

Purpose

This handbook and guidelines have been drawn up to provide workers with information and background detail to enable them to make informed decisions as to the most suitable type of Personal Protective Equipment (PPE) to wear. Information is included to give purchasers and users of PPE a greater understanding of the reasons for using PPE, some of the issues relating to PPE and to highlight the importance of selecting the correct type of PPE based on the results of task related risk assessments.

Scope

These guidelines apply to all Ravensdown staff, to staff at Joint Ventures (50% or more Ravensdown stake) and additional Ravensdown entities, as well as all contractors working for Ravensdown or its entities.

Introduction

These PPE guidelines cover a wide range of protective equipment and clothing, how they are to be used, guidance on use in various workplace settings, recommendations on care and maintenance as well as requirements for specific tasks and work environments.

The guidelines cover:

- Safety eyewear
- Hearing protection
- Hand protection
- Respiratory protection
- Safety footwear
- Safety clothing
- Safety hardware (helmets and hats).

Ravensdown provides all employees with the PPE required to complete their job safely. PPE is used on a daily basis to provide protection against such things as falling objects, noise induced hearing loss, respiratory illness and chemical burns to name a few, hence it is vitally important that the correct PPE is chosen and is worn correctly to provide the highest level of protection possible.

Ravensdown will ensure the PPE used meets regulations and AUS/NZ standards (or equivalent), while it is a shared responsibility by us all to ensure our PPE is maintained, stored, and used in an appropriate manner and is kept in good working order.



PPE Handbook & Guidelines

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Hierarchy of control:

PPE is considered the **'last line of defence'** against worker injury and illness. PPE is used to provide additional protection when controls that sit higher in the hierarchy of controls do not eliminate the hazard or are not sufficient on their own to provide complete protection. The hierarchy of controls diagram below demonstrates PPE and where it sits in relation to effectiveness. It is still very important, but never the first or only control that should be considered.



When work is being planned, PPE must be considered as one form of control, along with a range of other controls. It is critical to ensure the appropriate PPE is worn to support the health and safety of the individual working. It is also important to make sure the PPE fits properly, is maintained and is to a suitable standard for the conditions and work environment. All of these things are considered and discussed in the following guidelines.

Worksafe NZ provide a [PPE guide](#) which provides useful information around PPE, key things to remember in wearing PPE, training and instructions on use of PPE etc. Worksafe also provide a [guide on Respiratory Protection Equipment \(RPE\)](#) which includes advice for workplaces, employees as well as a Respirator selection tool.

Risk Assessment to Determine Appropriate PPE

It is critical that a risk assessment is completed prior to commencing any work. A risk assessment may already be part of the Standard Operating Procedure (SOP) or completed prior to work starting as part of a JSA (which may include high risk permitted work) or discussed as part of a Take 5. This allows the opportunity to not only determine the steps of the task and to identify controls to be put in place, but also allows specific PPE related to the job to be identified and prepared prior to commencing the task.



PPE Handbook & Guidelines

The Ravensdown JSA contains a section on PPE which must be completed as the task is discussed amongst workers and plans are made for the job. PPE required should be identified and marked in the table below (extract from JSA) or if other PPE that is not listed is required, this should be identified on the JSA.

PPE to be worn on the Job (In addition to site minimum)			
Safety Glasses	<input type="checkbox"/>	Safety Goggles	<input type="checkbox"/>
Respiratory Protection (specify type in JSA)	<input type="checkbox"/>	Hearing Protection	<input type="checkbox"/>
Protective suit	<input type="checkbox"/>	Full length Sleeves &Trousers	<input type="checkbox"/>
Hard Hat	<input type="checkbox"/>	Gumboots	<input type="checkbox"/>
Gloves (specify type in JSA)	<input type="checkbox"/>	Sun protection	<input type="checkbox"/>
Face Shield	<input type="checkbox"/>	Other PPE:	<input type="checkbox"/>

Ravensdown has a preferred supplier agreement with NZ Safety Blackwoods to supply us with our personal protective equipment needs. If you require new or replacement PPE, contact your Manager to organise its purchase.

Working Alone

Working alone poses a risk for staff at several of our workplaces and the following PPE has been supplied to provide communication and assistance in the event of an emergency.

Works, Quarries and Stores

For all staff working at any of our Works, Quarries, or Stores, a Ravensdown RT has been provided and when needed, is expected to be always carried. These are to be used for communication purposes, but they also contain a Man Down alarm for all RT's which are activated physically by pushing the orange button for 5 seconds. For Stores RT's, it will activate automatically when the RT is left lying on its side for a period of time.

The Emergency Activation button will activate a series of steps if pushed for more than 2 seconds.



On Farm

For Agri Managers and Environmental staff a PLB – Personal locator beacon has been supplied, and it is expected that this will always be carried on their person when working alone on farm.

Minimum PPE Requirements

PPE Type	Stores	Works – Operational Areas	Quarries – Operational Areas	On Farm use	ARL	Aerowork
Hard hat	Task dependant	✓	✓	ATV Helmet as required		Task dependant
Hi vis	✓	✓	✓	Quad, UBCO, side by side use		✓
Safety eyewear	Task dependant	✓	Task dependant		✓	Task dependant
Safety footwear	✓	✓	✓	✓	Enclosed footwear	✓

All other work areas will have PPE requirements. Refer to their PPE requirements/SOP for individual sites.

Task Specific PPE Requirements

- In addition to the minimum PPE requirements for individual sites, workers must wear the PPE outlined in the PPE by Task table which can be found in **Appendix 1** of this document. A tick (✓) indicates which PPE is required. Additional text may clarify specific items to be worn.
- For specific tasks such as working in confined spaces and handling liquid additives the PPE requirements as outlined in the relevant SOP or permit must be adhered to.
- When handling Hazardous Substances, it is important that the PPE as outlined in section 8 of the relevant product Safety Data Sheets is worn.

Safety requirements as outlined in Safety Data Sheets.

For the most up to date version of the Safety Data Sheet information, which includes PPE requirements, refer to <https://ravensdown.sharepoint.com/sites/ravnet2/SitePages/RavTech-SDS-and-PSC-listings.aspx>

Note: SDS all have a section titled 'Exposure Control/ Personal Protection'. If the 'task you are undertaking is likely to result in the fertiliser dust landing on your skin' then you are deemed to be handling fertiliser and are exposed to it as a product and must wear the appropriate PPE as described.

Note: Labs throughout Ravensdown, should refer to their chemical inventory list and SDS for full details.

When handling each product refer to section 8 of the relevant Safety Data Sheets – “Exposure Control/ Personal Protection” for the PPE requirements when handling that product.

For example, the PPE requirements for 40% Potash Super are shown as:

- Wear close fitting safety glasses or goggles
- Wear protective clothing and gloves where there is a risk of moderate to high skin contamination
- Wear a particulate respirator where there is a risk of breathing moderate to high levels of airborne dust
- Do not eat or smoke while handling this product, Wash hands before eating.



Safety Eyewear

In general terms there are three types of eye protection:

- To be worn if working in dusty environments
- To be worn if there is a risk from Low / Medium impact particles <40m/ sec
- To be worn if there is a risk from High impact particles >40m/sec

Dusty Environments:

In dusty environments normal safety glasses do not provide sufficient protection to prevent particles entering the eyes. The only glasses available to provide this level of protection have a foam layer on the back of the frames to seal against the face and therefore you must wear this style of safety glasses when working in dusty environments.

