



PERSONAL PROTECTIVE EQUIPMENT (PPE) GUIDE

European regulations mandate that employers must purchase and provide free of charge any equipment that is required to keep employees safe on the job. The type of Personal Protective Equipment (PPE) necessary depends on the type of industry (be it construction, railway maintenance, lab work, welding, electrical engineering, and so forth), the level of exposure (to elements, chemicals, particles, head or eye injury, and so forth), and the type of protection needed (waterproof, weatherproof, insulated clothing, a combination, etc.). There are seven PPE categories to consider with specific stipulations and regulations notated for each:




Hearing Protection	2	Hand and Arm Protection	6
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The Health and Safety Executive website ([hse.gov](https://www.hse.gov.uk)) provides comprehensive information as to which type of equipment is needed, and the regulations to follow.

HEARING PROTECTION

Required when noise exceeds upper exposure action values. Should be optional/available when noise exposure is between lower and upper exposure action values.





Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/ Disadvantages	Selection Process	Fit Testing
Corded / Banded Ear Plugs 	EN 352-1:2002 Hearing protectors - Ear muffs EN 352-2:2002 Hearing protectors - Ear plugs EN 352-3:2002 Hearing protectors - Ear muffs attached to a safety helmet EN 352-4, EN 352-5, EN 352-6, EN 352-7, EN 352-8, etc; EN 458:2004 Hearing protectors- Selection, use, care and maintenance	<ul style="list-style-type: none">- Works effectively- Good, clean condition- Undamaged seals- Headband tension not reduced- No unofficial modifications- Check for wear and tear- Disassemble ear muffs to clean- Wash with mild liquid detergent and rinse in warm water- Ensure sound attenuating material inside ear cushions does not get wet- Remove skin, oil, and dirt that can harden ear cushions with a soft brush- Squeeze excess moisture from ear cushions and place on clean surface to air dry	<ul style="list-style-type: none">- kept in cases to protect from contamination, loss, damage, damp, or sunlight- replace pods every 2-4 weeks	<ul style="list-style-type: none">- Replace when product shows wear and tear- Replace when earplugs are no longer pliable- Replace when headbands are stretched -replace 6-8 months for normal wear and 3-4 months with heavy use or humid/extreme climates when ear cushions degrade	Pro: <ul style="list-style-type: none">- Less variation amongst users- One size fits most heads- Easily seen at a distance- Not easily lost Con: <ul style="list-style-type: none">- May be worn with minor ear infections- Heavier and less portable- Uncomfortable in hot, humid areas- Inconvenient for confined spaces- Can interfere with prescription glasses (breaks seal and causes decreased hearing protection)	<ul style="list-style-type: none">- Should provide desired noise reduction (but not eliminate all noise, creating isolation)- Comfortable- Suitable- NRR (noise reduction ratings available for each product)	<ul style="list-style-type: none">- Ensure tight seal with ear canal or against side of head- Hair and clothing should not be in the way- For earplugs, most of the foam body should be in the ear canal- Cup hands over your ears, and when you remove them, the sound level should not be different (if it is the seal hasn't been put in place properly)
Ear Muffs 			<ul style="list-style-type: none">- store in case- replace when ear cushions and foam inserts degrade				
Helmet Mounted Ear Muffs							
Disposable Ear Plugs 		<ul style="list-style-type: none">- Works effectively- Compressible earplugs are soft, pliable, and clean- Wash earplugs in soapy water and rinse; squeeze excess moisture; air dry	<ul style="list-style-type: none">- can use with ear plug dispensers- kept in cases for reuse or disposed daily				

HEAD PROTECTION

Compulsory in industries where there is risk of being injured from falling objects, or areas of limited of head space. (I.e. Construction, Roofing, Power Line Maintenance, Forestry, Mining, Road Construction and maintenance, Railway Maintenance Work, et cetera.)





Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/Disadvantages	Selection Process	Fit Testing
<div>Safety Helmets and Hard Hats</div> <div></div>	<div>EN 397 European regulation that specifies requirements needed for safety hats to be fit for purpose</div> <div>Hard Hat Colour Code for Different On-Site Roles</div> <div>Need to fit with Personal Protection Equipment Regulations (2002)</div>	<div>- Inspect suspensions before each use</div> <div>- Inspect for cracking and gouging (replace immediately if these are found)</div> <div>- Ultraviolet exposure, extreme temperatures, chemical exposure, and daily wear can affect the hat's lifespan</div> <div>- Prolonged sunlight exposure can cause flaking and cracking of the shell</div> <div>- Chemicals can impact protective measures</div> <div>- Clean once a month by soaking in mild soap and hot water for 5-10 minutes; rinse with clean water, wipe, and air dry</div>	<div>- Store in hard hat storage racks (vehicle or company racks), or let employee store hat for use each day</div>	<div>- Manufacturer's suggest replacing hard hat's every 5 years</div> <div>- It's recommended to replace them every 2 years if they are exposed to high temperatures, extreme sunlight, or adverse conditions</div> <div>- Replace when cracked or gouged</div> <div>- Internal suspension needs replacing every 12 months</div>	<div>- High-impact head protection</div> <div>- Can be used with face visors and clip on ear protection</div>	<div>- Type II (type 2) hats are heavier, but provide added protection</div> <div>- Consider what suspension needed (internal framework), comes in 4, 6, or 8 point suspensions</div> <div>- Electrified environments require dielectric hats, either class G (up to 2.2k volts), or Class E (up to 20k volts)</div> <div>- Class C hats are conductive and offer no electrical hazard protection</div> <div>- Colour coding/customization</div>	<div>- Adjust hat to fit comfortably on the head</div> <div>- Find ample webbings and padding</div> <div>- Find hard hat with adjustable, personal fit</div> <div>- Add liners and accessories for added comfort</div>
<div>Bump Caps</div> <div></div>					<div>- Where high-impact protection not needed to protect from bumps and scrapes</div> <div>- Lightweight version of hard hat</div>		
<div>Helmet Accessories</div>					<div>- Various accessories available to make employees more comfortable such as:</div> <div>- Sweat bands</div> <div>- Chin straps</div> <div>- Winter liners</div> <div>- Tags</div> <div>- ID cards</div>		

EYE PROTECTION

Many workplace environments require mandatory eye protection. Eye injuries can cause pain, loss of time, money, and sight. Many industries require day-to-day tasks that produce flying debris or chemical splashes that can cause serious eye injuries.







Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/Disadvantages	Selection Process	Fit Testing
<div>Clear / Tinted Safety Glasses</div> <div></div>	<p>EN 166 Requires eye protection in industries with potential eye hazards, or anything likely to impair or damage vision. Exemptions for nuclear radiation, x-rays, laser beams, and low temperature infrared</p> <p>EN 170 Ultraviolet filters</p> <p>EN 171 Infrared filters</p> <p>EN 172 Sunglare filters for industrial use</p> <p>EN 175 Eye and face protection during welding</p>	<ul style="list-style-type: none">- Clean daily following manufacturer's instructions- Blow loose dirt and debris from the lenses; rinse under running water (with or without detergent); or use lens cleaning wipes or spray- Store in a safe place in cases or in any other clean, dry place- Avoid rough handling as scratches impair vision and weaken lenses	<ul style="list-style-type: none">- Store in cases or another clean, dry place to avoid scratching, falling, or being trodden on	<ul style="list-style-type: none">- Despite condition, glasses should be replaced at least every 3 years- Replace damaged, scratched, pitted, broken, bent, or ill-fitting glasses as these do not provide protection- Replace damaged parts with original manufacturer parts only to ensure the same safety rating	<ul style="list-style-type: none">- Clear provides standard protection- Amber removes blue light for low-light environments- Grey and brown SCT protect from sun glare, UV rays, and impact for outdoor use	<ul style="list-style-type: none">- Choose based on colour of lens and comfort- Glasses/goggles should fit close to the face to minimise gaps- Find a style that is comfortable to wear	<ul style="list-style-type: none">- Eye size, bridge size, and temple length vary; glasses should be individually fitted- Temples should fit comfortably over the ears- Frame should be as close to the face as possible with adequate support on the bridge of the nose
<div>Safety Goggles</div> <div></div>					<ul style="list-style-type: none">- For areas with dust and airborne debris		
<div>Overspecs</div>					<ul style="list-style-type: none">- For use by individuals who wear glasses- Protect eyes and glasses in laboratories, manufacturing, and construction		
<div>Visors / Browguards</div>					<ul style="list-style-type: none">- Visors and browguards are worn together to provide complete face protection from chemical splashes, molten metal, high velocity impact (from cutting and grinding)	<ul style="list-style-type: none">- Visors attach to browguards- Adjust browguard to fit comfortably but snugly on head (many come with adjustable head gear)	
<div>Accessories</div>					<p>Holders, neck cords, cases, cleaning equipment, and so forth available.</p>	<ul style="list-style-type: none">- Find as needed	

FOOT PROTECTION

Safety footwear protects from cuts, slips, falling objects, metal, and chemical splashes, and have soles to prevent slips in most environments. The HSE sets minimum standards for safety footwear.





Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/Disadvantages	Selection Process	Fit Testing
<div>Safety Boots / Anti-Slip Footwear / Safety Trainers</div> <div></div>					<div>- Various safety styles provide some or all of the following features: waterproofing, heat resistance, shock absorption, rubber soles, anti-slip soles (with variations), and/or internal toe caps</div>		
<div>Work Boots / Rigger Boots / Foundry Footwear</div> <div></div>	<div>EN ISO 20344:2004 (A1:2007), EN ISO 20345:2004 (A1:2007) European Standard for Safety Footwear</div> <div>EN ISO 20346:2004 (A1:2007) Standard for protective footwear</div> <div>EN ISO 20347:2004 (A1:2007) Standard for occupational footwear</div>	<div>- Keep footwear clean</div> <div>- Protect from water damage</div> <div>- Wash and dry feet daily</div> <div>- Polish leather footwear and remove debris with a brush</div> <div>- Clean soles by brushing and washing</div> <div>- Air dry; never force dry</div>	<div>- Store in a cool, dry place away from direct sunlight</div>	<div>- The average “boot life” is around 6-12 months</div> <div>- Replace when defective or worn</div>	<div>- Choose depending on industry for differing safety needs</div> <div>- Some include waterproofing</div> <div>- Foundry shoes protect the foot and ankle</div>	<div>- Selection depends on type / purpose / safety rating of footwear needed for specific industry</div> <div>- Employee preference (within the standards) for comfort and size</div>	<div>- Fit and comfort depends on each individual</div> <div>- Size guides available for footwear; comfortable, safe footwear is paramount in workplace</div>
<div>Wellington Boots / Snow Chains</div> <div></div>	<div>EN345 / EN ISO 20345 European Standard for Anti-Slip Footwear</div> <div>Tests:</div> <div>SRA Tested on ceramic tile wetted with a dilute soap solution</div> <div>SRB A smooth surface test on steel coated with glycerol</div> <div>SRC Tested under both of the above conditions</div>				<div>- Wellington boots provide waterproofing from thigh waders to full chest waders</div> <div>- Snow chains provide ice grips to stay steady in the snow to be worn with safety shoes or boots</div>		
<div>Socks / Accessories</div> <div></div>		<div>- Wash socks daily</div> <div>- Maintain accessories according to manufacturer directions</div>	<div>- Store as appropriate</div>	<div>- Replace when worn as needed</div>	<div>- Provide warmth, and comfort</div>		

HAND AND ARM PROTECTION

Hand protection gloves and sleeves maximise safety, and comply with international and European safety laws.







Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/Disadvantages	Selection Process	Fit Testing
<div>Construction / Engineering Gloves<ul style="list-style-type: none">- Anti-vibration gloves- Builders Grip Gloves- Rigger Gloves- General Purpose- Leather Gloves- Specialist Gloves</div>	EN420 General Regulation for Gloves <ul style="list-style-type: none">- Shouldn't impose risk or injury- pH close to neutral - Leather gloves should have pH between 3.5 - 9.5	<ul style="list-style-type: none">- Examine before wear in case of manufacturing defects- Wash/dry (or dispose) gloves properly- Don't touch contaminated gloves with bare hands- Wash hands when taking gloves off	<ul style="list-style-type: none">- Store in cool, dry place, away from chemicals- Don't store inside out- Store disposable gloves in the container they came in to avoid contamination and dispose of them after each use	<ul style="list-style-type: none">- Replace when worn or torn- Replace when heavily soiled- Replace every day to every three weeks, depending on type of gloves- Extend glove life by washing and rotating gloves- Always inspect gloves before use to ensure they are safe	<ul style="list-style-type: none">- Protect wearer from machinery vibrations- Worn in construction, engineering, quarrying, agriculture, and auto-repair- provide grip, comfort, and protection- Worn by those in construction for bricklaying, woodworking, heavy machinery operation, working with glass, and/or heavy duty tasks	<ul style="list-style-type: none">- The type of glove needed depends on the type of job you're doing- Select for needs - vibration, disposable, cut-resistant - and comfort	<ul style="list-style-type: none">- Each type of glove has required fit standards- Find out which glove fits your hand size- With disposable gloves, gloves that are too small can tear and present hazards and dangers of contamination so always make sure gloves fit before use- Measure the circumference of your dominant (largest) hand; the measurement will determine hand size; check manufacturer labels to determine your size
<div>Medical / Chemical Industry Gloves<ul style="list-style-type: none">- Disposable Gloves- PU Coated Gloves- Nitrile Coated- Thermal Gloves- PVC Coated Gloves</div>				<ul style="list-style-type: none">- Replace after each use, and when moving from task to task- Daily replacement	<ul style="list-style-type: none">- Resistant to chemicals and tears for use in medicine, catering, chemical industries, police and emergency services, and janitorial, refuse, and waste		
<div>Welding / Factory / Engineering Gloves<ul style="list-style-type: none">- Cut Resistant Gloves- Heat Resistant- PU Coated Gloves</div>		<ul style="list-style-type: none">- Highest value for chromium is 3mg/kg (chrome VI)- Details of any known allergy-causing substance- Sized by reference according to European sizing standards		<ul style="list-style-type: none">- Replace when worn or torn- Replace when heavily soiled- Replace every day to every three weeks, depending on type of gloves	<ul style="list-style-type: none">- Cut Resistant, for workers exposed to sharp tools (not cut proof, only cut resistant)- Heat resistant to protect against moist heat, thermal or atmospheric- PU, for use in clean rooms, non-shredding, grip, puncture resistant		
Protective Sleeves		<ul style="list-style-type: none">- Wash daily- Do not touch contaminants on sleeves- Wash hands after handling and removing- Discard of any disposable protective sleeves daily or as needed (after each use)	<ul style="list-style-type: none">- Store in a cool, dry place away from contaminants	<ul style="list-style-type: none">- Extend glove life by washing and rotating gloves- Always inspect gloves before use to ensure they are safe	<ul style="list-style-type: none">- Can find sleeves with cut, heat, and chemical resistances	<ul style="list-style-type: none">- Fit and type needed depends on purpose	

BODY PROTECTION

Body protection may be required for work outdoors to protect against the weather, to provide high visibility, and when exposed to extreme temperatures (indoors or outdoors), chemical or metal splash, spray from pressure leaks or spray guns, impact or penetration, contaminated dust, excessive wear, when there's a risk of entanglement, or risk of drowning.




Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/Disadvantages	Selection Process	Fit Testing
<div>Insulated Coats and Trousers<ul style="list-style-type: none">- Fire Resistant- Heat Resistant- Cold Resistant</div>	<p>Not a comprehensive list of the regulations for protective clothing:</p> <p>EN ISO 20471:2013 High visibility clothing</p> <p>EN 14058:2004 Protective clothing - Garments for protection against cool environments</p> <p>EN ISO 14877:2002 Protective clothing for abrasive blasting operations using granular abrasives</p> <p>EN ISO 15025:2002 Protective clothing - Protection against heat and flame</p>				<ul style="list-style-type: none">- Insulated wear provides protection in cold environments- Differing coats and trousers used for fire, heat, and cold resistance		
<div>Hi-Vis Trousers (Heavy and Lightweight, Two Toned, Waterproof)</div>	<p>EN ISO 14877:2002 Protective clothing for abrasive blasting operations using granular abrasives</p> <p>EN ISO 15025:2002 Protective clothing - Protection against heat and flame</p>	<ul style="list-style-type: none">- Clean regularly/daily according to manufacturer instructions (will vary for differing types of clothing)- Repair when possible, or replace if not- Employers are responsible for cleaning, disinfecting, and maintaining as needed	<ul style="list-style-type: none">- Store in a cool, dry place / according to manufacturer instructions- Decide if it's stored at work or at the employee's home- PPE should be stored properly or there's risk for deterioration from exposure to dirt, oil, UV rays, sunlight, and so forth, shortening the life of the clothing	<ul style="list-style-type: none">- Replace when worn and safety is compromised- With clothing, it's obvious when it's worn and needs replacing - can last months to years depending on exposure and work environment- Check for defects (broken, missing, in need of maintenance, burns, spills, excess soiling, tears, deterioration, etc.)	<ul style="list-style-type: none">- Hi-Vis needed when wearer needs to be visible- Varying protective dependent on need measures (lightweight, two tones, waterproof, heavy, etc.)	<ul style="list-style-type: none">- Type of workwear (i.e. hi-vis, lightweight, warm, coverall, cold resistant, etc.) dependent on industry, safety needs, and working conditions (i.e. outdoor work in the cold, etc.)- Consider thermal comfort (sweating for example)- Cost and ease of cleaning- Emergency procedures (buoyancy, need to be identified or spotted in hazardous situations)- Consider level of hygiene control needed- Personal contamination- Preference- Restriction of movement- Temperature- Wet/dry process of working conditions	<ul style="list-style-type: none">- Fit depends on individual's size, safety, preference, and comfort needs- PPE must be suitable for the job and environment
<div>Hi-Vis Jackets, Vests, Bombers, Hoodies, and Parkas (Heavy and Lightweight, Two Toned, Waterproof)</div>	<p>EN 14605:2005+A1:2009 Protective clothing against liquid chemicals</p> <p>EN 15614:2007 Protective clothing for firefighters</p> <p>EN ISO 17491-4:2008 Protective clothing - Test methods for clothing providing protection against chemicals</p> <p>EN 50286:1999 Electrical insulating protective clothing for low-voltage installations</p>						
<div>Standard or Zip Coverall</div>	<p>EN ISO 15027-1:2012 Immersion suits</p>				<ul style="list-style-type: none">- Protect entire body from elements- Some designed to protect chemical exposure, laboratory waste, or pesticides- Fire resistance available		

RESPIRATORY PROTECTION

Hand protection gloves and sleeves maximise safety, and comply with international and European safety laws.



Type of PPE Equipment	Regulation Standard	Maintenance	Storage	Replacement Rate	Uses/Advantages/Disadvantages	Selection Process	Fit Testing
Disposable (FFP1, FFP2, FFP3) Respirators / Dust Masks / Respiratory Filters (various brands) 	EN 149 European standard for general requirements and markings required for respiratory protection equipment to be fit for purpose						
Half and Full Face Masks		<ul style="list-style-type: none">- Inspect before each use- Clean and sanitize after each use- Record inspection dates, finding, and repairs	<ul style="list-style-type: none">- Clean and store in a way that protects respirator from damage- Dust, sunlight, humidity, extreme cold/heat, and chemicals can damage a respirator	<ul style="list-style-type: none">- Manufacturer for each product will specify replacement rate / replacement filter rate (daily, weekly, after so much exposure) of the product	<ul style="list-style-type: none">- Type of RPE depends on amount of hazardous substance in the air, nature of the work, and form of substance encountered (gas, vapour, particles, etc), specific worker requirements (i.e. if wearer has glasses)	<ul style="list-style-type: none">- Conduct risk assessment to determine type of filtration and protection needed	<ul style="list-style-type: none">- Employers required to conduct fit tests for tight-fitting facepieces (full, half, or disposable masks)
Powered Respirator		<ul style="list-style-type: none">- Emergency use respirators need to be checked monthly for tightness of connection, head straps, valves, tubes, cartridges, canisters, filters, rubber, elastic, and moveable parts for signs of deterioration	<ul style="list-style-type: none">- Store in cool, dry place out of sunlight- Remove cartridges (if any) and store in airtight zip lock plastic bag when not in use	<ul style="list-style-type: none">- Single use respirators must be disposed of after use or when soiled, damaged, or if it becomes difficult to breathe	<ul style="list-style-type: none">- Disposable filters have a rate of filtration (from 80% filtration to 99% filtration)		
Fit Test Kits							



CONCLUSION

Select, care for, and replace PPE equipment when needed (or when the manufacturer recommends). Depending on the work environment, some equipment will need frequent replacement. The types, styles, and fit of PPE equipment will also vary from employee to employee; it's vital that employees are not only safe in equipment, but it is also comfortable: an employee who isn't comfortable may choose not to wear the equipment or wear it improperly. It's recommended you consult each individual - to some degree - or ask around to discover which equipment is comfortable, lasting, and safe.

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