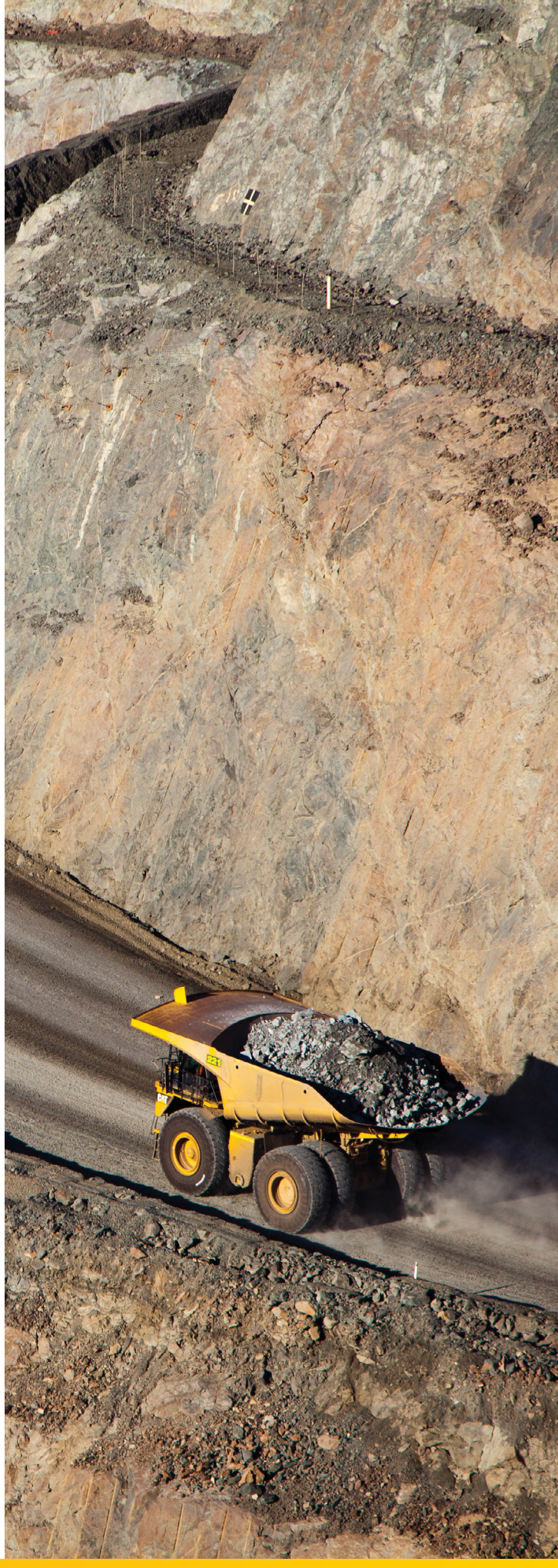
Head and Face protection solutions 22

Fall protection solutions 23

Self-Contained Breathing Apparatus (SCBA) protection solutions 24

Validate your protection 25

Unknown source Reusable Respirator (Product Notice in Philippines) 26



For 50+ years, the safety behind your success

3M helps protect workers in a changing world. Across diverse industries and applications, our technology, knowledge and energy drive innovative solutions. Our goal is to help protect you from hazards in the work environment, so you can focus on the job at hand.

Over 50 years ago, 3M introduced the first U.S. Government-approved 3M filtering facepiece respirator, and the 3M™ E-A-R™ Classic Ear Plug.

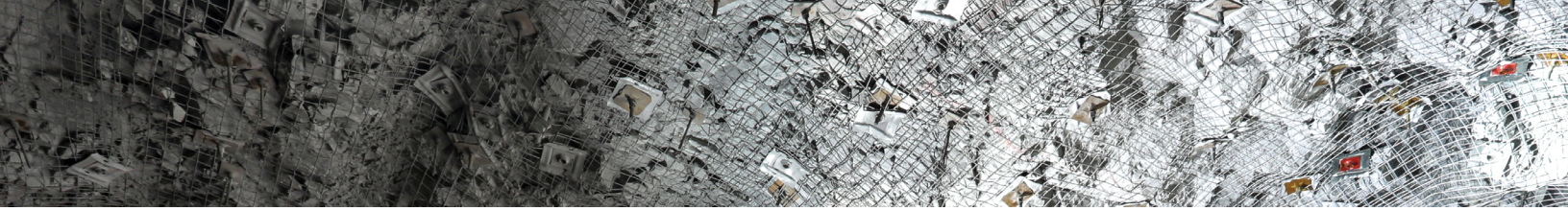
Today, 3M remains dedicated to developing Personal Protective Equipment (PPE) to help get your workers back home: we apply science to life, helping protect workers' health and safety on the job, for employees today and tomorrow. Learn more about the history of our advancements and where we are going next.

safety50 website

Stay up to date with our latest safety news in mining industry.

PH website

50+ Years of Health and Safety Leadership



Ties that run deep

3M and the mining industry

When 3M was established in 1902, our founders had a simple goal: to mine for corundum, a mineral ideal for making sandpaper and grinding wheels. However, they soon discovered what they believed was corundum was actually low-grade anorthosite, which was unsuitable for making abrasives.

This setback could have ended our fledgling company, but our founders used it as an opportunity to develop the culture of innovation and collaboration that guides our company today.

This spirit of innovation has shaped the development of our catalogue of personal protective solutions—and our roots in the mining industry has given us an understanding of the unique challenges your workers face. We are dedicated to serving you and share your commitment to improving worker health and safety.



We have safety down to a science.

Your workers deserve PPE that works as hard as they do, and that enables them to do their jobs with confidence. And because **PPE is the last barrier of protection, and it is only effective when worn correctly every time it is required.,** it should also be comfortable and easy to use.

With a comprehensive health and safety program enhanced by PPE and support resources from 3M, you can help your teams stay safe. With our broad portfolio of solutions, industry knowledge and support resources, we know what it takes to help you select PPE appropriate for the needs of your mine site.

Why work with 3M?

- Innovative technologies
- Industry knowledge and hazard awareness
- Regulatory and standards knowledge
- PPE standardisation and improvement programmes
- Training centers and online education courses
- Authorised service and repair centres
- Broad channel/reseller network

3M Personal Protective Solutions

- Confined space entry, exit and rescue solutions
- Comprehensive fall protection solutions
- Disposable, reusable and powered air purifying respiratory protection
- Head, face, eye and skin protection
- Welding safety solutions
- Hearing protection and communication solutions



Building a strong health and safety culture

As critical as the minerals you mine

Industries around the world depend on access to mineral resources for raw materials and energy, and the mining industry is at the forefront of this critical work.

As the industry's profile rises, it is more important than ever to demonstrate a commitment to responsible mining practices, including building a strong health and safety culture at every mine site and processing facility. Workers can be exposed to hazards every day. Some of these can impact a worker immediately and others lead to chronic conditions that may not impact workers until their career in the mine is over. Therefore, the steps taken to protect them today will have a positive impact far into the future.

Education and proper PPE use are two of the fundamental ways to help protect workers against the hazards they face at every step of the mining process. 3M offers PPE designed for both performance and comfort – all from a global PPE manufacturer with product solutions including head, eye, face, respiratory, hearing and fall protection.



Common risks encountered in mining that can have the potential to be mitigated with PPE use:

- Particulates (dust, mist and fumes)
- Noise (protection and communication)
- Flying objects (liquids, particles)
- Radiant heat
- Vapours and gases
- Oxygen deficiency
- Skin exposure
- Work in confined spaces
- Work at heights
- Sharp edges
- Falling objects
- Contact with electricity
- Impact against mobile and immobile objects

The impacts of everyday work hazards

Mine workers that are unprotected from the hazards encountered today, can often lead to significant long-term injuries and illness. Understanding the near- and long-term risks of common mining tasks—and how the proper use of PPE can help reduce them—is essential to keeping workers safe today and tomorrow.



Respiratory Hazards

- Some fatal occupational respiratory diseases can take up to **20 years or longer** to develop. As consequences of breathing hazardous substances are often not immediate.