Hazard	Requirements	Styles:
Dust	<p>When working in a dusty environment, this type of glasses must be worn. A risk assessment will help to determine the need for this type of safety glasses.</p> <p>These glasses typically have a foam backing which sits against the face to prevent dust & small particles from entering the eye and they also have a medium impact rating.</p> <p>An additional option (4th image to right) offers a soft, flexible face support that shapes itself to the wearer's face and offers protection from liquids and coarse dust (Uvex i-guard plant spectacles)</p>	
Dust	<p>These goggles and face shields are also suitable for where you will be working for longer than 10 mins in a dusty environment.</p> <p>The goggles also have a medium impact rating.</p>	

Low / Medium Impact risk situations:

These glasses are for normal day to day wear, away from dusty situations. They are suitable for low to medium impact risk areas but offer no protection from dust. (Safety glasses are not available as a high impact option and a face shield should be used in these situations)

Hazard	Requirements	Styles:
Medium impact objects. For use when outside of "Dusty" areas	Safety glasses can only provide protection from Low or Medium velocity impacts up to 45m/sec	Examples Only 

High/ Very High impact risk situations:

Safety glasses cannot be rated for high or very high impact objects so visors must be worn to achieve this level of protection if outlined in your risk assessment.

Hazard	Requirements	Styles:
High & very high impact objects.	Visors are the only option for high impact areas because safety glasses can only provide low/ medium impact protection	Examples Only.  Visors worn over safety glasses or goggles provide dual protection.





Ultraviolet protection:

Protection from Ultraviolet rays is an issue when working outside and should be considered as part of the selection process for safety eyewear. The complete range of safety glasses also come in a variety of tints and finishes which offer various levels of glare and UV protection.

Impact Resistance:

All eye protection is tested to be capable of withstanding impact from a specified weight ball without cracking, detaching, or dislodging, breaking, or contacting the eye or the head.

The level of impact resistance is categorised into four categories.

Category	Description	Depicted as
Low Impact	Tested full face on at 12m/sec	
Medium Impact	Tested front on as well as side on at 45m/sec	
High Impact	Tested front on as well as side on at 120m/sec.	
Very High Impact	Tested front on as well as side on at 190m/sec	

Eye protector markings:

All safety eyewear is marked according to the type of protection it will provide, and these markings can be found in the catalogue and on the frame of the individual glasses.


Type of protection offered	Eye protection marking
Low impact	S optional
Medium Impact	I or F
High impact	V or B
Extra high impact	A mesh visor V or B
Molten metal	M or 9
Splash Proof	C or 3
Dust proof	D or 4
Gastight	G or 5
Outdoor use, untinted	O
Sun glare ocular	Category number (0 – 3)
Photo-chromatic, transitional	Category number (1 – 3)
High temperature	H

Prescription Safety Glasses:

Standard prescription glasses offer no protection from dust or flying particles and hence safety over glasses or prescription safety glasses must be worn.

Prescription Safety Glasses Guidelines





<https://ravensdown.sharepoint.com/sites/ravSafety/SitePages/Updated-Prescription-Safety-Glasses-Guidelines.aspx> provide information on how to order safety glasses that are specific to the persons needs in terms of their eye health. These glasses provide high impact protection and do not normally require over glasses. For more specialised tasks such as welding/grinding etc, additional face/eye protection may be required.

Hazard	Requirements	Styles:
For those with standard prescription glasses	Standard prescription glasses offer no protection from dust or impact and over glasses must be worn when working in these environments.	

Safety Clothing

Hi-vis



To ensure workers can be clearly seen in the workplace, high visibility workwear must comply with the Aus/NZ standard.

Type	Use	Example
Hi-vis Day only	Clothing made from compliant fluorescent material. Intended for workplaces where lighting levels are good, and no work is done outside of daylight hours.	
Hi-vis Day/night	Clothing combines fluorescent material and retroreflective tape. These are suitable for both day and night use or for work areas with low light levels.	
Hi-vis jackets and vests	Can be worn over plain clothing to meet day/night hi-vis requirements. Can also be worn over overalls to provide the night-time retroreflective tape requirements where overalls do not have them.	
Lab coats	Worn over clothing to help protect against chemical contact with skin	

Overalls





Overalls are worn to protect skin from exposure to fertiliser, dust, grease, and other dry products. Fire retardant fabric overalls are required for hot work or working around very hot surfaces. Arc rated clothing may be required for electricians, depending on the work they do. Suitable long sleeves and trousers can be worn in place of overalls if required for the job.

Important Note: If Bib Overalls are worn, and there is a risk of exposure to fertiliser, dust, grease etc, long sleeve clothing must be worn under the Bib.

Overall Type	Use	Example
Poly-cotton	<p>General use protective overalls. Protects skin from exposure to fertiliser, dust, greases etc.</p> <p>Weight=240gsm</p> <ul style="list-style-type: none"> • Suitable for use in stores, despatch, and manufacturing. • Suitable for maintenance when not carrying out hot work. • Suitable for Acid Plant when not working in Melter or with additional chemical PPE when working around acid storage. • NOTE: if wearing bib style overalls, these will not be suitable without long sleeves when handling products which specify long sleeves and long trousers in their SDS, check the PPE table for your work before using. 	
Megatec (cotton)	<p>Fire retardant fabric protects from radiant heat, small flames, arc flash and chemical splash.</p> <p>Arc Level II rated</p> <p>Weight= 300gsm</p> <ul style="list-style-type: none"> • Suitable for hot work • Suitable for accessing MCC Rooms • Suitable for use at the sulphur Melter • Electrical work 	

Chemical Protection Clothing

Chemical protective suits must meet the European standard of Category III PPE. Some of the protective clothing can be suitable for multiple types of work as displayed in the table below.

Chemical protection clothing	Use	Example
PVC Coat (Minimum 60 min breakthrough required) PVC Over Trousers Worn with face splash shield and rubber gumboots Note: if over trouser not used, Coat must have been lengthened to cover to gumboot.	<ul style="list-style-type: none"> Working in Acid Storage area Working at Acid Load Out Specific tasks in Manufacture Scrubber area 	
Chemical resistant coverall Type 6 Protective for low volume liquid splash only Type 3,4 and 5 protective for liquid, sprays, and particulate Worn with face splash shield or full-face respirator and rubber gumboots	<ul style="list-style-type: none"> Working on acid lines 	
One Piece Chemical Protective Suit, gas tight boots and gloves. Type 1 Gas tight Worn with fitted mask to connect to BA Maximum protection against gases, vapours, solid and liquid chemicals	<ul style="list-style-type: none"> Entering acid plant vessels 	
Disposable chemical suit Type 3,4,5 and 6 Protective against dust and liquid splash or spray		

Head Protection

The risk of being severely injured by falling objects when working in areas with restricted headroom or falling when working at height makes a safety helmet or hard hat an essential item of PPE.



What is the difference between hard hats and helmets?

Hard Hats are designed to protect the head from falling objects.

A hard hat needs to have standard AS/NZS 1801:1997 to be compliant with the Health & Safety at Work Act 2015. These have been tested to withstand an impact of 3kg object falling from 1m.

Hard hats should be worn in any area that has the potential for workers:

1. To be hit or struck by falling, fixed, moving or protruding objects
2. To come in contact with electricity
3. Be exposed to UV, weather, and extremes of temperature



Helmets provide protection from multi-impact with a chin strap ensuring the helmet does not come off. A helmet is recommended for those working with heights as it can withstand multiple points of impact. In New Zealand, we mainly rely on the European standard EN 12492:2012. These have been tested to withstand 5kg weights falling 500mm from any direction or 3kg from 1m.

A good helmet should be able to absorb impact but also have a non-releasing chin strap to stop the helmet falling off. Some helmets have automatic chin strap release if falling with a certain force to avoid strangulation.



ATV, Quad bike or Electric Bike Use

A certified ATV helmet must be worn while driving or on an ATV, Quad bike or UBCO.






Why do we wear hard hats/helmets?

Serious injury can be prevented by wearing adequate head protection. Hard hats/helmets provide an inner suspension, which provides space between the helmet/hat shell and the head. This space helps as a shock absorber in the event of an impact. The internal harness stretches on impact, assisting the protection of the head.

Standards (Occupational Protective Helmets) that cover helmet selection use and care are additional reference documents if needed. Items that can be purchased from NZSB will include equipment that meet standards in Australia and New Zealand.

