

# Personal Protective Equipment for Sanitation Workers

When to use PPE?

Appropriate Combinations of PPE for various  
Sanitation Workers





# When to use PPE?

Categories of PPE their details and when to use them?

# When to use PPE?



## Head Protection

Should be worn in case of physical hazards such as impact due to falling object or collision with fixed objects at workplace. Type of helmet depends on the physical risk present at the workplace.



## Ear Protection

Should be worn in case of risk of exposure to high decibels noise at the workplace. They are also recommended where continuous exposure to mist or droplets of fluid / spray is expected.



## Face Protection

Should be worn where there is risk of continuous droplets or splashes of fluids, heat from hot solid bodies and electric arcs.



## Eye Protection

Should be worn in case of risk of incidental impact of fragments and dusts, gases and droplets or splashes of fluids.



## Lung protection: Respirators

Should be worn when working in confined space where there is risk of oxygen deficiency and / or when concentration of toxic substances are at dangerous levels.



## Lung protection: Face Masks

Should be worn when there is risk of solid and liquid particles including nanoparticles such as dusts, fumes, mists, fibers, vapors, gases and microorganisms.

# When to use PPE?

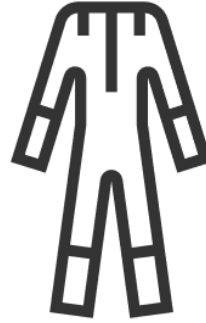


## Hand Protection

Hand protection are classified as mechanical resistant and chemical resistant gloves.

*Mechanical resistant* are recommended where there is higher risk of abrasion, cut, tear or puncture and incidental contact with hazardous liquids.

*Chemical resistant* gloves are recommended where intentional contact with the hazardous liquid is expected and there is higher risk of penetration or permeation of chemicals into the glove.



## Body Protection

Body protection are used for as chemical & biological hazards, thermal hazards and high visibility. Further intentional and incidental exposure to hazard determines the type of body protection.

These hazards in sanitation are mostly due to incidental exposure to hazardous substance. Intentional exposure is only observed in case of sewer workers engaged in manual cleaning of sewerage systems and septic tanks.



## Foot Protection

Foot protection is recommended to protect the workers from physical and chemical hazards at the workplace.

Foot protection helps to avoid injuries arising from contact from falling, rolling or cutting object, penetration from soles and uppers, contact with hazardous substances and slipping and falling on wet surfaces.

Types include – safety footwear, protective footwear and occupational footwear

Material – Leather and similar material, rubber or all polymeric material.



# Appropriate Combination of PPE

## Sanitation Workers in Liquid Waste Management

Desludging Staff, Mechanized Sewer Cleaning Staff and  
Treatment Plant Staff involved in O&M activities

## HEAD PROTECTION



### Hard Hat

Hard Hat with shell made out of Polypropylene Co-Polymer with headband, harness, sweatband, peak and chinstrap.

Recommended for use only when hazard of falling object, working at height or near open chambers.

## EAR PROTECTION



### Ear Plugs

Corded, flanged shaped ear plugs made out of non irritant and non allergic material. The ear plugs should be washable and reusable.

Recommend for use only in case of noise hazard.

## FACE PROTECTION



### Face Shield

Face shield made out of clear Polycarbonate having size 8.0" x 15.5" and thickness of 1.0 mm. The shield should be compatible with the safety hard hat.

## EYE PROTECTION



### Safety Goggles

Safety goggles must be light weight made out of clear Polycarbonate material offering high impact resistance and 99.9% UV protection.



## LUNG PROTECTION



### N 95 Face Mask

N 95 face mask with exhalation valve and straps made out of Thermoplastic Elastomer, Aluminium nose clip, Polyurethane nose foam, Polypropylene filter, Polyester shell and cover web.

## HAND PROTECTION



### Mechanical Resistant Gloves

Mechanical resistant, nitrile coated gloves having nylon lining, specialized grip such as dotted or sandy and knitted cuffs.

Recommended to be worn for jobs which might include incidental contact with liquid hazardous waste or chemical.

## HAND PROTECTION



### Chemical Resistant Gloves

Chemical resistant, nitrile gloves having flock lined inners, diamond finish grip, straight cuff, minimum thickness of 0.38 mm and length of 330 mm.

Recommended to be worn on jobs which includes continuous and intentional contact with liquid hazardous waste or chemical.

## BODY PROTECTION



### Full Sleeves Shirt

High visibility full sleeves shirt made out of high wicking polyester for comfortable use in hot and humid conditions.

Presence of reflective strips for high visibility in low light conditions is optional.

## BODY PROTECTION



### Full Length Pants

High visibility full length pants made out of polyurethane coated breathable polyester for comfortable use in hot and humid conditions and easy cleaning.

Presence of reflective strips for high visibility in low light conditions is optional.

## FOOT PROTECTION



### Protective Footwear

Protective footwear having steel toe with upper body made out of grain leather and polyurethane outsole for protection against physical hazards.

Ankle length shoes when paired with full pants provides complete protection from incidental splashes of hazardous liquids.



