

(D) Beware of Irregularities

- ◆ Beware of any strange odour, breathing difficulties or other unpleasant feeling when using the RPE.
- ◆ Leave the contaminated area immediately in case any problems arise.

Proper Maintenance and Care of RPE

- ◆ Store new RPE and filters in cool and dry places according to the instructions for users.
- ◆ After using re-usable RPE,
 - ▶ clean it in warm water with mild detergent (used filters should be disposed of);
 - ▶ disinfect the facepiece according to the recommendation of the manufacturer;
 - ▶ rinse the facepiece completely in warm water;
 - ▶ dry the RPE thoroughly;
 - ▶ inspect the equipment carefully to detect any deterioration;
 - ▶ keep the RPE in an air-tight plastic bag or container; and
 - ▶ store the RPE in a convenient and clean place, protected from sunlight, excessive heat or cold, harmful chemicals and mechanical damage.
- ◆ Follow the recommendations of the manufacturer in repairing the RPE or replacing its components.
- ◆ Sophisticated RPE like self-contained breathing apparatus should be examined and tested thoroughly by the manufacturer or other competent persons at suitable intervals. Employers should ensure that such examination and testing are regularly carried out according to the recommended schedule.



Keeping a bagged RPE in a locker to avoid disturbance or contamination

Common Examples of Misuses

- ❌ **Using a surgical mask or a nuisance dust mask for protection against toxic dust.**
These masks are not designed for filtering toxic dust and thus the required protection cannot be provided.
- ❌ **Using a particulate respirator (e.g. N95 respirator) for protection against gaseous or vapour contaminants.**
Particulate respirators cannot filter gaseous or vapour contaminants and thus offer no protection against these hazards.
- ❌ **Wearing a respirator with only one strap mounted on the head.**
Both straps must be mounted, because a proper face seal could not be attained by using only one strap, which substantially reduces the protection.
- ❌ **Failing to press the noseclip on the nose bridge.**
Pressing the noseclip on the nose bridge serves to tighten the seal. Failing to do so leads to air leakage which substantially reduces the protection.
- ❌ **Putting a towel beneath the facepiece.**
This increases the air leakage between the face and the facepiece by breaking the seal, thus reducing the protection.
- ❌ **Using an expired respirator/filter.**
Expired respirator/filter must not be used, because normal function of the respirator/filter is not guaranteed after the expiry date.
- ❌ **Using a disposable respirator/filter repeatedly for many times.**
The respirator/filter may have been heavily contaminated already and lost its function.
- ❌ **Washing filters for reuse.**
Used filters must not be washed for reuse, because their efficiency may be seriously reduced by washing.
- ❌ **Leaving a respirator facepiece under direct sunlight when it is not being used.**
This will speed up the aging of the rubber components of the facepiece.



This leaflet is the third one in the series of publications on respiratory protection. Employers and employees are recommended to read this leaflet in conjunction with the first leaflet on proper use of RPE and the second one on proper selection of RPE.

Enquiries

For enquiries about this leaflet or advice on occupational health and hygiene matters, please contact the Labour Department's Occupational Safety and Health Branch through:

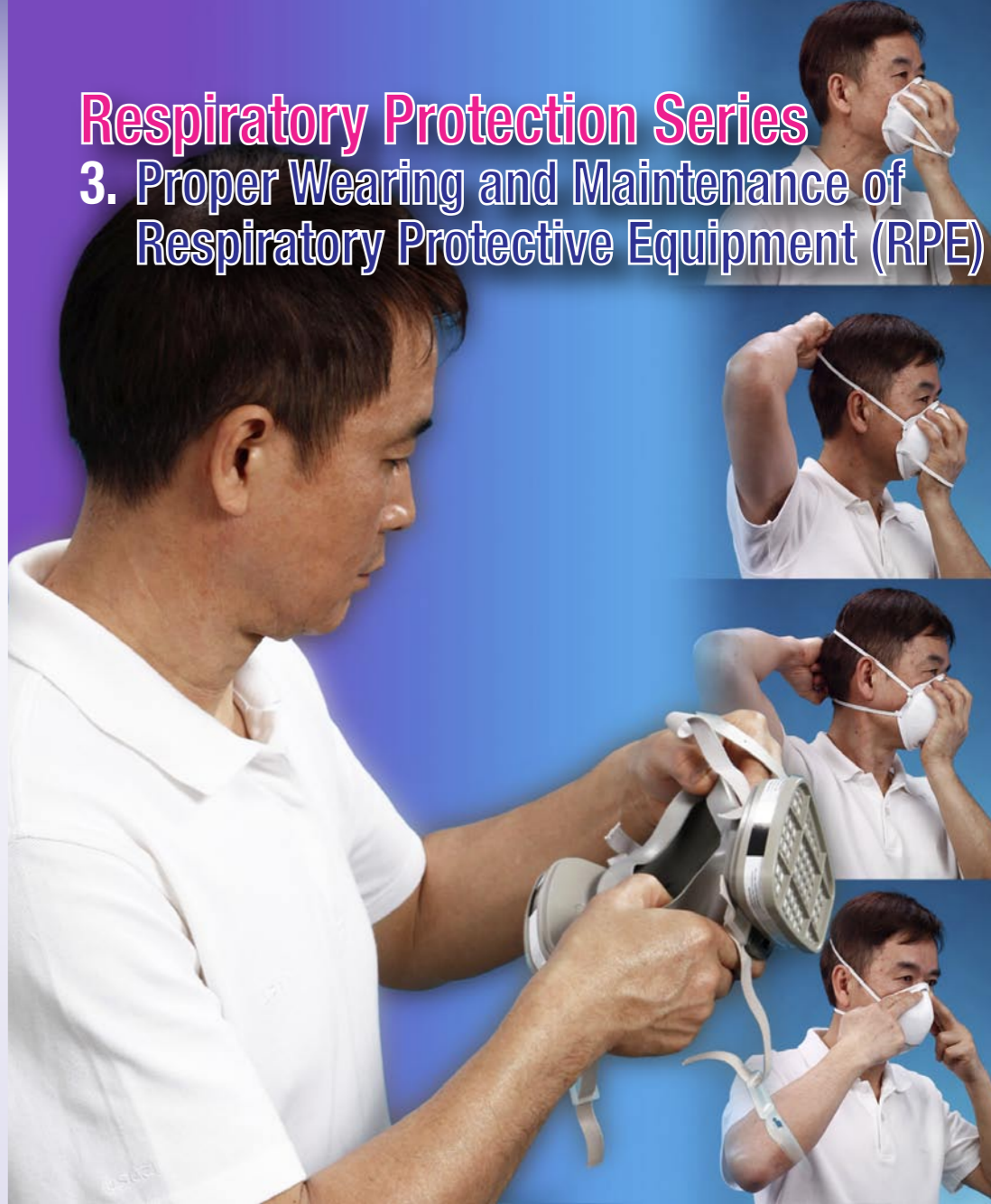
Telephone : 2852 4041
Fax : 2581 2049
Email : enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation can also be found on our website at <http://www.labour.gov.hk>.