Head Protection Inspection, Care & Maintenance

- Date of issue should be written on the sticker on the inside of the head protection.
- It is recommended for an industrial hard hat/helmet to be replaced every 3 years from date of issue OR **5 years after the manufacture date.**
- **In areas with high temperature or chemical concentrations, they should be replaced every 2 years regardless of appearance or condition.**
- **Hard hat harnesses may deteriorate more rapidly than the hat/helmet, therefore, they must be replaced at intervals no longer than two years.**
- Harsh working conditions or rough usage may dictate a helmet be replaced sooner.
- Clothing or thick hats should not be worn under hats/helmets. As an alternative, seamless polypropylene/wool beanies which do not interfere with the performance of the harness cradle can be worn.

Things to look out for		
Issue Date		Some helmets will have an issue date sticker on the inside of the helmet to record name & date of issue. Add the date of issue with a permanent marker to the sticker. Discard after 3 years from date of issue or if worn/damaged.
Manufacture Date Stamp		If there is no sticker or it is worn off, check the manufacture date stamp which will be under the brim or peak of the helmet. Centre of the stamp indicates year, with directional arrow indicate month that it was made. Discard after 3 years from date of issue or if worn/damaged.
Material Stamp	 <p>The material the helmet is manufactured from is given (i.e. ABS Acryl Butadiene Sty)</p>	Under the brim or peak, a stamp indicating the material it is made from is given. You will see if this is ABS or Polycarbonate. Discard after 3 years from date of issue or if worn/damaged.

Care & Maintenance

Store in a cool, dry environment away from direct sun and chemicals.

- The shell can deteriorate if exposed to paints, thinners, adhesives, and some cleaning agents.
- Extreme heat can reduce strength of helmets.
- Do not store helmets in the front or rear window shelves of vehicles or in direct sun.
- If stickers or decals are used on hard hats, they should have a non-solvent, based adhesive.

Head Protection - Helpful Hints

High visibility helmets

- ABS fluorescent coloured helmets are designed for use in lower light areas.
- If full sunlight, the life of ABS helmets may be reduced.
- Polycarbonate fluorescent coloured helmets are less likely affected by UV light, therefore are more suitable for outdoor workers.
- UV damage can be identified as the helmet loses its glossy finish & may become chalky.

Bump Caps vs Safety Caps

- Bump caps are not tested in NZ and do not comply with NZ standards.
- Bump caps cannot be used in designated environments requiring head protection.

Consider other PPE

- Consider safety helmets and safety eyewear to ensure they work together.
- Some work may be better carried out with a helmet without a peak.
- Hearing protection also needs to be considered when choosing helmets.
- Sun protection for necks can be attached to helmets on appropriate hooks.

Hand Protection

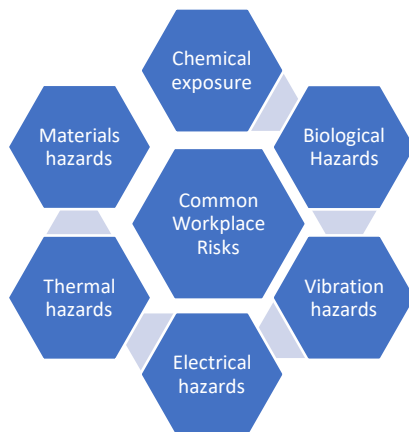
Hands are often injured in workplace accidents, however, many hand injuries are preventable.

Workers in many roles may encounter substances or conditions that pose a risk of harm to their hands or arms. If these risks cannot be minimised in some other way, protective equipment must be used to do so. Hands are used to pinch, grasp, twist, lift, hold and manipulate, while doing a wide variety of other specific tasks.

Without full function of your hands, your ability to work may be greatly reduced. Ensure your gloves do not restrict your hand movements.



Common Workplace hazards for hands



Hand Injury Prevention

In your workplace, your hands are exposed to many hazards that can cause harm, from moving machinery, through to hazardous chemicals, and even extreme temperatures. Injuries can be immediate like cuts, punctures and burns or may happen over time such as carpal tunnel syndrome and OOS (occupational overuse syndrome).

Common causes of hand injuries



Things to consider when purchasing gloves

Fit & comfort	Flexibility	Glove is unrestrictive, allowing a complete fist to be made.
	Dexterity	Glove should allow user to perform actions without taking gloves off.
	Liner comfort	Soft, smooth without irritation skin.
	Moisture management	Based on task & environmental conditions, the glove should be able to be worn for long periods.
Protection, performance & functionality	Grip	Correct grip should provide user with good control.
	Puncture	Should provide protection against large objects that pose a puncture threat (eg timber, metal fabrication)
	Cut	Cut resistant properties to be considered include material of construction, basis weight, fabric construction & coatings.
	Impact	Back of hand impact protection scatters the impact force away from the bone, preventing or reducing hand/finger injuries.
	Vibration	Includes gel pads to lessen impact from vibrating tools
Durability	Abrasion	Ensures the glove provides same protection level at end of shift as it did at the start.
	Chemical integrity	Ensures the glove is durable enough to match the chemical that may come in contact with the glove. SDS will provide provides same protection level at end of shift as it did at the start.

Skin Protection

In some Ravensdown work environments, fertiliser products, raw material and other chemicals can be harsh on direct skin. To protect skin, there are a range of products that can be used. Barrier creams can be used to moisturise dry stressed skin, in addition to providing an additional barrier to help protect skin. Products such as these are available on the NZ Safety Blackwoods website.

<https://nzsafetyblackwoods.co.nz/en/catalogue?c=hand-protection-1&page=6-7#>

Choosing the right type of glove

Refer to [NZ Safety Blackwoods](#) current Catalogue under the Hand Protection section to find out what glove is most suitable for the work being carried out. A risk assessment as part of preparation for work being undertaken should highlight what type of protection that is needed for hands. If you are handling raw or finished fertiliser products or other chemicals, refer to the Safety Data Sheet for specific requirements around hand protection.

There are various gloves that provide protection against:

1. Chemicals
2. Micro-organisms
3. Heat
4. Cold
5. Cuts
6. Mechanical processes (including abrasion)
7. Impact / Vibration

Kevlar Sleeves

Kevlar sleeves are a form of personal protective equipment made of Kevlar, a strong synthetic fibre used to protect workers from cuts, abrasions, sparks and heat. Kevlar sleeves fit over the arm, and are lightweight, flexible and comfortable. Kevlar sleeves, if deemed appropriate at the time of the risk assessment can be worn when grinding to protect the hand/arm from cuts and sparks.



Gas Monitors and Monitoring

If you are working in an area where gas is present or the atmosphere may be low in oxygen, carry a gas detector suitable for that environment with you, even if there are fixed ones in the area.

Before using a personal gas detector, it must be bump tested. Gas detectors must be calibrated at least every 6 months. Workers should be trained in gas detection use, see this document [How to use, bump test and calibrate portable gas detectors .pdf](#) where kits are available onsite.



What do the alarms on the gas detector mean?

The low-level alarm relates to the Time Weighted Average

The high-level alarm relates to Short Term Exposure Limit

Note: when you are working in an environment where you are monitoring gas levels, appropriate respiratory protection must be immediately available for use or be worn.

Gas Detector Alarm Levels

The following tables show the alarm levels and Workplace Exposure Standard (WES) levels for each type of gas the detectors monitor.

- Do not solely rely on RPE for work where gases may be present, additional controls such as isolation and ventilation must be considered first if the gas cannot be eliminated.
- Continuously monitor gas levels to ensure they do not exceed the protection factor of your RPE.
- If the gas levels are near to the RPE protection level, remove yourself from that space.

GAS	Low Level Alarm	Time Weighted Average	High Level Alarm	Short Term Exposure Limit
NH ₃ Ammonia	25ppm	25ppm	50ppm	35ppm
SO ₂ Sulphur Dioxide	0.2ppm	No TWA	0.3ppm	0.25ppm
H ₂ S Hydrogen Sulphide	5ppm	5ppm	10ppm	10ppm
CO Carbon Monoxide	25ppm	25ppm	200ppm	200 ppm (15 mins) 100ppm (30 mins) 50ppm (60 mins) 400ppm (ceiling)
NO ₂ Nitrogen Dioxide NO _x (N ₂ O, NO & NO ₂) – nitrous oxides	1ppm	1ppm	3ppm	NA

Oxygen levels must be monitored if you are entering a confined space or other area where low oxygen levels could be a risk. Ensure you are using a multi gas detector which can detect oxygen levels and any hazardous gases which may be present in the space.

