

FWB Products Ltd 2020 (www.fwb.co.uk)

Respiratory Protection Levels

Respiratory Masks Explained

A Respirator or Dust Mask is an element of Personal Protective Equipment (PPE) specifically designed to protect the user from harmful dust, fumes, vapours and/or gases. They range from inexpensive, single-use, disposable models to reusable models, which feature replaceable cartridges.

There are two primary classes of respirator:

- Air-Purifying Respirators filter contaminated air through a filtration media in order to protect the user
- Air-Supplied Respirators feed uncontaminated air directly to the user from a trusted source

Disposable respirators tend to be either fold-flat or moulded. Fold-flat respirators are generally less expensive and take up less storage space, whereas the moulded models offer a potentially better fit for user comfort.

The level of protection afforded the user by either type of respirator is defined in two European standards:

EN143 & EN149

EN 143 defines the standards for respiratory filters, such as those used with re-usable air-purifying masks:

Class	Filter Penetration Limit (at 95 l/min air flow)
P1	Filters at least 80% of airborne particles
P2	Filters at least 94% of airborne particles
P3	Filters at least 99.95% of airborne particles

EN 149 defines the protection standards for respiratory filtering half masks. This standard generally applies to disposable masks.

Class	Filter Penetration Limit (at 95 l/min air flow)	Inward Leakage
FFP1	Filters at least 80% of airborne particles	<22%
FFP2	Filters at least 94% of airborne particles	<8%
FFP3	Filters at least 99% of airborne particles	<2%

Respiratory Masks Explained

The level of protection given to the user is defined through the use of a Px rating. P1 is the lowest level of protection, and P3 is the highest level of protection. In the case of disposable respirators/masks, the Px rating is affixed by “FF” e.g. FFP2.

Different models of masks and filters can be designed with certain uses or hazards in mind. The appropriate model for the task should always be sought out to ensure adequate protection.

General applications at each protection level are suggested below. It is recommended that the user determines their needs based on application-specific risk assessments.

FFP1	FFP2	FFP3
Low levels of dust, oil or water mist such as those encountered when hand sanding, drilling or cutting	Moderate levels of dust, oil or water mist such as cement, plaster, machine sanding and wood dust	Higher levels of dust, mist or other airborne contaminants, for example fine dust, oil or water based mists, hazardous pharmaceutical powders, biological agents and fibres