Silicosis: a devastating and life altering illness

- **USA:** more than **23%** of reported silicosis deaths attributable to mining.[1]
- **Latin America:** silicosis prevalence rate of **37%** among miners, and up to **50%** among miners over age 50.[2]
- **Australia:** It is estimated that one in five people who have been exposed for more than three years would develop silicosis.[3]
- **Worldwide:** one of the most common work-related injuries is pneumoconiosis, specifically caused by exposure to Respirable Crystalline Silica (RCS)[4]

1. NIOSH. 2022. Mining Topic: Respiratory Diseases. (www.cdc.gov/niosh/mining/topics/respiratorydiseases.html)
2. CODELCO. Fight against silicosis: A battle that Codelco is determined to win. (www.codelco.com/sustentabilidad/publicaciones/informe-sustentable/una-batalla-que-codelco-esta-decidida-a-ganar)
3. NCBI. 2021. Early Detection Methods for Silicosis in Australia and Internationally. (www.ncbi.nlm.nih.gov/pmc/articles/PMC8345652)
4. NCBI. 2010. Silicosis due to Denim Sandblasting in Young People: MDCT Findings. (pubmed.ncbi.nlm.nih.gov/25610113)



Hearing Loss

- More than **120 million** workers in the world are exposed to noise levels above 85 dB. (WHO)
- The annual cost of unprevented hearing loss is in the range of **$750–790 billion** globally. (WHO, 2017)
- Noise-induced hearing loss is one of the most common occupational injuries, and the second most self-reported occupational disorder. (NIOSH)

Occupational hearing loss: is permanent and 100% preventable

- **AUS:** An estimated one million workers in Australia may be exposed to dangerous levels of noise at work. [1]
- **AUS:** Mining is one of the main industries in Australia with the highest incidence rates of occupational noise-induced hearing loss (ONIHL). [1]
- **USA:** Estimated 90% of miners have developed hearing impairment by age 50. [2]
- **Peru: 48.4%** of workers suffer some illness due to noise exposure.[3]

1. Australian Pubilc Health c02_pdf.pdf (aph.gov.au)
2. Kan Sun and A. S. Azman. Evaluating hearing loss risks in the mining industry through MSHA citations. J. Occup Environ Hyg. 2018 Mar; 15(3):246-262.
3. Sub-bulletin Feb. 28, 2019. Energy & Mines Ministry. Government of Peru.



Work at Heights

- **68%** of accidents occur at heights of less than 2 metre. This occurs because, at low height, we have a lower perception of risk.

UK HSE

- Falls are the **second leading** cause of unintentional injury and death worldwide.

WHO

Falls from height: can cause disabling injury or death

- **Chile:** falls are the **second leading** cause of death in the mining industry.[1]
- **USA:** Falls are the **second leading** cause of workplace injuries in 2020, responsible for **18.2%** of all injuries.[2]

1. www.suseso.cl/607/articles-590749_archivo_01.pdf
2. archive.cdc.gov/www_cdc_gov/niosh/injury/fastfacts.html

Worker health and safety throughout

1 Mine planning and development

Mine planning and development is the process of determining the most efficient and cost-effective way to extract minerals from a deposit while considering various factors such as geological characteristics, economic feasibility, environmental considerations, and safety requirements.

Key safety considerations:

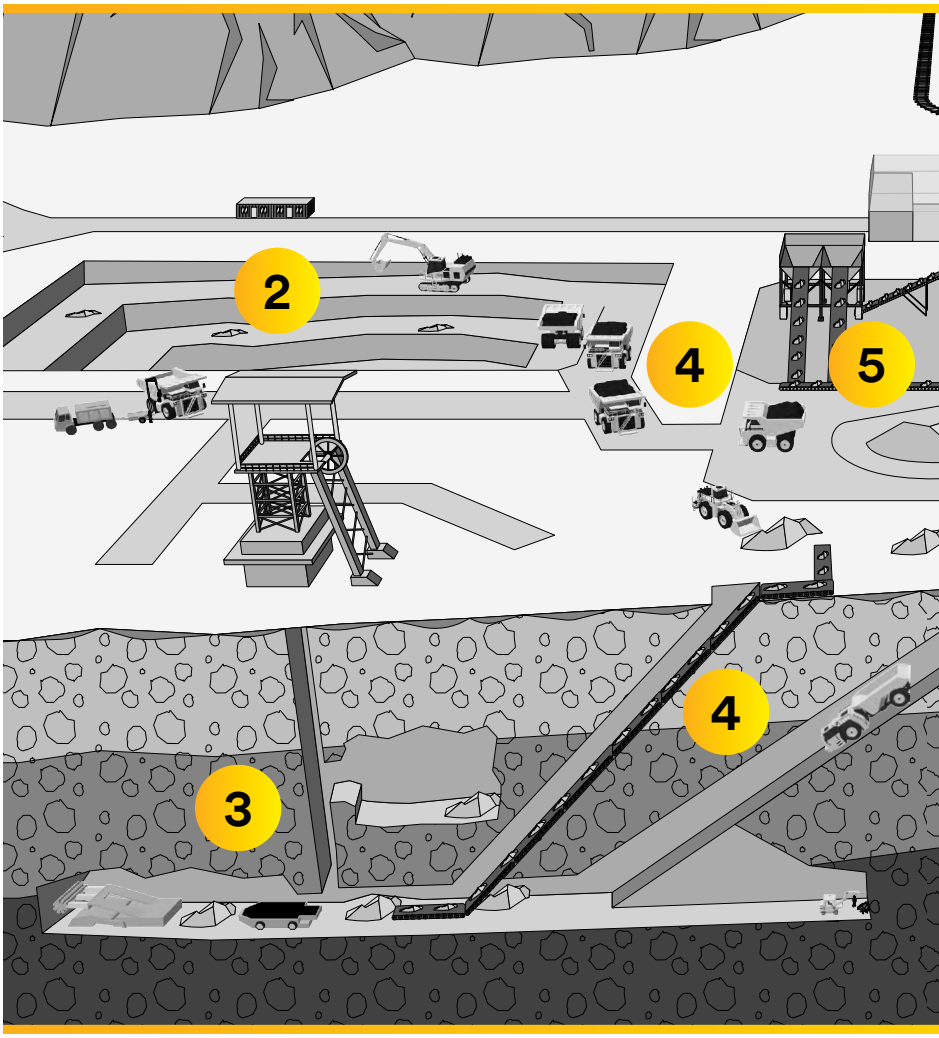
- Mitigating dust and respiratory hazards from drilling and blasting
- Protecting workers by providing protection from hazardous noise and improving communication while working around loud heavy machinery and equipment
- Managing eye and face hazards from chemicals and debris

2 Open pit extraction (surface)

Open-pit mining, also known as opencast mining, is a surface mining method used to extract minerals or ore deposits that are located near the surface of the Earth. It involves the excavation of an open pit or burrow in the ground, which allows access to the desired minerals or materials.

Key safety considerations:

- Ensuring the stability of pit walls to prevent rockfalls and collapses
- Implementing proper maintenance and training programs for vehicles and equipment
- Managing traffic effectively to avoid collisions
- Providing fall protection solutions for tasks at heights
- Implementing dust control measures to protect respiratory health



3 Underground mining

Underground mining is a mining method used to extract minerals or ore deposits that are located deep beneath the Earth's surface. Unlike open-pit mining, which extracts minerals from an open pit or borrow, underground mining involves accessing the mineral resources by creating tunnels and shafts.

Key safety considerations:

- Safeguarding workers' hearing in noisy environments
- Mitigating exposure to hazardous gases, heat stress, fogging and the risk of rockfalls and cave-ins (intrinsically safe PPE may be required in potentially explosive environments)
- Implementing rock support systems, cementation, clear communication, gas monitoring and robust safety training programmes

4 Internal transportation

Mining internal transportation refers to the movement of materials, equipment, and personnel within a mining operation. It involves the logistics and infrastructure required to transport various resources and personnel efficiently and safely within the mining site. Efficient and safe internal transportation systems are crucial for optimising mining operations, ensuring timely delivery of materials, maintaining productivity, and minimising downtime.