Low Level Alarm	High Level Alarm	Safe range
19.5%	23.5%	Oxygen content must be maintained between 19.5% and 23.5%

Respiratory Protection

Respiratory protection is regularly required as part of our PPE and needs to be selected based on contaminant, task, operator, equipment limitations and emergency response.

Contaminants generally come in two different forms:

- Solid/Particles- Dust, fibre, fumes, micro-organisms (e.g., bacteria, viruses) and mists
- Gaseous- gases and vapours (inorganic gas, acid gas, organic vapour)

In general terms there are four types of respiratory protection:

- Disposable
- Half face respirator
- Full Face respirator
- Powered air purifying respirator (PAPR)

Filter types can protect against one or both forms of contaminants (e.g., dust and gases).

Particulate Filters

Class	Application – for Ravensdown
P2	Used for mechanically and thermally generated particles (dust fumes and mist) such as cement dust, silica dust, wood dust, lead dust, welding fume. Available as disposable masks or as filters for RPE. This is the best option for use on Ravensdown sites
P3	Used for mechanically and thermally generated highly toxic particles, viruses and bacteria. Only achieved when used with a full facepiece respirator (no disposables).

Gas and Vapour Cartridges













Chemical cartridges use active carbon material to absorb the gas or vapour. Different treatments may be added to adsorb or react with different types of gases and vapours.














Class	Application	
Class 1	Low to medium adsorption capacity	
Class 2	Medium adsorption capacity	
Class	Colour	Application
A	Brown	Organic vapours with boiling points >65 ^{°C}
AX	Brown	Organic vapours with boiling points <65 ^{°C}
B	Grey	Acid gases
E	Yellow	Inorganic gases (SO ₂)
K	Green	Ammonia
Hg	Red	Mercury
G	White	Organic compounds with low vapour pressure

Where both particulates and gas/vapour are present, wear a combination of a gas/vapour cartridge and a particulate filter using a retainer

Respirator and Filter Types:

This table below outlines the various options available through Ravensdown's NZ Safety Blackwoods Catalogue under each category.

Type	Styles		
<p>Disposable Dust Mask</p> <ul style="list-style-type: none"> - Single use particulate respirator - Not suitable for gases - P2 	<p>3M Particulate Respirator 8210 P2 Classic Moldex P2 Valved Respirator 2300</p>  		
<p>Disposable Dust Mask with nuisance level acid gas protection</p> <ul style="list-style-type: none"> - Single use particulate respirator P2 <p>Disposable Dust Mask with nuisance level organic vapour odour protection</p> <ul style="list-style-type: none"> - Single use particulate respirator P2 	<p>3M Respirator 9926 P2 Nuisance Acid Gas</p>  <p>3M Respirator 8576 P95 with nuisance level acid gas (P2)</p>  <p>Organic Vapours & Odours Respirator P2 Valve 5251</p> 		
<p>Half Face Respirator.</p> <p>Silicone models recommended if they are to be worn for extended periods of time.</p>	<p>3M Reusable Respirator Half Facepiece 6000 Series</p>  <p>Moldex Half Face Silicon 7800 series</p> 	<p>3M Particulate Filters for Dust 5925 P2</p>  <p>3M Particulate Filter 2125 P2</p>  <p>3M Filter 2128 GP2 Nuisance Organic</p>	<p>3M Organic Vapour Cartridge Filter 6051 A1</p>  <p>3M Organic Vapour/Acid Gas Cartridge Filter 6057 A1B1E1</p>  <p>3M Multi Gas/Vapour Cartridge Filter 6059 A1B1E1K</p> 

<p>Full Face Respirator</p>	<p>3M Reusable Respirator Full Facepiece 6000 Series</p> 	<p>Vapour/ Acid Gas</p>  <p>3M Particulate Filter 2135 P2/P3 Pair</p>  <p>Moldex P2 Pre-Filter 8010- Particulate protection</p> 	<p>3M Ammonia and Methylamine Cartridge 6054 K1</p>  <p>Moldex A1B1E1K1 Multi-Gas/ Vapour Cartridge- 7600A</p> 
<p>PAPR (note: these are not in the catalogue and require a purchase order)</p> <p>Note: for all PAPR use a prefilter as well as the relevant cartridges.</p>	<p>3M Versaflo PAPR TR-315A</p>  <p>3M Versaflo PAPR TR-619A</p>  <p>3M Adflo PAPR- Welding Protection connects to 3M Speedglas Helmets</p> 	<p>3M Versaflo PAPR Particulate filter P3 T3712E <u>OR</u> 3M Versaflo Filter P3 with nuisance acid gas TR3820E</p>   <p>3M Versaflo Filter Org Vap incl p3 TR-6310ANZ A2P3 <u>OR</u> 3M Versaflo Filter TR-6580ANZ ABE2K1Hg P3</p>   <p>Speedglas filter particle PSL Adflo + Speedglas spark arrestor adflo</p>	

Disposable	Half Face Respirators	Full Face Respirators	PAPR (Powered Air Purifying Respirator)
			
<p>APPLICATIONS</p> <ul style="list-style-type: none"> • Single use particulate respirator • Protection against dust – fume – mist <p>Protection Factor: Up to 10x WES*</p>	<p>APPLICATIONS</p> <ul style="list-style-type: none"> • Reusable respirator • Protection against dust – fume – mist – gases – vapours <p>Protection Factor: 10x WES (any class 1 chemical cartridge or particulate filter)</p>	<p>APPLICATIONS</p> <ul style="list-style-type: none"> • Reusable respirator providing eye and face protection <p>Protection Factor: Up to 50 x WES class 1 chemical cartridge (max volume 1000ppm) or P3 particulate filter Up to 100 x WES class 2 chemical cartridge (max volume 5000ppm) or P3 particulate filter</p>	<p>APPLICATIONS</p> <ul style="list-style-type: none"> • Reusable respirator providing breathing comfort by supplying purified air to the face <p>Protection Factor: Up to 50 x WES class P2 or class P3 particulate filter Up to 100 x WES class P3 particulate filter (full-face)</p>

Choosing the Right Respirator for the Job

Do you need to wear a combination of PPE e.g. respirator and eye protection?

- Consider using a full-face respirator or PAPR which combines both eye and respiratory protection.

Do you only need to wear a respirator with particulate protection for a short period or infrequent task?

- Consider using a disposable respirator

Do you need to wear prescription eyewear with your respirator?

- Consider using a full-face respirator with a spectacle insert or PAPR

Is there potential to be exposed to more than 10X the workplace exposure standard?

- Full face and PAPR offer protection factor up to 100 depending on the hazard

Is the exposure hazard likely less than 10x the workplace exposure standard?

- Disposable and half face reusable respirators provide a protection factor up to 10x. Remember disposable masks do not protect against ammonia fumes.

Are you entering a space where there may be an immediate danger to life and health such as lack of oxygen or dangerous level of gas?

- You must use supplied air system with a tight-fitting respirator face piece

Fit Testing

A “fit test” checks the seal between the respirator and your face by using a substance that you can smell or taste, or a special piece of equipment is used that tests the air inside the mask. For negative pressure respirators, an annual facial fit is required.

Facial Hair

When you’re wearing disposable, half face or full face fitted masks at work, you must be clean shaven to make sure it’s forming a seal on your face and protecting you from breathing in harmful materials. See the facial hair styles page below for styles of facial hair that will and won’t work with RPE. The PAPR units do not require you to be clean shaven as they aren’t fitted.

Even a small amount of stubble can prevent RPE, forming a correct seal. This can mean while you are wearing the appropriate RPE, you’re still inhaling potentially harmful materials around the side of it, which may cause health issues.