Complaints

If you have any complaints about unsafe workplaces and practices, please call the Labour Department's occupational safety and health complaint hotline on 2542 2172. All complaints will be treated in the strictest confidence.

Respiratory Protection Series 3. Proper Wearing and Maintenance of Respiratory Protective Equipment (RPE)



Respiratory Protection Series

3. Proper Wearing and Maintenance of Respiratory Protective Equipment (RPE)

Respiratory Protective Equipment (RPE) should be properly worn and maintained so that the expected protection is provided to the user. Employers should provide employees who have to use RPE at work with adequate information, instruction, training and supervision to ensure that the RPE is properly worn. Besides, they should take suitable measures to ensure proper maintenance of the RPE

Points to Note in Wearing RPE

(A) Follow the Instructions for Users

- ◆ Carefully read and follow the instructions for users of the RPE.
- ◆ Instructions for users provide important information about how to use the RPE correctly and alert the user to the limitations of the equipment and timing for changing the respirator/filter.

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(B) Inspect the RPE

- ◆ Every time before using the RPE, carefully check the equipment according to the instructions for users to ensure that it is in good condition.
- ◆ In general, the following should be checked:
 - ▶ any cracks and tears in, or dirt on the facepiece and plastic parts;
 - ▶ any distortion or damage of the valves (if installed);
 - ▶ whether the head straps are intact and have good elasticity; and
 - ▶ whether the RPE and its filters have expired.



A user inspecting a half-face respirator before use





Defective RPE **SHOULD NOT** be used unless the defects have been fully rectified.

(C) Wear the RPE and Check the Seal

- ◆ Follow the procedures recommended by the manufacturer in wearing the RPE.
- ◆ Make sure that a tight seal between the face and the facepiece is attained when wearing tight-fitting RPE.

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Basic steps of wearing a disposable particulate respirator:

-  1 properly position the facepiece on the face;
-  2 mount the upper strap on the head;
-  3 mount the lower strap on the head; and
-  4 use the tips of the index and middle fingers of both hands to press the noseclip on the nose bridge to tighten the seal.

- ◆ To ensure that a proper seal is attained, the user should also perform a “seal check” every time the RPE is donned. Seal check can be done by either the positive or negative pressure check, or by procedures recommended by the manufacturers.
- ◆ If the check indicates an improper seal, the user should take actions to remedy the problem. The user should not or should not be allowed to enter any contaminated area before the problem has been rectified.

It should be noted that seal checks **ARE NOT** substitutes for qualitative or quantitative fit tests.

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Positive pressure check

- ◆ For reusable RPE, cover the exhalation valve with one hand and then exhale gently for at least 10 seconds. For disposable respirators, cover the front of the facepiece with both hands and exhale sharply.
- ◆ If a slight positive pressure is built up inside the facepiece and no outward leakage of air at the edges of the facepiece is detected, a proper seal is attained.



Positive pressure check for a reusable respirator

Negative pressure check

- ◆ For reusable RPE, cover the inlet opening(s) of the RPE filter(s) with the hand(s), then inhale gently so that the facepiece collapses slightly and hold the breath for at least 10 seconds. For disposable respirators, cover the front of the facepiece with both hands and inhale deeply.
- ◆ If the facepiece collapses slightly and no inward leakage of air at the edges of the facepiece is detected, a proper seal is attained.



Negative pressure check for a disposable respirator

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