# Appropriate Combination of PPE

## Sanitation Workers in Liquid Waste Management

Sewer workers involved in manual cleaning of sewerage network or septic tanks.



## HEAD PROTECTION

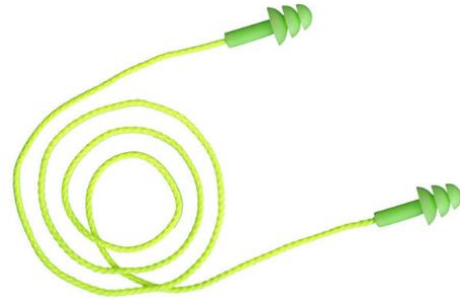


### Hard Hat

Hard Hat with shell made out of Polypropylene Co-Polymer with headband, harness, sweatband, peak and chinstrap.

Use of hard hat is mandatory when working in confined spaces such as sewerage system or tanks.

## EAR PROTECTION



### Ear Plugs

Corded, flanged shaped ear plugs made out of non irritant and non allergic material. The ear plugs should be washable and reusable.

Recommend for use only in case of noise hazard.

## LUNG PROTECTION



### Full Face Respirator

Full face respirators with replaceable filter cartridge. The mask is made out of clear Polycarbonate material and have high impact resistant. The silicone seal around the mask and thermoplastic elastomer, makes it air tight.

## LUNG PROTECTION



### PAPR

Powered Air Purifying Respirator are full face respirator with battery powered blower.

It is recommended for use in confined spaces which are well ventilated having concentration of the toxic substances at dangerous levels.

## LUNG PROTECTION



### SCBA

Self Contained Breathing Apparatus is a full face respirator which comes with a cylinder which provides necessary oxygen for breathing.

It is recommended for use in confined spaces having deficiency of oxygen such as sewers or underwater.

## HAND PROTECTION



### Chemical Resistant Gloves

Chemical resistant, nitrile gloves having flock lined inners, diamond finish grip, straight cuff, minimum thickness of 0.38 mm and length of 330 mm.

Recommended to be worn on jobs which includes continuous and intentional contact with liquid hazardous waste or chemical

## BODY PROTECTION



### Full Sleeves Shirt

High visibility full sleeves shirt made out of high wicking polyester for comfortable use in hot and humid conditions.

Presence of reflective strips for high visibility in low light conditions is optional.



## BODY PROTECTION



### Body Protection

Disposable Coveralls made out of non woven polypropylene with polyethylene barrier film.

The coveralls are breathable and protect the worker from incidental splashes of hazardous liquid waste.

## FOOT PROTECTION



### Foot Protection

Chest Wader Suits made out of polyester coated with PVC, steel toe rubber shoes molded into the suit to provide complete water tightness.

These are recommended for use where the lower body of the worker will be continuous contact with hazardous liquid waste.

## BODY PROTECTION



### Body Protection

The sewage proof diving suit are completely water tight from head to toe with integrated gloves and shoes. It comes with a diving helmet and inline air blower kept above the ground. This ensures continuous supply of fresh air for prolonged work under wastewater.

# Appropriate Combination of PPE

## Sanitation Workers in House Keeping

Housekeeping staff involved in cleaning of washrooms



## LUNG PROTECTION



### Face Mask

Foldable respiratory half mask made of non-woven polypropylene  
Wide adjustable elastic straps,  
Aluminium nose clip,  
Reinforcement nose foam

Recommended to be worn on job while cleaning water closets and using aerosols containing chemicals.

## HAND PROTECTION



### Chemical Resistant Gloves

Chemical resistant, nitrile gloves having flock lined inners, diamond finish grip, straight cuff, minimum thickness of 0.38 mm and length of 330 mm.

Recommended to be worn on jobs which includes continuous and intentional contact with liquids or cleaning chemical.

## BODY PROTECTION



### Work Shirt

Short sleeve work shirt made out of polyester and cotton. This material is comfortable to prolonged wearing and helps to wick out moisture.

The work shirt is to be worn on the job as a uniform and is combined with apron or a bib to protect the from liquid splashes.



## BODY PROTECTION



### Cargo Pants

Full length cargo pants made out of polyester and cotton. The pants should have gusseted crotch, wide belt loops and reinforced front and cargo pockets.

The cargo pants shields the legs of the worker from incidental splash of water or chemicals used for cleaning.

## BODY PROTECTION



### Bib Apron

Unisex multipurpose bib apron made of polycotton fabric, Neck strap adjusted with snap buttons for length, Back width adjustable with strap & buttons.

Recommended to be worn as worker might be exposed to incidental contact / splashes of liquids.

## FOOT PROTECTION



### Protective Footwear

Protective footwear having steel toe with upper body made out of grain leather and polyurethane outsole for protection against physical hazards.

Ankle length shoes when paired with full pants provides complete protection from incidental splashes of hazardous liquids.