Changing Filters

Change your filters and/or gas cartridges in the following scenarios:

- When the expiry date stamped on the packet has passed
- If it has been open for more than 6 months even if not used (Write the date on the filter once opened)
- When it becomes difficult to breathe comfortably (particulate filter)
- When it becomes dirty or physical damage occurs.
- If you can smell or taste the contaminant- however this should be avoided in the first instance as you are then breathing in the contaminant.

Looking after your Respiratory Protective Equipment

Maintaining your respirator

To maintain your reusable respirator to ensure it functions correctly you need to:

- Clean and disinfect it after using it for the day
- Inspect it to identify damage or defects
- Store it to protect it from damage

How to clean your respirator

Your reusable respirator should be cleaned after using it for the day. To clean and disinfect your respirator:

- Remove filters from face piece
- Wash the face piece in warm water with a mild detergent to remove dirt
- Wipe the face piece with a respirator cleaning wipe to disinfect it
- Rinse the face piece in warm water to remove traces of disinfectant
- Drain and allow to dry
- Reassemble respirator

Maintaining your respirator

To maintain your reusable respirator to ensure it functions correctly you need to:

- Clean and disinfect it after using it for the day
- Inspect it to identify damage or defects
- Store it to protect it from damage

How to store respirator

- Store your respirator in a plastic container or bag to protect it from dust, moisture or damaging substances.
- Makes sure the bag or container is big enough, so the respirator is not squashed and distorted
- Store in an area where it is not exposed to sunlight, heat, excessive cold
- Store filters in airtight container away from sunlight, heat, excessive cold

How to inspect your respirator

Inspect your respirator before or after cleaning it or before using it for the day:

Face piece – look for:

- Tears, holes in face piece
- Hardening or tackiness of face piece material
- Distortion of the face piece

Head straps – look for:

- Loss of strap elasticity, perishing
- Breaks or tears in straps
- Broken or defective straps or buckles

Inhalation and exhalation valves – look for:

- Dirt or residue in the valve
- Missing or defective valve cover
- Cracks tears, distortion in valve material or seal If you find any damage or defects do not use it - arrange for it to be replaced.

Particulate filters – look for:

- Increased filter resistance – check by putting respirator on and breathing through it
- Damage to filter – holes, tears
- Expiry date of filter – has it passed Replace filters if there is increased filter resistance, damage or filters have expired

Correct way to wear your respirator and check the seal

How to put on your disposable respirator



1. Place the respirator over your nose and mouth. Be sure the metal nose clip is on top.



2. Pull the top strap over your head until it rests on the crown of your head above your ears.



3. Pull the bottom strap over your head until it rests just below your ears.



4. Using both hands starting at the top, mould the metal nose clip around your nose to achieve a secure seal.

How to check the seal

Check the seal of your disposable respirator each time you put it on.

Positive pressure seal check for non-valved respirators

Place both hands completely over the respirator and exhale. The respirator should bulge slightly. If air leaks between the face and face seal of the respirator, reposition it and readjust the nose clip for a more secure seal.



If you cannot achieve a proper seal:

- Do not enter the contaminated area.
- Let your manager know

Negative pressure seal check for valved respirators

Place both hands over the respirator and inhale sharply. The respirator should collapse slightly. If air leaks between the face and face seal of the respirator, reposition it and readjust the nose clip for a more secure seal.



If you cannot achieve a proper seal

- Do not enter contaminated area
- Let your manager know

How to put on your reusable respirator



1. Place the respirator over your nose and mouth with bottom straps unfastened.



2. Pull the top strap over your head, placing the head cradle on the crown of your head.



3. Hook the bottom straps together behind your neck.



4. Adjust strap tension to achieve a secure fit.



How to check the seal

Check the seal of your reusable respirator each time you put it on.

Perform a positive and/or negative pressure user seal check each time you put on the respirator.

Positive pressure seal check

Place the palm of your hand over the exhalation valve cover and exhale gently. The face piece should bulge slightly. If air leaks between the face and the face seal of the respirator, reposition it and adjust the straps for a more secure seal.



Negative pressure seal check

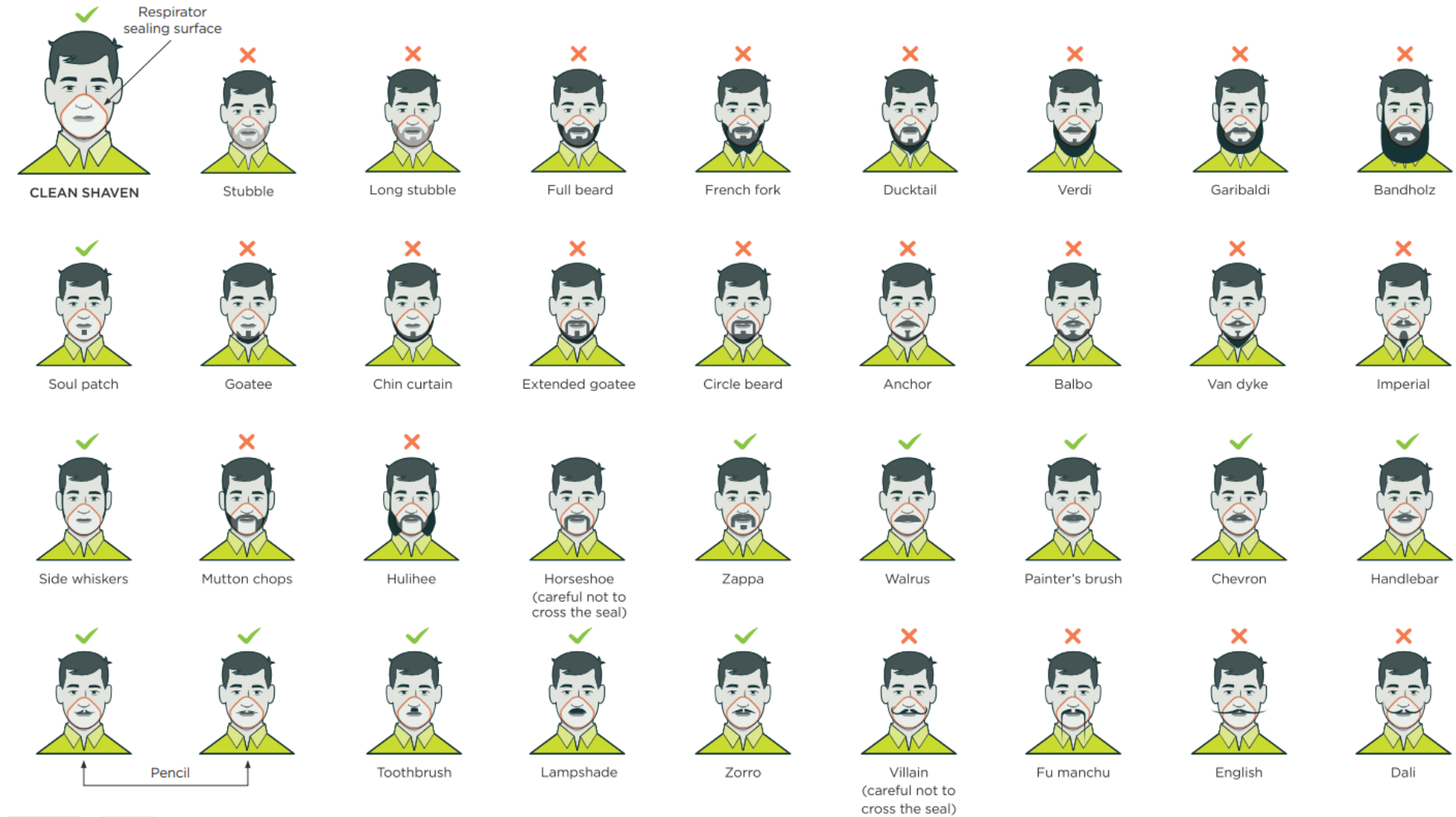
Place your thumbs over the centre of the filters and inhale gently. The face piece should collapse slightly. If air leaks between the face and the face seal of the respirator, reposition it and adjust the straps for a more secure seal.