Key safety considerations:

- Ensuring proper planning, maintenance and adherence to safety protocols to ensure the smooth and safe movement of materials and personnel

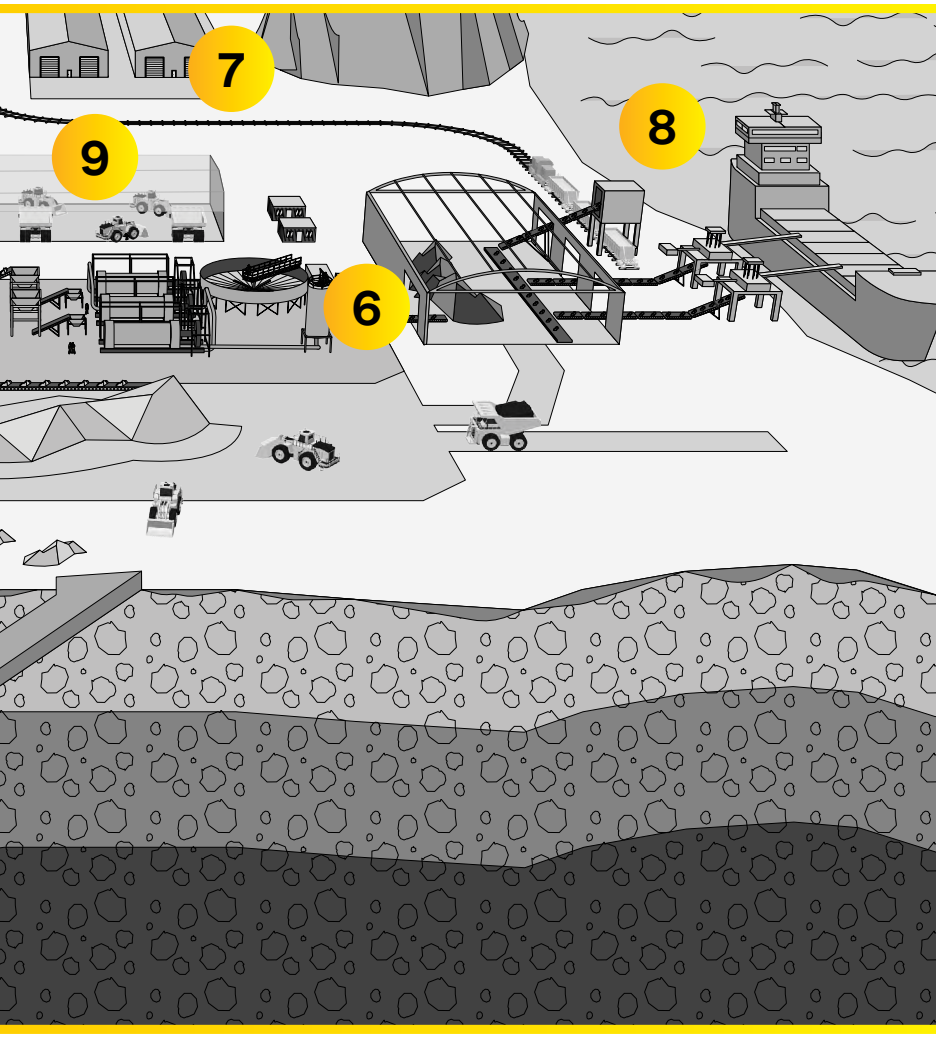
5 Crushing and grinding

Crushing and grinding are essential processes in the mineral processing industry, aimed at reducing the size of ore or rock particles to facilitate the extraction of valuable minerals. These processes involve breaking down the ore or rock into smaller, more manageable sizes, which can then be further processed or concentrated.

Key safety considerations:

- Protecting workers from exposure to noise, falling objects, electrical hazards, dust and silica
- Reducing the risk of slips, trips and falls
- Managing ergonomic risks related to manual handling and labour

the entire mining process



6 Ore separation

Mining ore separation, also known as mineral processing or beneficiation, refers to the process of separating valuable minerals from the surrounding gangue (unwanted material) in an ore deposit. The goal is to extract and concentrate the valuable minerals, such as metals or industrial minerals, for further use or refining.

Key safety considerations:

- Protecting workers from dust and particulate hazards during crushing and grinding operations
- Managing risks associated with moving machinery and equipment
- Reducing the risk of slips, trips and falls
- Protecting against heat and chemical exposure

7 Refining (Smelting, Roasting & Electrowinning)

Ore refining is the last process before commercialisation. The process finishes with ore refined that then will be used to manufacture other things, as well as raw materials for other industries, for example:

- Aluminium (cans, airplane, furniture, etc.)
- Copper (electrical cables, coins, jewellers, musical instruments, etc.)
- Gold (coins, jewellers)
- Iron (steel manufacture, pipes, machines, with Ni+Cr+Mo stainless, etc.)
- Potash (agriculture fertiliser)
- Lithium (ion batteries)

Several different refining processes could take place during mining process, but most common are smelting, roasting, acid dissolution and electrowinning (electro deposition of metals)

8 Outbound storage and transportation

Mining outbound storage and transportation refers to the processes involved in storing and transporting mined materials or products from the mining site to their intended destinations. Once minerals or ore have been extracted and processed, they need to be stored and transported efficiently and safely to reach customers, processing facilities, or distribution centers.

Key safety considerations:

- Minimising the risk of material handling injuries and vehicle accidents
- Managing dust and particulate hazards
- Reducing fire and explosion risks
- Preventing spillage and environmental contamination
- Ensuring site security

9 Mining maintenance

Mining maintenance refers to the activities and processes carried out to ensure the proper functioning, reliability, and longevity of mining equipment, machinery, infrastructure, and facilities. It involves regular inspections, repairs, servicing, and upkeep of mining assets to prevent breakdowns, optimise performance, and minimise downtime. Maintenance tasks can range from routine preventive maintenance, such as lubrication and filter replacement, to more extensive repairs or overhauls of equipment components. Maintenance operations could often be the largest consumers of PPE. Crushing, grinding, separation, refining and pelletising processes are very hard on equipment and the equipment requires frequent maintenance.

Take on hazards for a safe and healthy shift

When the health and safety of mine workers is at stake, you want PPE that you can trust – and that your workers will feel good about wearing. With 3M™ Personal Protective Solutions, you can help ensure your workers are protected.



Respiratory Protection

From dust generated during ore extraction, separation and transportation to the chemicals used in processing and refining, mine workers are exposed to potential respiratory hazards at all steps of the mining process.

- 3M™ Disposable Respirators and Reusable Respirators
- 3M™ Versaflo™ Powered Air Purifying Respirators (PAPR)



Face and Eye Protection

Dust, particles and flying objects present a risk of eye injury during ore extraction, transportation and processing. Refining environments present additional risks such as chemical exposures, radiant heat and infra-red light.

- 3M™ SecureFit™ Protective Eyewear with Scotchgard™
- 3M™ Protective Faceshields



Fall Protection

Working at heights is one of the most common causes of injury for mine workers around the world.

- 3M™ DBI-SALA® Fall Protection



Emergency Breathing Apparatus

Mine workers may encounter low-oxygen environments in confined spaces or as the result of accidents such as underground fires.

- 3M™ Scott™ SCBA, 3M™ Scott™ Ska-Pak and 3M™ Scott™ ELSA™ for emergency use



Hearing Protection and Communication Solutions

Noise mitigation is a significant concern on mine sites, not only to help protect workers' hearing but to facilitate clear communication.

- 3M™ Earplugs
- 3M™ Earmuffs
- 3M™ PELTOR™ Headsets



Respiratory and Communication Solutions for explosive environment

- 3M™ TR-800 Versaflo™ Kit in intrinsically safe PAPRs
- 3M™ PELTOR™ WS LiteCom Pro III, IS (Intrinsically Safe)



Head Protection

Falling objects and low clearances can put mine workers at risk of head injury.

- 3M™ SecureFit™ Hard Hats



Confined Space Entry, Exit and Rescue

Many steps of the mining process require workers to access and perform their roles in confined spaces, sometimes for extended periods of time.