# Appropriate Combination of PPE

## Sanitation Workers in Solid Waste Management

Workers involved in door to door collection, working at transfer station, segregation line and O&M activities at SWM plant

## HEAD PROTECTION



### Hard Hat

Hard Hat with shell made out of Polypropylene Co-Polymer with headband, harness, sweatband, peak and chinstrap

Recommend for use in case of physical hazard from falling object or when working at height.

## EAR PROTECTION



### Ear Plugs

Corded, flanged shaped ear plugs made out of non irritant and non allergic material. The ear plugs should be washable and reusable.

Recommend for use only in case of noise hazard at SWM Plant.

## FACE PROTECTION



### Face Shield

Face shield made out of clear Polycarbonate having size 8.0" x 15.5" and thickness of 1.0 mm. The shield should be compatible with the safety hard hat.

Recommended when using sprays / aerosols.

## LUNG PROTECTION



### Face Mask

Foldable respiratory half mask made of non-woven polypropylene Wide adjustable elastic straps, Aluminium nose clip, Reinforcement nose foam

Recommend in case of collection or handling organic waste and protect from hazardous gases.



## LUNG PROTECTION



### N 95 Face Mask

N 95 face mask with exhalation valve and straps made out of Thermoplastic Elastomer, Aluminium nose clip, Polyurethane nose foam, Polypropylene filter, Polyester shell and cover web  
Recommended to be worn for jobs where there is collection or processing of dry waste or C&D waste

## HAND PROTECTION



### Mechanical Resistant Gloves

Mechanical resistant, nitrile coated gloves having nylon lining, specialized grip such as dotted or sandy and knitted cuffs.  
Recommended to be worn for jobs which might include incidental contact with dry waste or inert waste

## HAND PROTECTION



### Chemical Resistant Gloves

Chemical resistant, nitrile gloves having flock lined inners, diamond finish grip, straight cuff, minimum thickness of 0.38 mm and length of 330 mm.  
Recommended to be worn on jobs which includes continuous and intentional contact with wet waste or hazardous waste

## BODY PROTECTION



### Bib Apron

Unisex multipurpose bib apron made of polycotton fabric, Neck strap adjusted with snap buttons for length, Back width adjustable with strap & buttons.

Recommended to be worn when continuous and intentional contact with liquid hazardous waste such as organic waste segregation station.

## BODY PROTECTION



### Full Sleeves Shirt

High visibility full sleeves shirt made out of high wicking polyester for comfortable use in hot and humid conditions.

Presence of reflective strips for high visibility in low light conditions is optional.

## BODY PROTECTION



### Full Length Pants

High visibility full length pants made out of polyurethane coated breathable polyester for comfortable use in hot and humid conditions and easy cleaning.

Presence of reflective strips for high visibility in low light conditions is optional.

## FOOT PROTECTION



### Protective Footwear

Protective footwear having steel toe with upper body made out of grain leather and polyurethane outsole for protection against physical hazards.

These shoes are recommended for most of the jobs in SWM. Ankle length shoes when paired with full pants provides complete protection from incidental splashes of hazardous waste like wet waste slurry or leachate or processed liquid fuel.

## FOOT PROTECTION



### Protective Footwear

Protective footwear made out of poly vinyl chloride and has energy absorption heel. Anti-skid, highly flexible and extra strong for protection against physical hazards.

These shoes are recommended for jobs in SWM where the worker is going to come in continuous contact with liquid. Ankle length shoes should be paired with full pants provides complete protection.



# Appropriate Combination of PPE

## Sanitation Workers in Solid Waste Management

Sweepers involved in sweeping and cleaning of streets

## LUNG PROTECTION



### Face Mask

Foldable respiratory half mask made of non-woven polypropylene  
Wide adjustable elastic straps,  
Aluminium nose clip,  
Reinforcement nose foam  
Recommend to use in case of sweeping activity to protect from dust particles.

## HAND PROTECTION



### Mechanical Resistant Gloves

Mechanical resistant, nitrile coated gloves having nylon lining, specialized grip such as dotted or sandy and knitted cuffs.  
Recommended to be worn for jobs which include incidental contact with dry waste in street cleaning.

## BODY PROTECTION



### Full Sleeves Shirt

High visibility full sleeves shirt made out of high wicking polyester for comfortable use in hot and humid conditions.  
Presence of reflective strips for high visibility in low light conditions is mandatory.

## BODY PROTECTION



### Cargo Pants

Full length cargo pants made out of polyester and cotton. The pants should have gusseted crotch, wide belt loops and reinforced front and cargo pockets.

Presence of reflective strips is mandatory. The full length pants protects the worker from coming in contact with dusts and harmful substances.

## BODY PROTECTION



### High Visibility Safety Vests

Safety Vests made of plain or mesh polyester, 1 or 2 inch high gloss white or yellow horizontal & vertical reflective tape.

Recommended to be worn with apparel in street sweeping activity for high visibility in low light conditions.

## FOOT PROTECTION



### Protective Footwear

Protective footwear having steel toe with upper body made out of grain leather and polyurethane outsole for protection against physical hazards.

Ankle length shoes when paired with full pants provides complete protection from dusts, particulate matters and splashes of liquids.





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