If you cannot achieve a proper seal

- Do not enter contaminated area
- Let your manager know

Facial Hair Styles for RPE



Hearing Protection

Hearing protection is provided in two basic forms, either ear plugs (disposable or moulded), or earmuffs and they are all available in a selection of styles, types, and levels of protection that they provide.

Important Facts:

- Exposure to excessive noise (over 85dB) can cause permanent hearing loss
- Damage to hearing is one of the most widespread, yet preventable workplace injuries
- Hearing loss generally occurs over time, so may not be immediately noticeable

When does hearing protection need to be worn?

Even if only working in an area where noise levels exceed **85 decibels (dB)** for a short period of time you need to wear hearing protection. 85 dB is about the level of noise from city traffic from inside your car. Any level above this can cause damage, the level of damage is dependant on the level of noise and the length of exposure.

Worksafe suggest *"If you have to raise your voice to have a normal conversation when standing about a metre apart, for at least part of the day, then noise levels on the site could damage hearing."* Hearing protection alone should not be relied on to control noise exposure in noisy environments". Follow the hierarchy of controls for Elimination, Isolation, Substitution, or Engineering solutions to control noise in the workplace.

To choose the best hearing protection option you also need to factor in:

- What other PPE is being worn? - Choose something that will not be affected by other PPE - eg. slimline earmuffs that fit under helmets, hardhat earmuffs, or earplugs that don't get in the way of anything.
- How long is the equipment being worn for, and how often? - Choose something that will be comfortable to wear. Uncomfortable equipment can make workers reluctant to wear it or make them want to constantly adjust it or take it on and off which is dangerous.

Hearing protection is rated (or classed) by the level of protection provided as shown below:

Class	SLC 80 dB	For Use In Noise
1	10 - 13	Less than 90 dB(A)
2	14 - 17	90 to Less than 95 dB(A)
3	18 - 21	95 to Less than 100 dB(A)
4	22 - 25	100 to Less than 105 dB(A)
5	26 or Greater	105 to Less than 110 dB(A)

It is important to wear the right level of hearing protection for the area you are working in. Over protected workers typically compromise the fit by partially removing ear plugs or by lifting the cup on earmuffs to hear instructions, radio messages etc thereby reducing the overall level of protection.

Which form of hearing protection to choose?

Both **Earmuffs** and **Ear plugs** offer good levels of protection from noisy work environments, so the type and style become a personal preference.

Disposable earplugs fit inside the ear canal which some people find uncomfortable, whereas earmuffs require a certain amount of pressure to clamp to the head surrounding the ear and some people find this uncomfortable. Hence it is down to personal preference.

Moulded earplugs are specifically made to fit one person after being moulded by a specialist provider (eg trained audiologist). Ravensdown covers the costs of this process. This type of ear plug fits snugly into your ear canal and is often more comfortable when being worn over a longer period of time and are often more durable than the foam disposable ear plugs. To source moulded earplugs, find a local supplier in your area.






The tables below outline the various hearing protection options available through NZ Safety Blackwoods under each category.

Earmuffs:

Earmuffs offer a good level of protection, come in a variety of shapes sizes and styles, and need to be tried on prior to purchase to ensure a good fit.

Earmuffs offer protection to meet the requirements of class 3 to 5.






Earmuffs need to be replaced annually, to ensure a continued good fit to the head while the inner cushions need to be replaced 6-monthly.

Earmuffs	Use	Example
Hard hat attached earmuffs	Suitable to attach to slotted hard hats	
Folding Earmuffs	Fold down to a smaller unit, where limited storage is available	
Neck Band Earmuffs	Suitable where a head band on top of the head is not an option or is found to be uncomfortable	
Standard Earmuffs	Suitable option where hard hats are not required. Available in light weight and regular styles	
Replacement cushions and Hygiene kits	These are available for all makes and models of earmuff and should be purchased at the same time. Cushions should be replaced 6 monthly	





Ear plugs:

Ear plugs offer a good level of protection, come in a variety of shapes, sizes and styles and offer protection to meet the requirements for class 3 to 5. Like earmuffs which one you choose will come down to personal preference.



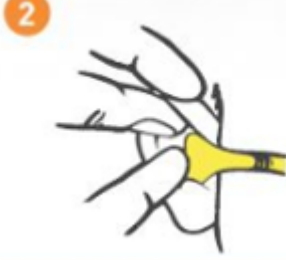

The soft foam earplugs are single use items whereas the Ultra fit style can be re-used for up to 3 months.

Ear plugs	Use	Example
Ear Bands. Fit into ears either from the front or rear	Suitable for Class 3 environments	
Ultra-fit earplugs Reusable, washable, individually packaged, comfortable fit	Available in class 3, 4 or 5 protection levels	
Ultra-fit Earplugs Available in single packets. Can be washed and re-used	Available in class 3, 4 or 5 protection levels.	
Foam Earplugs. Available in single packets or bulk.	Available in class 3, 4 or 5 protection levels Roll down between the thumb and finger before fitting into the ear canal, where they expand	
	Wall mounted dispensers are available for high use areas. Keeps plugs clean & dust free	

Different types of Earplugs:

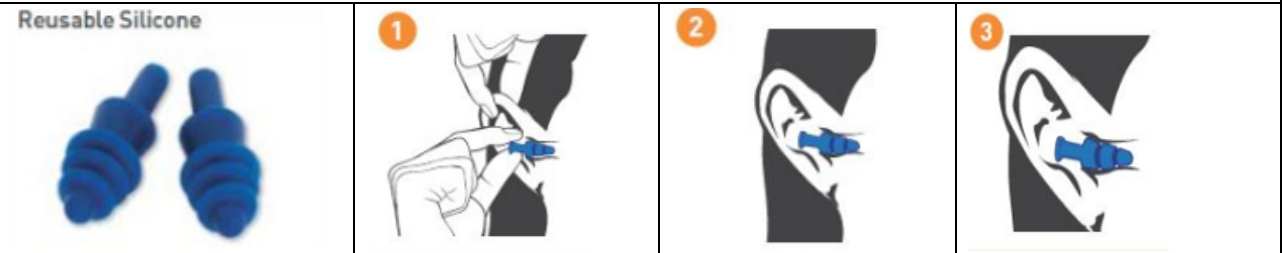
Type	
<p>Disposable Foam Earplugs: Earplugs are required to be rolled down between the thumb and finger before fitting into the ear canal, where they expand to offer a comfortable fit and a high level of protection. If hands are dirty when rolling, hygiene can be compromised</p>	
<p>Re-usable plugs: These earplugs do not need to be rolled down before insertion into the ear canal. Hygiene can be maintained with no contact required and they may be washed with a mild soap solution and re-used</p>	
<p>Corded Earplugs: These are available in both foam disposable and re-usable forms. The cords keep the earplugs more secure and joined helping to prevent contamination. The cord allows them to be hung around the wearers neck when not in use.</p>	
<p>Banded earplugs: Earplugs are held in the ear canal by the head band. These provide a comfortable fit for most wearers, they are easy to put on and off but be aware they <i>offer lower levels of protection than the other types shown above.</i></p>	

Earplugs: Care, use & Maintenance:

How to fit disposable foam earplugs			
Slowly roll and compress the foam earplugs into a very thin cylinder. While compressed insert the earplug well into the ear canal. Fitting is easier if you reach around the head and pull the ear outward and upward during insertion. Hold in position until the foam has expanded.			
<p>Disposable Foam</p> 	<p>1</p> 	<p>2</p> 	<p>3</p> 

How to fit re-useable earplugs

Reach around the back of your head and pull upward on the ear, while inserting the plug until you feel it sealing. This may seem tight at first, especially if you have not worn earplugs before.



How to fit banded earplugs

Hold the large ends of the pods and swivel them to direct the tips into the ear canal openings. Firmly push and wiggle the pods into the ear canal until a snug fit is obtained. Pulling on the outer ear while pushing the pods will be helpful for most wearers.



