Level C PPE does not require air-supplied respirators. Air-purifying respirators that filter contaminants out of the air before you can inhale them are used.

Level C
- shoes and shanks.

Level B PPE consists of a one or two-piece chemical splash suit with a hood, a chemical-resistant inner suit, gloves and chemical resistant boots with steel shoes and shanks.

Level B
- SCBA's or SAR's are required for Level B, but totally-encapsulating suits are not. The main function of Level B protective clothing is to guard against skin irritation and splashes, not lethal doses of gases or vapors.
- While Level A protection is required wherever you face "immediate dangers to your life or health," Level B is used in environments that are slightly less hazardous.

Level A
- Level A PPE is used in places where the most severe skin, respiratory and eye hazards are encountered. In these situations, the atmospheres are so contaminated that it cannot be filtered and you must use a respirator to survive.
- Your respirator must be able to maintain positive pressure, which means that a constant supply of fresh air is being forced into your face piece whether you are breathing in or out.
- The two major types of air-supplying respirators are the self-contained breathing apparatus (SCBA) and the supplied-air respirator (SAR).
- An SCBA allows you to breathe air from a portable tank, while an SAR supplies air though a hose from a source located some distance away.
- In Level A, the protective outfit that you wear with your respirator is called a totally-encapsulating suit. This provides the maximum possible protection against all types of exposure by keeping you isolated from the outside air.
- To provide complete protection, the totally-encapsulating suit must be used with a chemical-resistant inner suit, such as Tyvek coveralls.
- The proper gloves are especially important in Level A gear because you may end up touching chemicals that are corrosive or combustible.
- Remember that the gloves you are using must be compatible with any hazardous chemicals that you handle. If they aren’t compatible, they may fall apart or melt.
- In Level A, you must wear chemical-resistant boots with steel shoes and shanks.

Level B
- While Level A protection is required wherever you face "immediate dangers to your life or health," Level B is used in environments that are slightly less hazardous.
- SCBA's or SAR's are required for Level B, but totally-encapsulating suits are not. The main function of Level B protective clothing is to guard against skin irritation and splashes, not lethal doses of gases or vapors.
- Level B PPE consists of a one or two-piece chemical splash suit with a hood, a chemical-resistant inner suit, gloves and chemical resistant boots with steel shoes and shanks.

Level C
- Level C PPE does not require air-supplied respirators. Air-purifying respirators that filter contaminants out of the air before you can inhale them are used.
These respirators use the principle of negative pressure, which means that when you inhale, the air pressure inside your face piece is less than that of the outside air. The power of your own breathing is what keeps the air moving through the respirator.

Level C (continued)

- Skin hazards are less of a problem in Level C environments. While chemical-protective clothing may be used, some areas require only everyday work clothes.

Level D

- Level D PPE guards against nuisance contamination and general safety hazards only.
- This may include coveralls that protect your clothing from stains, cloth or rubber work gloves, boots with steel toes and shanks, safety glasses and a hard hat.
- Level D protection must never be used on any site where respiratory or skin hazards exist.

Heat Stress

- Heat stress can occur when PPE interferes with your body's ability to cool itself.
- When you are hot, you sweat. Normally your sweat will evaporate and you will cool down, but when you are sealed up in chemical protective clothing, your sweat can't evaporate.
- The longer you are prevented from sweating, the higher your body temperature will rise and you will eventually develop heat stress.
- Heat stress can cause disabilities that range from mild to fatal. The least dangerous of these is heat rash, or “prickly heat,” which is an inflammation of the skin that becomes worse as the temperature around you gets higher.
- The most serious form of heat stress is heat stroke, in which the body can no longer cool itself. Left untreated, heat stroke can be fatal. Symptoms include dizziness, nausea, severe headache and a body temperature of 106 degrees F or higher.

- Your employer can help you to prevent heat stress by alternating your work and rest periods or by allowing you to work during the cooler times of the day.
- You can help yourself by drinking lots of water or special beverages which replace the fluids and electrolytes that you sweat away.
- Check your Site Safety and Health Plan to learn more about how to avoid heat stress.

Other Problems Associated With PPE

- Most chemical-protective clothing is heavy and cumbersome. It decreases your ability to handle things and limits your mobility.
- These suits also make it difficult for you to see and hear what is around you. You must see through both the face piece of your respirator and the suit itself and they can easily become fogged up or scratched.
- Your ears are also covered by both your inner and outer suits. Since we rely on our eyes and ears to provide us with information that keeps us out of danger, CPC can increase the potential for some types of on-the-job accidents.
- To cut down on your chances of having an accident, you must be fully trained in how to use your PPE. Make sure that it is maintained properly and that you get used to the physical demands that it places on you.

Decontamination

- Once you are through with your PPE, it needs to be decontaminated. Contaminated PPE can be a source of the very substances for which you need protection.
- Because of this, decontamination procedures are critical whenever you work with hazardous materials. OSHA has ruled that nothing can leave a site where hazardous materials are located without being decontaminated.
- At a work site, decontamination usually takes place in what is called a "Contamination Reduction Corridor (CRC)."
- Using a CRC keeps decontamination activities within a limited area and helps to make sure that workers who leave the site are not still contaminated. This keeps contamination from spreading.
- Within the CRC, stations are set aside for decontaminating clothing and portable field equipment. You leave each station less contaminated than when you arrived.
- Each station has a supply of decontamination equipment and materials, which may include soft-bristled scrub brushes, large galvanized washtubs, children’s wading pools, garden sprayers, metal or plastic drums and paper or cloth towels.
- Decontamination solutions are usually nothing more than water mixed with detergent. If you are contaminated by a substance that will react with water, a specialized decontamination solution must be used.
- Used decontamination solution and contaminated disposable PPE must be discarded in accordance with strict OSHA guidelines. If you have questions about this process, ask your supervisor.

How the CRC Works

- At the first station, you will drop off all of your tools for decontamination.
- The outer suit wash is next. You step into a small pool and are sprayed with soapy water from head to toe. An assistant then scrubs your suit thoroughly with decontamination solution.
- This is followed by a thorough rinsing. Your outer suit and SCBA are then removed, followed by your respirator face piece and inner suit.
- Depending on the nature of the substances to which you have been exposed, you might have to shower after leaving the CRC. At the very least, you should wash your hands and face.
- As a follow up to your decontamination, you will probably have to undergo some type of medical surveillance examination. This is routine and is no cause for alarm.
- The type of exam that you will receive depends on the kind of hazardous materials that you have been handling. No one medical procedure can check for every type of exposure.