- 3M™ DBI-SALA® Confined Space Solutions
- 3M™ Scott™ SCBA and Supplied Air Respirators



Welding Safety

Welding can expose workers to welding fumes and UV radiation which can put them at risk for eye and respiratory injury.

- 3M™ Speedglas™ Welding Helmets
- 3M™ Adflo™ Powered Air Purifying Respirator Systems

Wear time:
Get the most out of your protective equipment

PPE can only do its job when it is worn properly, 100% of the time.

What does it mean?

Wear time is the percentage of time a worker actually wears their required PPE vs. the amount of time they should wear it to achieve the *Required Minimum Protection Factors (RMPF)* or *Assigned Protection Factor (APF).* Used to help select respiratory PPE, APF assumes that workers use their required PPE properly 100% of the time they may be exposed while on the job. *Effective Protection Factor (EPF)* is the actual protection rate factor according to the wear time for each worker. Refer to AS/NZS 1715 for RMPF of different respirator combinations

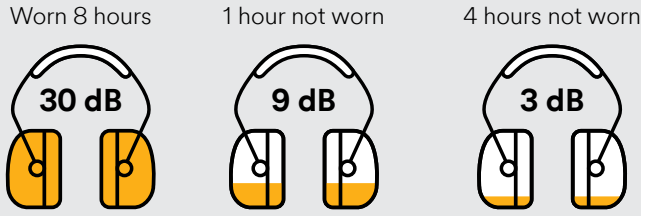
Impact on respiratory protection EPF

Respirator Type	APF	Percent of Time Respirator Worn & Associated EPF		
		100%	95%	80%
 Half-face respirator	10	10	7	3.6
 Full-face respirator	50	50	14.5	4.6
 Powered & Supplied Air	1000	1000	20	5
 SCBA	10,000	10,000	20	5

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

Impact on hearing protection

Effective protection drops when hearing protectors are not worn.



Even when noise seems to be at a reasonable level, noise above 85 dBA can still lead to long-term damage. Noise-induced hearing loss is caused by the damage and eventual death of sensory cells in your ears, called hair cells. Unlike some other cells, human ear hair cells never grow back.[1]

[1] Based on LAeq,8h, 95 dBA exposure and using the Recommended Workplace Exposure Limit (WEL) of 85 dBA and 3 dB exchange rate.

Potential reasons why workers may not wear their PPE

- **Discomfort:** heat, humidity, lack of breathability
- **Performance:** fogging eyewear, inability to communicate clearly
- **Compatibility:** eye protection worn under earmuffs may impact hearing protection
- **Communication:** workers may remove PPE to communicate

Potential result: **lower wear time** and negative impact on worker health and safety.

The potential impact of low wear time

- Increased instances of occupational illness, e.g. silicosis/pneumoconiosis
- Increased instances of noise-induced hearing loss
- Increase in workplace accident rates
- Increase in Lifetime Injury Frequency Rate (LTIFR)
- Increase in worker fatalities
- Negative impact on welfare of workers and their communities
- Negative impact on business reputation
- Negative impact on Total Cost of Operation (TCO)

What can improved wear time do for you?

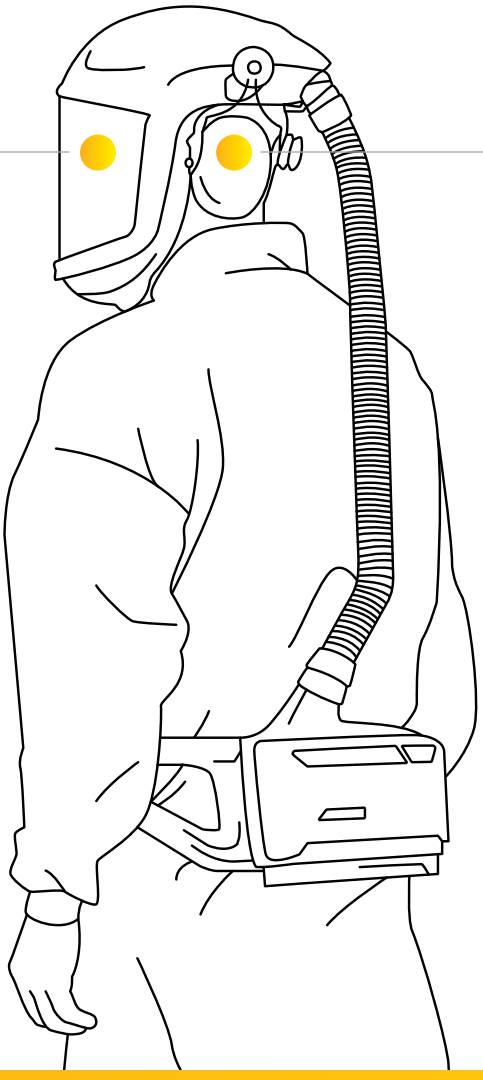
- Maximise Effective Protection Factor (EPF)
- Reduce time of exposure
- Reduce probability of accidents and occupational diseases
- Improve Lifetime Injury Frequency Rate (LTIFR)
- Improve health and social welfare of mining communities

Three keys to improving wear time

- Fit: select PPE optimised for wearability, validate with fit testing
- Communication: make it easier to speak and hear without removing PPE
- Compatibility: choose integrated and compatible PPE designed to be worn together

What does integrated protection look like?

3M™ Versaflo™ PAPR systems combine respiratory protection while unifying the other elements of select individual protection for hearing, eyes, face and head – all in a single system. This next-level PPE solution in turn may help to increase wear time, thanks to a combination of comfort, compatibility, communication, breathability, and fit.



3M™ Versaflo™ Powered Air Purifying Respirator (PAPR)*

- Integrated face and head protection for certain headgear
- Continuous airflow for breathability and comfort
- Accommodates limited facial hair
- Integrated heat protection accessories to protect against sparks, splashes and radiant heat during ore refining
- Available integrated head lamp accessories for underground mining and maintenance
- Can be combined with 3M™ Speedglas™ Welding Helmets

2-way radio and environmental listening

Mining processes such as crushing, electrowinning and smelting require both hearing and respiratory protection. In these high-noise environments, workers might remove their respiratory protection in order to communicate clearly – putting themselves at risk.

3M™ PELTOR™ Protective Communications*

- Enables clear communication without removing any PPE
- Environmental microphones for level-dependent protection
- Ambient listening allows workers to hear alarms and vehicles

*Not MSHA approved when intrinsically-safe approvals are required

Select 3M PPE safety solutions

Integrate with 3M™ Versaflo™ Powered Air Purifying Respirator Heavy Industry Kit

3M™ Versaflo™ TR Series Ready-to-use Kits



3M™ Versaflo™ Heavy Industry PAPR Kit TR-600-HIK



3M™ Versaflo™ Powered Air Purifying Respirator Heavy Industry Kit TR-800-HIK

Radiant heat resistant covers



3M™ Versaflo™ Radiant Heat Cover M-973N (for M-307) M-975N (for M-407)
M-967 not included



3M™ Versaflo™ Gold Coated Tinted Over-Visor with UV/IR M-967N + High heat visor holder M961

Accessories



BT-30 Heavy Duty Hose



3M™ Versaflo™ Heavy Duty Belt TR-626



3M™ Versaflo™ Easy Clean Backpack TR-927



3M™ Versaflo™ Earmuff attachment for M-Series Headgear Z3AF/2

Available hearing and communication solutions



3M™ PELTOR™ Electronic Earplug, EEP-100



3M™ PELTOR™ WS™ ProTac XPI Headset Headband MT15H7AWS6



3M™ PELTOR™ Optime™ 95 Earmuffs H6A/V, Over-the-Head



3M™ PELTOR™ Helmet Attached X1P3E

Respiratory Protection Solutions

When tasks may expose workers to airborne hazards such as dust, mist, fumes, and chemicals, dependable respiratory protection may be required. 3M offers a broad portfolio of respiratory solutions – reusable and disposable respirators, powered air purifying respirators (PAPRs) – that help your workers breathe easy.