Care & Cleaning of your earplugs

Disposable earplugs are designed to be used and disposed of.

Keep the earplugs clean and free from material that may irritate the ear canal.

These earplugs cannot be washed and need to be replaced each day.

Pre moulded earplugs could last several months depending on the type, the amount of use and the work environment. They should be replaced if they shrink, harden, tear, or become deformed.

Wash them in warm soapy water and rinse well. When dry, store them in a carry case

Most **banded earplugs** can be cleaned in the same way as the re-usable varieties.

As the band provides pressure to keep the earplugs in position, do not tamper with it otherwise the protection provided by the earplugs will be reduced.





Safety Footwear

Ravensdown requires that the type & style of footwear selected is determined based on a risk assessment of the task and the work environment.

The risk assessment should consider:



1. Materials handled or used by the worker
2. Risk of objects falling or striking the foot
3. Materials or equipment that might roll over the foot
4. Sharp or pointed objects that might cut the top of the foot
5. Objects that may penetrate the bottom or side of the foot
6. Possible exposure to corrosive or irritating substances
7. Possible explosive atmospheres including the risk of static electrical discharges
8. Uneven work surface and the need for ankle support

Safety Footwear should feel comfortable right from the first fitting, without any suggestion that they may need more than minimal wearing-in.

Safety Footwear	Benefit	Example
Slip on safety boots	Easier to put on and off but lack the ankle support of other options. Only suitable for some roles. (Discuss with your Manager).	
Lace up boots	Standard lace up safety boots are available in various ankle heights.	
Zip Sided Lace up safety boots	Offer the ability of easy removal with the chance to adjust the fit with laces while offering ankle support.	
Chemical resistant options	Where exposure to acids and caustic chemicals is required as part of the job.	

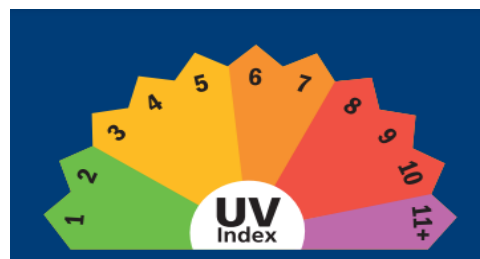
Safety Gumboots:

These are an option when required to work in wet environments or where there is a presence of corrosive substances and safety footwear is still required.

Gum boots	Use	Example
Available in a variety of fits and sizes	Impact resistant steel toe cap with acid/oil resistant outsole	
Chemical resistant options	Impact resistant steel toe cap with acid/oil resistant outsole Acid / Alkali resistant soles.	

Ultraviolet Protection

Protection from harmful Ultraviolet (UV) radiation is important when working in an outdoor setting, even on overcast days, especially for workers who are exposed over a long period of time. Some parts of the country experience higher levels of UV than others, in addition to variations in times of the day and year where the risk is greater, so these must be considered. Typically, protection between the hours of 10am and 4pm, UV radiation levels are often very high. Between September & April, **the UV index is 3 or higher** which indicates protection is required, especially for workers with fair skin. In the winter, the UV index can also be 3 or higher in some locations (mountains, in snow at high altitude), or in the majority of the North Island.



PPE and protection measures to be taken when the UV Index is 3 or higher may include:

1. Long-sleeved shirt with collar and trousers (light weight),
2. Hat with a brim
3. If a helmet is required to be worn, a neck guard can also be added to provide protection to the neck and ears.
4. Safety glasses that provide UV protection are also recommended.
5. Water-resistant, broad-spectrum sunscreen (> SPF30).
6. Limit time spent outside and rotate workers



Appendix 1. Task specific PPE

In addition to the minimum PPE requirements for individual sites, workers must wear the PPE outlined in the PPE by Task table below. A tick (✓) indicates this PPE is required. Additional text may clarify specific items to be worn.

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
Works, Stores, Quarries, Labs, Aerowork											
Acid Plant - acid line, circulation, storage area and handling dosing agents	Noise, Hazardous Substances, Airborne Contaminants	Overalls/ long sleeves & trousers	✓	✓	Acid resistant	Face shield/visor & glasses	✓				
Acid Plant - General maintenance work	Haz substances, Airborne contaminants, noise	Overalls/ long sleeves & trousers	Task Specific	✓	Task Specific	Face shield / goggles depending on risk to exposure to acid. Safety glasses for some tasks	✓	✓ Dependant on location on plant	Task Specific		Task Specific
Acid Plant - Steam lines	Hazardous Energy, Noise	Overalls/ long sleeves & trousers	✓	✓	Heat resistant	Face shield/visor & glasses	✓	✓			
Acid Plant - Turbine & blower room tasks	Noise, Hazardous energy	Overalls/ long sleeves & trousers		✓	✓	✓	✓	✓			
Acid Plant - Working near/in Sulphur Pits & general melter area	Sulphur, Airborne contaminants	Overalls/ long sleeves & trousers		✓		✓	✓	✓ Task specific	SO ₂ , H ₂ S		
Acid stack testing	Working at height, airborne contaminants	Overalls/ long sleeves & trousers	Acid resistant jacket & over trousers	✓	Disposable nitrile	✓	✓	✓ As passing through turbine room	SO ₂		Full face respirator when

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
											sampling port open
Air compressor use	Noise, airborne contaminants	Overalls/ long sleeves & trousers		✓	✓	Dust proof		✓			As required
Ambient F sampling (off site)	Driving on road, Hazardous substances			✓	Disposable nitrile						
Belt calibrations	Hazardous energy	As per product requirements		✓		✓		Area dependant			P2 disposable
Bulk Bagging	Air borne contaminants, traffic management	As per product requirements		✓	✓	Dust proof		Task Specific	Personal monitor to be used dependant on product mix		P2 disposable
Cleaning rollers	Noise, airborne contaminants	Overall/ long sleeves & trousers		✓	✓	Dust proof	Refer to SOP	✓			
Cleaning inside bins	Confined spaces, Noise, airborne contaminants	Overalls/ long sleeves & trousers		✓	✓	Dust proof	Refer to SOP	✓	Refer to SOP if in place		P2 filters half mask
Cleaning the dust cone	W@H, Airborne contaminants	As per product requirements		✓	✓	Dust proof	Refer to SOP	✓		Fall restraint	P2 disposable
Confined Space Entry	Confined spaces, Airborne contaminants, Noise	Dependant on type of confined space entry (eg contaminants within vessel)	Task Specific	✓	Task Specific	✓	If required in Risk Assessment	Task Specific	✓	If required in Risk Assessment	Task Specific
Den & Granulation sampling	Airborne contaminants, noise, hazardous substances	Overalls/ long sleeves & trousers		✓	Nitrile or grey heat-resistant gloves	✓	✓	✓			Min P2 + nuisance

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
											level acid gas
Despatch sampling	Airborne contaminants, hazardous energy	Overalls/ long sleeves & trousers		✓	✓	✓		Task Specific			✓
Driving Loader	Plant & equipment, Traffic management	Hi-vis		✓							
Electric/Air tools – grinders, drills, sanders, rivet gun, pedestal grinder	Airborne contaminants, noise, hot work	Cotton overalls/ long sleeves & trousers, hi vis		✓	✓	High impact protection face shield and glasses		✓			Task specific
Forklift use	Plant & equipment, traffic management	High vis		✓	Task specific	Task specific					
Handling Additives (Liquids)	Haz Substances, Airborne contaminants	Overalls/ long sleeves & trousers	Apron and gloves	✓	Chemical resistant gloves	Glasses & face shield/visor					
Handling Additives (Solids)	Haz Substances, Airborne contaminants	As per product requirements		✓	✓	Dust proof					P2 disposable
Handling Trace elements	Haz Substances, Airborne contaminants	As per product requirements		✓	✓	Dust proof					P2 disposable
Height's work	W@H, manual handling	Cotton overalls, hi vis	Task Specific	✓	Task Specific	As required		Task Specific		Harness system	Task Specific
Hot Work (incl welding)	Hot work, Airborne contaminants	Cotton overalls/ long sleeves & trousers		✓	✓ (Welding gloves when welding)	✓ (Welding mask)	✓ Welding Helmet (when welding)	✓			Welding cartridges if outside of welding extraction system
Housekeeping duties. E.g. Sweeping,	Airborne contamination, hazardous substances	As per product requirements		✓	✓	Dust proof					P2 disposable