TR-600 HIK



TR-800 HIK

Product #:	Description:
TR-600 HIK	The kit includes: M-307 Respiratory Hard Hat Assembly with Premium Visor and Faceseal, TR-602N PAPR Unit, TR-632 High Capacity Battery, BT-30 Length Adjusting Breathing Tube, TR-626 High Durability Belt, TR-6530N OV/AG/HE Cartridge, TR-6500 Filter Cover, TR-641N Single Station Battery Charger Kit, TR-971 Airflow Indicator, BT-926 High Temperature Breathing Tube Cover, TR-6600 Prefilter (x2), TR-662 Spark Arrestor (x2).
TR-800 HIK	The Kit includes: M-307 Respiratory Hard Hat Assembly with Premium Visor and Faceseal, Intrinsically Safe TR-802N PAPR Unit, TR-830 Intrinsically Safe Battery, TR-838 Battery Attachment Tool, BT-30 Length Adjusting Breathing Tube, TR-626 High Durability Belt, TR-6530N OV/AG/HE Cartridge, TR-6500 Filter Cover, TR-641N Single Station Battery Charger Kit, TR-971 Airflow Indicator, BT-926 High Temperature Breathing Tube Cover, TR-6600 Prefilter (x2), TR-662 Spark Arrestor (x2) and TR-653 Storage and Cleaning Kit.



M-307 with M-940

3M™ Versaflo™ M-Series Headgear

Product #:	Description:
M-307 with M-940	M-307CAP M-307 helmet with M-940 Cap lamp bracket kit
M-307	Respiratory hard hat with visor and faceseal
M-407	Respiratory helmet with visor and flame resistant shroud
M-940	Mining lamp bracket

3M™ Versaflo™ M-Series Headgear is offered in multiple configurations to suit your environment, workforce, and potential airborne contaminants. Whether your environment calls for a faceshield or hard hat, this safety gear is easily connected to approved breathing tubes, and is approved for use in many of supplied air and powered air configurations. The 3M™ Versaflo™ Mining Lamp Bracket, M-940, is designed to securely hold a range of fixed and adjustable angle mining lamps.



M-973



M-975



M-961

M-967



BT-30



TR-681

3M™ Radiant Heat Accessories for 3M™ Versaflo™ Series Helmets M-307/M-407

Product #:	Description:
M-973	Radiant heat cover for M-307
M-975	Radiant heat cover for M-407
M-961	Over-visor frame
M-967	Gold coated tinted over-visor – UV/IR protection
BT-40	BT-40 Heavy Duty Rubber Breathing Tube
TR-681	Disposable PAPR cover for TR-600

3M™ Versaflo™ Radiant Heat Accessories are designed as a modular system, so you can customise coverage levels for tough environments. Intended for use on select M-Series helmets, which are compatible with a wide variety of 3M air sources.

Welding Protection Solutions

Help protect your workers from welding fumes and metal particles with 3M™ Disposable and Reusable Respirator Solutions. These welding helmets and shields help protect workers' vision, while auto-darkening filter attachments help them see the weld puddle in greater detail. What's more, many 3M welding helmets can be combined with respiratory solutions (including PAPR assemblies) for respiratory protection.



3M™ Secure Click™ Half Facepiece Reusable Respirator with Speaking Diaphragm HF-802SD

Product #: HF-802SD

Designed with smart and intuitive features, the new 3M™ Secure Click™ Half Facepiece Reusable Respirator is simple, comfortable and reliable.

The 3M™ Secure Click™ HF-800SD Series Half Facepiece Reusable Respirator helps protect against particulates and a wide variety of gases and vapours when used with approved 3M™ Secure Click™ cartridges and filters. Available in three sizes with speaking diaphragm to help provide easier communication while you work.



3M™ Half Facepiece Reusable Respirator 7502 with 3M™ Particulate Filter 7093, P100

Product #: 7093 with 7502

The 3M™ 7500 Series Reusable Half Face Mask Respirator uses advanced silicone material to help provide comfortable and durable respiratory protection. The 3M™ Cool Flow™ Valve helps make breathing easier and can reduces heat and moisture build-up for cool, dry comfort.

The 3M™ Particulate Filter 7093 has exceptional 99.97% filter efficiency meets NIOSH P100-series test criteria.

When properly fitted together, the respirator helps provide respiratory protection in a a variety of applications including welding, brazing, torch cutting, metal pouring, soldering, and exposure to lead, asbestos, cadmium, arsenic, and MDA for concentrations up to 10 times the Permissible Exposure Limit (PEL) .



3M™ Particulate Respirator for Welding 8515, N95

Product #: 8515

The 3M™ Particulate Welding Respirator 8515 features an N95 filter that helps provide respiratory protection for applications where metal fumes may be present. This respirator features a 3M™ Cool Flow™ Valve, braided headband, and adjustable M-noseclip for added comfort. It is Flame resistant per modified ASTM D2859 (not a substitute for a faceshield) and an economical option for welders.

Protective Communication and Hearing Protection Solutions

Noise – sources like tools, nearby process equipment and vehicles – not only puts mine workers' hearing at risk but can also be a major distraction during critical tasks. Help keep the volume down with hearing protection solutions from 3M, which include earplugs (disposable, reusable and electronic), earmuffs and headsets with integrated communications to help keep your workers protected and focused.

Earplugs

Test compatible with 3M™ E-A-Rfit™ Validation System.



3M™ E-A-R™ UltraFit™ Earplugs

3M™ E-A-Rsoft™ Yellow Neons™ Earplugs



3M™ 1100/1110 Earplugs

Product:	Description:
3M™ E-A-R™ UltraFit™	Premolded and triple flange, there is no need to roll the earplugs before fitting so the tips stay clean even if hands are dirty. Noise reduction rating (NRR) 25 dB CSA Class AL.
3M™ E-A-Rsoft™ Yellow Neons™	Seals the earcanal with soft, slow-recovery foam for excellent noise reduction and comfort. Noise reduction rating (NRR) 33 dB CSA Class AL.
3M™ 1100/1110	Feature soft, hypoallergenic foam and a tapered design to fit comfortably in the ear canal. Smooth, dirt-resistant surface for hygiene. Noise Reduction Rating (NRR)*: 29 dB. CSA Class AL.



3M™ PELTOR™ Electronic Earplug, EEP-100

Product #: EEP-100 EU

3M™ PELTOR™ EEP-100 Electronic Earplug helps protect your hearing, and can help improve situational awareness and communications in challenging environments. This kit includes a protective charging case and an assortment of eartips.

Earmuffs and Headsets



3M™ PELTOR™ Earmuff X Series X5P5E

3M™ PELTOR™ X5 Earmuffs to provide very high noise reduction in both standard headband and hard hat-attached models. Despite the larger earcups, the X5 remains relatively lightweight with excellent balance and comfort.



3M™ PELTOR™ X4 Earmuffs X4P51E

3M™ PELTOR™ X4 Earmuffs offer a slim lightweight option. When correctly selected and worn, these products can help to reduce exposure to hazardous levels of noise.



3M™ PELTOR WS™ ProTac XPI Headset Headband MT15H7AWS6

The 3M™ PELTOR™ WS™ ProTac XPI Headset integrates hearing protection, Bluetooth® communication, and a noise-cancelling speech microphone to deliver a wireless, hands-free protective communication solution. Also, the environmental listening technology assists workers to hear environmental sounds in low noise and helps provide protection when it's loud.

Intrinsically Safe Communication Solutions

3M™ PELTOR™ WS™ Litecom Pro III Ex Headset

The 3M™ PELTOR™ WS™ LiteCom Pro III Ex Headset is the next generation protective communication solution. With an integrated, programmable analogue/digital two-way radio, Bluetooth® Multipoint connectivity, noise-cancelling microphone, and level dependent function for ambient listening, the 3M™ PELTOR™ WS™ LiteCom Pro III Ex Headset not only helps protect you against hazardous noise but also makes it easy to communicate in noisy environments and helps you maintain situational awareness. Application: The 3M™ PELTOR™ WS™ LiteCom Pro III Ex Headset offers wireless communication in noisy environments. Can be used for work in Oil & Gas Industry, Mining and where intrinsic safety products are required. Approved for use in potentially explosive environments in accordance with ATEX/IS (Intrinsically Safe) standards.