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
cleaning, shovelling											
Lab general (Works & ARL)	Haz Substances	Lab Coat/ overalls	Chemical resistant apron when using HCl or Nitric Acid	Enclosed footwear	Disposable nitrile	✓		Task specific			Task Specific, fume hoods & scrubber
Lab Physical testing/lab grinding (Works & ARL)	Haz Substances, airborne contamination	Lab Coat or overalls		Enclosed footwear		✓		Task specific			Dust mask, dust extraction, fume hoods & scrubber where in place
Lab - repetitive tasks	Manual Handling	Dependant on the task, additional PPE may be required, including compression gloves. Gloves are a critical factor to help reduce injury from repetitive tasks									
Lab Hot Work (furnace, hotplates)	Hot Work	Lab Coat/ overalls		Enclosed footwear	Heat retardant/ resistant gloves	✓					
Lime – Grinding/crushing /drilling product	Airborne contaminants, noise	Overalls/ long sleeves & trousers		✓	✓	Dust proof	✓	✓			As required
Lime - Manual tasks, shovelling, removing hammers from Mill	Manual handling, airborne contaminants, Hazard Energy	Overalls/ long sleeves & trousers		✓		✓	✓	✓ If plant is operational			As required
Lime - Working dusty environment	Airborne contaminants	Overalls/ long sleeves & trousers		✓		Dust proof	✓	✓ If plant is operational			As required
Manufacture Den dig out	Haz Substances, Airborne contaminants, Confined space	Overalls/ long sleeves & trousers	✓	✓	✓	✓	✓	✓	✓		✓

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
Manufacture Drum Clean	Haz Substances, Airborne contaminants, Confined space	Overalls/ long sleeves & trousers		✓	✓	✓	✓	✓	✓		✓
Manufacturing general cleaning	Haz Substances, Airborne contaminants, manual handling	Overalls/ long sleeves & trousers		✓	✓	✓	✓	✓			As required
Manufacturing general, including plant checks	Airborne contaminants, hazardous substances	Overalls/ long sleeves & trousers		✓	Task Specific	✓	✓	✓	Task Specific		Min P2 + nuisance level acid gas
Manufacture Mill work	Noise, Airborne contaminants	Overalls/ long sleeves & trousers		✓	Task Specific	Dust proof	✓	Task Specific			As required
Manufacture Mixer Clean	Haz Substances, Manual handling	Overalls/ long sleeves & trousers	Apron	✓	✓	✓	✓	✓			As required
Manufacture Stack testing	W@H, airborne contaminants	Overalls/ long sleeves & trousers		✓	Disposable nitrile	✓	✓	Task Specific			
Manufacture Scrubber clean (incl. working in Confined Space)	Haz Substances, confined space, Manual handling, Haz energy	Overalls/ long sleeves & trousers	✓	✓	✓	✓	✓	Task Specific	✓		Min half/full face fitted respirator
Manufacture Venturi/FSA sampling	Haz Substances, Airborne contaminants.	Overalls/ long sleeves & trousers	PVC Apron may be required (Risk Assessment dependant)	✓	Rubber acid resistant with nitrile underneath	Glasses & face shield/visor	✓	Task Specific			P1 mask, carbon filter
Water Blaster	Airborne contaminants, noise	Overalls/ long sleeves & trousers		✓	✓	✓		✓			

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
Workshop - tools & equipment	Manual handling HEI	Refer to local risk assessment for tools used on site									
Workshop - Lathe/drill/mill	Manual handling, airborne contaminants	Cotton overalls, hi vis		✓		Face shield		✓			Task specific
On Farm – Agri Managers / Environmental											
On farm / Orchard – Summer months	Driving on farm and on road, weather	Long sleeved shirt/trousers, Sunscreen, hat		Lace up boots			ATV helmets when using ATV on farm	Task specific around noisy farm equipment		PLB	
On farm / Orchard – wet weather	Driving on farm and on road, weather	Wet weather gear as required		Gumboots (optional)			ATV helmets when using ATV on farm	As required around noisy farm equipment		PLB	
Quad bike, electric bike or side x side use	Equipment rollover	High vis vest or jacket		Lace up boots			ATV helmet with chin strap	As needed		PLB	
Soil Testing	Even ground surfaces			Lace up boots						PLB	
Stormwater sampling	Water			✓	Disposable nitrile					PLB	
Aerowork Specific											
Aerowork worker working on farm	Vehicle operation on farm	Cotton overalls		✓						PLB or within reach	

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
Air compressor	Noise, airborne contaminants	Overalls/ long sleeves & trousers		✓	✓	Dust proof		✓			As required
Aircraft Loader recovery operation (towing)	Traffic management, Driving on road & farm	Cotton overalls		✓	✓	✓		✓ (Dependent on loader type)		PLB or within reach	
Aircraft Loader Maintenance Fuel sampling, greasing etc	Haz Substances, Manual handling	Cotton overalls		✓	Chemical resistant gloves	✓				PLB or within reach	
Bead blaster – use of	Manual handling	Cotton overalls, hi vis		✓	Disposable gloves/hygiene	Sealed safety eye protection		✓			
Crane truck	Crane, Lifting	Task specific		✓	Task specific	Task specific	✓				
Finisher – use of	Noise, manual handling	Cotton overalls, hi vis		✓		Sealed safety eye protection		Task specific			Task specific
Guillotine/Folder – use of	Manual Handling	Cotton overalls, hi vis		✓	Cut resistant gloves	✓					
Heights work – (including in Fert. Bins)	W@H, manual handling	Cotton overalls, hi vis	Task Specific	✓	Task Specific	As required		Task Specific		Harness system	Task Specific
Loading Aircraft with fertiliser	Aircraft operation	Cotton overalls		✓		✓		✓ (Dependent on loader type)		PLB or within reach	Dust mask if conditions require
Paint stripping	Haz substances, airborne contaminants	Disposable overalls	Disposable overalls	✓	Chemical rated	✓					Full face respirator
Refuelling/defueli ng aircraft, loader, portable motors,	Haz Substances	Cotton overalls, hi vis		✓	Chemical resistant gloves	✓		✓		PLB or within reach	

Task (Alphabetical Order)	Primary Critical Risk Involved	Clothing (outer layer of clothing must be hi vis)	Chemical Resistant Clothing	Safety Footwear	Hand Protection	Safety Eyewear	Head Protection	Hearing Protection	Gas Monitors	Rescue Equip	RPE
(Diesel, AdBlue, Jet A1, Petrol)											
Spray painting	Haz substances, airborne contaminants	Deposable spray overalls (not hi vis)	Deposable spray overalls	✓	High risk Deposable gloves	✓					Task specific – air fed/full face/half mask
Traveling in aircraft loader	Traffic Management, Driving on road	Cotton overalls, hi vis		✓				✓ (Dependent on loader type)		PLB or within reach	
Traveling in aircraft (Pilot)	Aircraft operation	Cotton overalls or Nomex with hi-vis		Light weight boots/foot wear (do not need steel caps)		Visor on helmet	Helmet	✓		PLB or within reach	
Traveling in aircraft (passenger)	Aircraft operation	Cotton overalls with hi-vis		✓			Helmet	✓		PLB or within reach	
Unloading Bulk 1 ton fertiliser bags on farm. Handling 25 kg seed bags on farm	Airborne contaminants, Traffic Haz Substances, Manual handling	Cotton overalls		✓	Gloves if using cutting tool	Dust proof				PLB or within reach	Dust mask
Working around aircraft with engine running (attaching spreader)	Noise, Aircraft operations	Cotton overalls, hi vis		✓		Dust proof		✓		PLB or within reach	