MT73H7P3E4D10EU



MT73H7P3E4D10EU-50

Product #:	Description:
MT73H7F4D10EU-50	3M™ PELTOR™ WS™ LiteCom Pro III Ex Headset, 403-470 MHz, Analog/Digital, Ex, EU version, Headband
MT73H7P3E4D10EU-50	3M™ PELTOR™ WS™ LiteCom Pro III Ex Headset, 403-470 MHz, Analog/Digital, Ex, EU version, Helmet

Features and Benefits:

- Programmable analogue/digital radio (Frequency range: 403 – 470 MHz)
- Bluetooth® multipoint functionality
- Watertight microphone (IP68)
- Level-dependent function for ambient listening
- Push-to-Listen function
- Rechargeable battery, Li-Ion
- Voice operated transmission (VOX)
- External connection jack

Intrinsically Safe Powered Air Purifying Respirator Solutions



3M™ Versaflo™ TR-800 Powered Air Purifying Respirator

- The Versaflo TR-800 features a PAPR blower UL-certified with an intrinsically safe (IS) rating of Division 1: IS Class I, II, III; Division 1 (includes Division 2) Groups C, D, E, F, G; T4, under the most current standard (UL 60079, 6th Edition, 2013). Safety in Mines Testing and Research Station (Simtars) IECEX SIM 19.0013
- LED indicators on the turbo indicate battery charge level, particulate filter loading status and airflow setting
- Audible and visual alarms assure you can hear, see when your PAPR has low-charge or low-flow
- Multi-speed blower functions at altitudes between -610m below sea level and up to 4,880 metres. Battery charges quickly, achieving 90% charge in approximately 3.5 hours.
- Three user selectable flow rates 185, 205 & 225 l/min with a loose fitting headtop/hood OR 135, 150 & 170 l/min in tight fitting facepiece mode.
- Battery comes with built in charge level indicator, a mechanical attachment of battery to help prevent battery removal during use. Approximately 750 full charge/discharge cycles.
- IP54 for TR-800 Blower (while in use). IP67 for TR-800 Blower with TR-653 Cleaning Plugs attached (while cleaning)

Motor/Blower Safety

Mining Atmospheres IEC 60079-11Ex ia IMa
ia - intrinsic safety- safe with rare malfunction
I - Mining group
Ma - Equipment protection level mining

Non-Mining Gas atmospheres (Group II)
EN 60079-11 Ex ia IIB T4 Ga
ia - intrinsic safety for Equipment protection level Ga
IIB - Gas apparatus group
T4 - Max. surface temperature 135°C (-20°C ≤ Ta ≤ 55°C)

Non-Mining Dust atmospheres (Group III)
EN 60079-11 Ex ia IIIC 135°C Da
ia - intrinsic safety for Equipment protection level Da
IIIC - Dust apparatus group
135°C - Max surface temperature 135°C (-20°C ≤ Ta ≤ 55°C)

Range of Accessories Available





3M™ Versaflo™ Powered Air Purifying Respirator Heavy Industry Kit TR-800-HIK

Each complete kit features headgear, a breathing tube, filter/cartridge, battery charger, PAPR unit, battery, battery attachment tool, belt, filter cover, storage and cleaning kit, an airflow indicator, and select other components


TR-6600


TR-6710N


TR-6590N


TR-6350N


TR-6580E


TR-6310E


TR-6530N


M-307


M-307CAP

3M™ Versaflo™ M-300 Series High Impact Helmet

Product #:	Description:
M-307	Versaflo Helmet with coated visor and flame resistant faceseal
M-307CAP	M-307 helmet with M-940 Cap lamp bracket kit attached and reflective tape

The Versaflo M-300 Series High Impact Helmet provides integrated protection from specific respiratory, head, eye and face hazards with optional hearing protection. Two options for different applications:

- M-307 features a flame resistant faceseal for applications where hot particles may be present

TR600 and TR800 Compatible Filters and Prefilters

Product #:	Description:
TR-6600	3M™ Versaflo™ Prefilter to help extend the service life of the particulate (HE) element in filters and cartridges
TR-6710N – Magenta	3M™ Versaflo™ High Efficiency Filter
TR-6590N-Magenta/Green	3M™ Versaflo™ Multi-Gas
TR-6350N – Magenta/Olive	3M™ Versaflo™ Formaldehyde/HE Cartridge
TR-6580E ABE2K1HGP	3M™ Versaflo™ ABE2K1HgP Filter provides respiratory protection against dusts, mists, fumes and other particulate hazards, and a variety of gas and vapour hazards, including organic vapour and acid gas
TR-6310E	3M™ Versaflo™ A2P Filter provides respiratory protection against dusts, mists, fumes and other particulate hazards, and a variety of gas and vapour hazards, including organic vapour, acid gas, inorganic gases, ammonia and mercury vapour
TR-6530N-Magenta/Olive	3M™ Versaflo™ Formaldehyde/HE Cartridge

What does personal protection look like?

In several mining processes, workers are exposed to high levels of noise and respiratory hazards simultaneously. By combining two technology platforms, 3M can help provide both hearing and respiratory protection – enabling clear communication without removal of PPE.

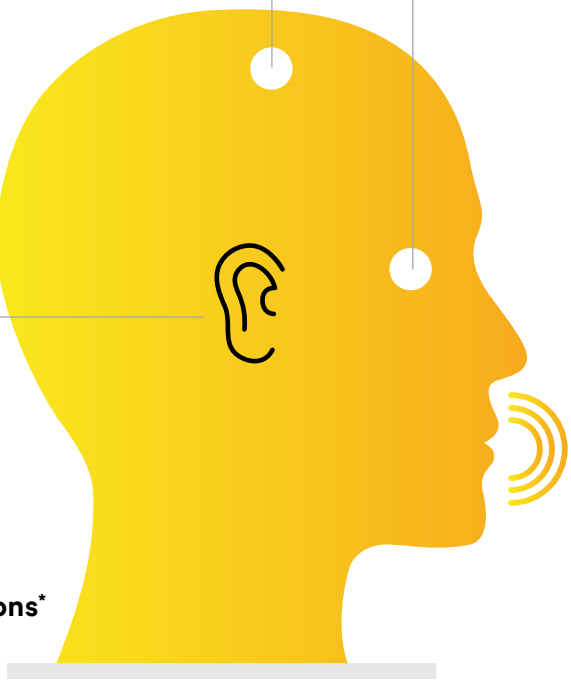
- Crushing and grinding
- Electrowinning
- Vehicle maintenance
- Welding maintenance
- Sampling lab
- Roasting
- Smelting

3M™ SecureFit™ Hard Hats

- Ratchet suspension system featuring patented 3M™ Pressure Diffusion Temple technology that flexes and self-adjusts to the size of the wearer's head, reducing forehead pressure and increasing comfort for all-day wear
- Works well with a variety of 3M™ Protective Earmuffs and other accessories

3M™ SecureFit™ Protective Eyewear

- Anti-fog/anti-scratch coatings available, including 3M™ Scotchgard™ Protector coating
- Temples flex and self-adjust to the size of the wearer's head
- The flat and flexible temple design combines well with 3M™ Protective Earmuffs



3M™ PELTOR™ Protective Communications*

- Protect your hearing in noisy environments and hear ambient sounds below 82dB
- Improve ability to communicate with nearby colleagues, as well as to hear warning alerts, oncoming vehicles, or sounds from machines and processes

3M™ Secure Click™ Half-Face and Full-Face Respirators

- Speaking diaphragm helps provide improved communication while working
- Filters/cartridges designed for easy breathability
- Exhalation valve helps direct exhaled breath and moisture downward
- Secure Click connection helps provide confidence that filters/cartridges are installed properly

*3M™ PELTOR™ WS™ LiteCom PRO III EX Headset is ANZEx Certified.

Respiratory Protection Solutions



3M™ Secure Click™ Half Facepiece Reusable Respirator with Speaking Diaphragm HF-800 Series

Product#:	Description:
HF-801SD	Small with speaking diaphragm for use with secure click filters and cartridges
HF-802SD	Medium speaking diaphragm for use with secure click filters and cartridges
HF-803SD	Large with speaking diaphragm for use with secure click filters and cartridges

3M™ Secure Click™ Half Facepiece Reusable Respirator HF-800 Series helps protect against particulates and/or a wide variety of gases and vapours when used with approved 3M™ Secure Click™ filters and cartridges.

This facepiece comes with many innovative features that make it the next generation in comfort, breathability and simplicity.



3M™ Half Facepiece Reusable Respirator 7500 Series

Product#:	Description:
7501	Small for use with 3M™ Bayonet Filters & Cartridges
7502	Medium for use with 3M™ Bayonet Filters & Cartridges
7503	Large for use with 3M™ Bayonet Filters & Cartridges

3M™ 7500 Series reusable respirators are made from an advanced silicone material to help give your crew comfort throughout their shifts. The adjustable features are designed to help reduce pressure and tension points on the wearer's face, while the adjustable head cradle provides a secure, personalised fit.



3M™ Half Facepiece Reusable Respirator 6200

3M™ Half Facepiece Reusable Respirator 6000 Series is a low-profile, easy-to-use and economical reusable respirator. The 6000 Series can help reduce exposure to a broad range of gases, vapors and particulates, when used with approved 3M filters and/or cartridges. When properly fitted and used with approved 3M filters and/or cartridges, this half facepiece helps provide respiratory protection for concentrations up to 10 times the OSHA permissible exposure limit (PEL).



3M™ Secure Click™ Full Facepiece Reusable Respirator FF-800 Series

Product#:	Description:
FF-801	Small, for use with 3M Secure click filters and cartridges
FF-802	Medium, for use with 3M Secure click filters and cartridges
FF-803	Large, for use with 3M Secure click filters and cartridges

3M™ Secure Click™ Full Facepiece Reusable Respirator FF-800 Series helps protect against particulates and/or a

wide variety of gases and vapours when used with approved 3M Secure Click filters and cartridges. This facepiece comes with exciting features that make it 3M's next generation in comfort, breathability and simplicity.



3M™ Full Facepiece Reusable Respirator 6000 Series

Product#:	Description:
6700	Small for use with 3M™ Bayonet Filters & Cartridges
6800	Medium for use with 3M™ Bayonet Filters & Cartridges
6900	Large for use with 3M™ Bayonet Filters & Cartridges

3M™ Full Facepiece Respirator 6000 Series is designed to help protect your workforce from certain airborne

contaminants when used with approved 3M cartridges and filters, the 3M™ Full Facepiece Reusable Respirator 6000 Series is a reliable and easy to use solution in a variety of work environments and applications.

Eye Protection Solutions

3M Protective Eyewear and Protective Goggles are designed to deliver comfort and performance, helping to keep workers safe. Featuring optional 3M™ Scotchgard™ Anti-fog Coating, which resists fog up to 11x longer than traditional 3M anti-fog coating, and proprietary 3M™ SecureFit™ Pressure Diffusion Temple technology that self-adjusts to the wearer's head size and shape.



3M™ SecureFit™ Protective Eyewear 200 Series

Product#:	Description:
SF201AS	Clear Anti-Scratch Lens
SF201AF	Clear Anti-fog Lens
SF202AFP	Gray Lens

3M™ SecureFit™ Protective Eyewear 200 Series is stylish, lightweight design weighs less than 1oz. Features proprietary 3M™ Pressure Diffusion Temple Technology that helps diffuse pressure over the ear to enhance frame comfort while not compromising the security of fit across a diverse workforce.



3M™ SecureFit™ Protective Eyewear 400 Series

Product#:	Lens:
SF401AF-AS	Clear
SF402AF-AS	Grey
SF410AS-AS	Indoor/Outdoor Mirror

3M™ SecureFit™ Protective Eyewear 400 Series features 3M™ Pressure Diffusion Temple (PDT) technology, a soft one-piece nose bridge, dual-injected temples and a range of options, including various lens tints, brow guards, premium coatings, readers and more. Optional foam gasket helps reduce eye exposure to particulate hazards while providing added comfort and cushioning.



GG3001A-AF



GG3301A-SGAF

3M™ GoggleGear™ Protective Goggle 3000 Series

Product#:	Description:
GG3001A-AF	Lens: Polycarbonate Transparent; Coating: Anti-Fog/Anti-Scratch (AF-AS); Goggle Rating: D3, D4; Shroud Material: PVC; Fit: Asian Fit
GG3301A-SGAF	Lens: Clear Polycarbonate; Coating: Scotchgard™ Anti-Fog (SGAF); Goggle Rating: D3, D4;Shroud Material: TVP; Fit: Asian Fit

The 3M™ GoggleGear™ Protective Goggle 3000 Series offers a full-size design with a wraparound lens for enhanced vision and a slotted nose bridge for comfort. Its U6-rated polycarbonate lenses block 99.9% of UVA, UVB, and UVC rays from 200 nm to 380 nm. These goggles meet the ANSI/ISEA Z87.1-2020 Standard for Impact-Rated Goggles and feature an optimized shroud design to fit over most prescription eyewear.

Head and Face Protection Solutions

We design and manufacture hard hats and accessories to meet a diverse spectrum of needs. From safety helmets for working at height, to full-brim hard hats and solutions for working in elevated temperatures, 3M offers consistently reliable products.



3M™ SecureFit™ Hard Hat H-700 Series

- Suspension system incorporates exclusive patented Pressure Diffusion Technology
- A smooth, easy turning ratchet suspension system sits low on the head to reduce pressure, helping to make 3M™ SecureFit™ Hard Hat H-700 series a comfortable and secure hard hat option
- Works with a variety of 3M faceshields, earmuffs, and other accessories.



3M™ SecureFit™ X5000 Series

- Suspension system incorporates exclusive patented 3M™ Pressure Diffusion Technology
- Works with a variety of 3M™ Faceshields, Earmuffs, and other accessories
- Meets ANSI Z89.1



3M™ SecureFit™ Full Brim Hard Hat H-800 Series

- Suspension system incorporates exclusive patented Pressure Diffusion Technology
- A smooth, easy turning ratchet suspension system sits low on the head to reduce pressure, helping to make 3M™ SecureFit™ Full Brim Hard Hat H-800 series a comfortable and secure hard hat option
- Works with a variety of 3M faceshields, earmuffs, and other accessories.



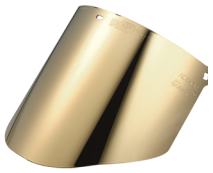
3M™ Polycarbonate Faceshield WP96C, Dark Green

- Dark green faceshield helps reduce glare and brightness
- 3M™ Easy-Change™ Faceshields mount quickly to 3M headgear
- Meets the high impact requirements of ANSI Z87.1-2003



3M™ Total Performance Gold-Coated Polycarbonate Dark Green Faceshield Window WCP96CG

- Gold-coated windows are the perfect choice for high heat environments.
- Made of durable, splash- and impact-resistant polycarbonate.
- Window is a full .075” thick--great for rugged operations.
- Simple attachment scheme—no cams, straps or buckles.
- Meets High Impact requirements of ANSI Z87.1-2003.



3M™ Gold-coated Polycarbonate Medium Green Faceshield Window WCP96BG

- Gold-coated windows are the perfect choice for high heat environments.
- Medium green color offers glare reduction.
- Window is a full .075” thick—great for rugged operations.
- Simple attachment scheme—no cams, straps or buckles.
- Meets the High Impact requirements of ANSI Z87.1-2003.



3M™ Elevated Temperature Universal Faceshield Holder For Hard Hat H24T, Black

- Designed to work with 3M™ H-700T series elevated temperature hard hats
- Made using heat resistant 15% glass nylon material similar to the H-700T shell
- Quick change system with no snaps, bands or cams offers easy window replacement
- Two position system locks shield up and out of place when not in use

Fall Protection Solutions

Working at heights requires comprehensive protection. 3M offers a wide range of personal fall arrest systems to help protect those working at heights, in addition to dropped objects protection for tools to help protect those working below.



3M™ DBI-SALA® Rollgliss™ R550 Rescue and Descent Device Kit with Rescue Wheel

Rollgliss™ R550 offers the choice of controlled descent rescue, evacuation or the versatility of assisted rescue with lifting capabilities. This state of the art, fully automatic controlled descent device can be used for rescue and evacuation from heights up to 1,640 ft. (500 m) for one user 310 lbs. (141 kg) or 574 ft. (175 m) for two users totaling 620 lbs. (282 kg).



3M™ DBI-SALA® High Capacity Confined Space 5-Piece Davit Hoist System

Product #: 8000133

3M™ DBI-SALA® High Capacity Confined Space 5-Piece Davit Hoist System is the industry gold standard for confined space entry and retrieval applications. Built tough with lightweight materials including high-strength aluminium, the davit pivots for better rescue angles, and can easily adjust for overhead clearance restrictions.



3M™ DBI-SALA® FlexiGuard™ M200 Adjustable Height Mast

The 3M™ DBI-SALA® Flexiguard™ Modular Jib System is comprised of a modular set of components that when properly configured constitute a portable overhead anchorage system. The 3M™ DBI-SALA® Flexiguard™ M200 mast is built with powder coated steel. The height adjustable design allows for maximum transportability and adaptation to different work environments. Adjustment of the system can be accomplished manually with integrated winch for adjustable models, or by relocating channel fasteners on semi fixed models.



3M™ DBI-SALA® Sealed-Blok™ Self Retracting Lifeline

Product #: 3400967

3M™ DBI-SALA® Sealed-Blok™ Self-Retracting Lifeline (SRL) incorporates a patented concept that helps separate components, such as the motor spring and brake, from foreign elements such as grease, moisture, and dirt. The 3M™ DBI-SALA® Sealed-Blok™ Self-Retracting Lifeline is IP-69K rated to provide protection against ingress of dust and high-temperature high-pressure water, for use in extreme environmental conditions. These lifelines are available in Overhead, Retrieval, and RSQ / Rescue SRL configurations.



3M™ Protecta® P50 Safety Harness

3M™ Protecta® P50 Safety Harnesses are 3M's entry level safety compliance harnesses.

The line of fall protection products from 3M™ Protecta® were designed around a simple concept; provide a fundamental fall protection line with exceptional value. The 3M™ Protecta® line was assembled to provide fall protection body support in a variety of applications.



3M™ Protecta® FIRST™ Twin Leg Shock Absorbing Rope Lanyard

3M™ Protecta® Shock Absorbing Lanyards provide high quality compliance and are trusted by workers. They feature durable webbing and plated alloy steel hardware for strength and corrosion resistance.

3M™ Protecta® Shock Absorbing Lanyards provide high quality compliance at an economical price and are trusted by workers. They feature durable webbing and steel hardware for strength and corrosion resistance. The shock absorbing packs feature a controlled tearing action when subjected to a fall, reducing the forces imposed on the user to safe levels and stopping the fall. Various styles, lengths and hooks options are available to suit your specific job site needs.

Self-Contained Breathing Apparatus (SCBA)

For certain hazardous environments or rescue situations, atmosphere-supplying respiratory protection such as an Emergency Escape Breathing Device (EEBD), Self-Contained Breathing Apparatus (SCBA) or Supplied Air Respirator (SAR) may be required. 3M offers a range of solutions to help protect workers during emergencies.

Emergency Escape Breathing Device (EEBD):

An Emergency Escape Breathing Device (EEBD) is suitable for quick escape from hazardous industrial environments, helping ensure protection in escape situations.



3M™ Scott ELSA Emergency Life Support Apparatus

Product #: 2009419



3M™ Scott Flite COV Airline Breathing Apparatus

Product #: 2031077

SCBA and Supplied Air Respirator with Escape Cylinder:

Self-Contained Breathing Apparatus (SCBA) and positive pressure Supplied Air Respirator (SAR) with a combined escape cylinder are used for different types of operations and/or for emergency situations in mining operations. These may be used when atmospheric contaminants are unknown, Immediately Dangerous to Life or Health (IDLH), or when concentrations are potentially unstable.



3M™ Scott ProPak-f-Ez-Flo T2 SCBA

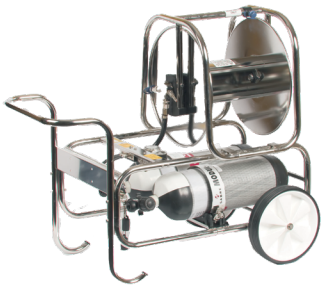
Product #: 2031985



3M™ Scott Sigma 2 T2 SCBA

Product #: 2023034

3M™ Modulair Airline Trolley System



3M™ Scott™ M-Frm-2-2-Hrt-Afu

Product #: 1051845

3M™ Scott™ Cyl-1640, Empty

Product #: 2006636

3M™ Scott™ Hose-As-15M 1051484

Product #: 1051484

Face Mask:



3M™ Scott Promask Positive Pressure Face Mask

Product #: 013190



3M™ Scott Vision 3 PP Full Face Mask

Product #: 1071671

Validate your protection

Fit testing (or fit validation) is a procedure to help verify the PPE selected is providing the expected level of protection. Fit can have a significant impact on protection, therefore, fit testing is a best practice and often is required by standards and regulations.

There are many factors that affect how well PPE fits the individual wearer, including size and shape of the wearer and other equipment or clothing worn at the same time.

3M has resources that can help you test and validate fit for a variety of PPE:



Respiratory fit testing

A respirator needs to fit and seal to a wearer's face. Otherwise, contaminated air can pass around the respirator and into the wearer's breathing zone.

Applies to all tight-fitting respirators, including:

- Filtering facepiece particulate respirators
- Half and full-facepiece respirators fitted with filters and/or cartridges
- Tight-fitting facepieces connected to powered or supplied air turbo units or used with breathing apparatus

Respirator Fit



Hearing fit testing

If earplugs or earmuffs do not fit the wearer's ear canal or head well, external noise may penetrate the inner ear, which can lead to noise-induced hearing loss.

Applies to:

- Earplugs
- Earmuffs
- Electronic earplugs and headsets

Hearing Fit



Fit testing at your fingertips

Help fit testers and wearers follow the exact fit test protocol at every step of the process with the tap of a button.

Download on the App Store

GET IT ON Google Play

For advice and support implementing a fit testing program, please contact your local 3M representative here.

Unknown Source Reusable Respirator

Product Notice in Philippines.

Avoid buying reusable respirators labeled with the “LA Sticker” or “CN” in Philippines, as their sources are unknown. While 3M respirators are designed for ease of use, their effective performance relies on complex science and manufacturing quality. Purchasing products from unreliable sources may put you and your workers at risk.



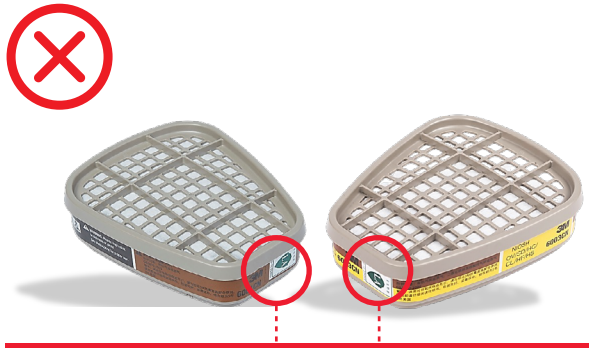
Original Product



“LA” Sticker



3M™ Cartridges & Filter (Original Product)



“LA” Sticker

To ensure authenticity, purchase reusable respirators exclusively from official 3M distributors.

Have a concern to report related to a potential unknown source?
Contact us here

Be SURE
Buy ORIGINAL!
Authentic, durable, comfortable, protective, has standards & certificates.

“Do not put yourself and your workers at risk.”

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product in accordance with all applicable instructions and with appropriate safety equipment, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

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