

Supporting Document 8. COVID-19: Information and Guidance

Face Coverings What are they good for...Well it turns out quite a lot

Particles are what we describe as being the droplets that are expelled from your nose or mouth through talking, sneezing etc. its these particles that carry the Coronavirus and they are measured in Microns.

The human coronavirus sits around a size of between 0.1 and 900 Microns. While larger particles will tend to settle quickly on nearby surfaces, particles less than the 2.5 Micron size remain airborne for a longer time. Thus, most of the infectious particles produced by coughing will remain airborne and can be inhaled into the lungs. To put that into perspective a human hair on average is 70 Microns in diameter.

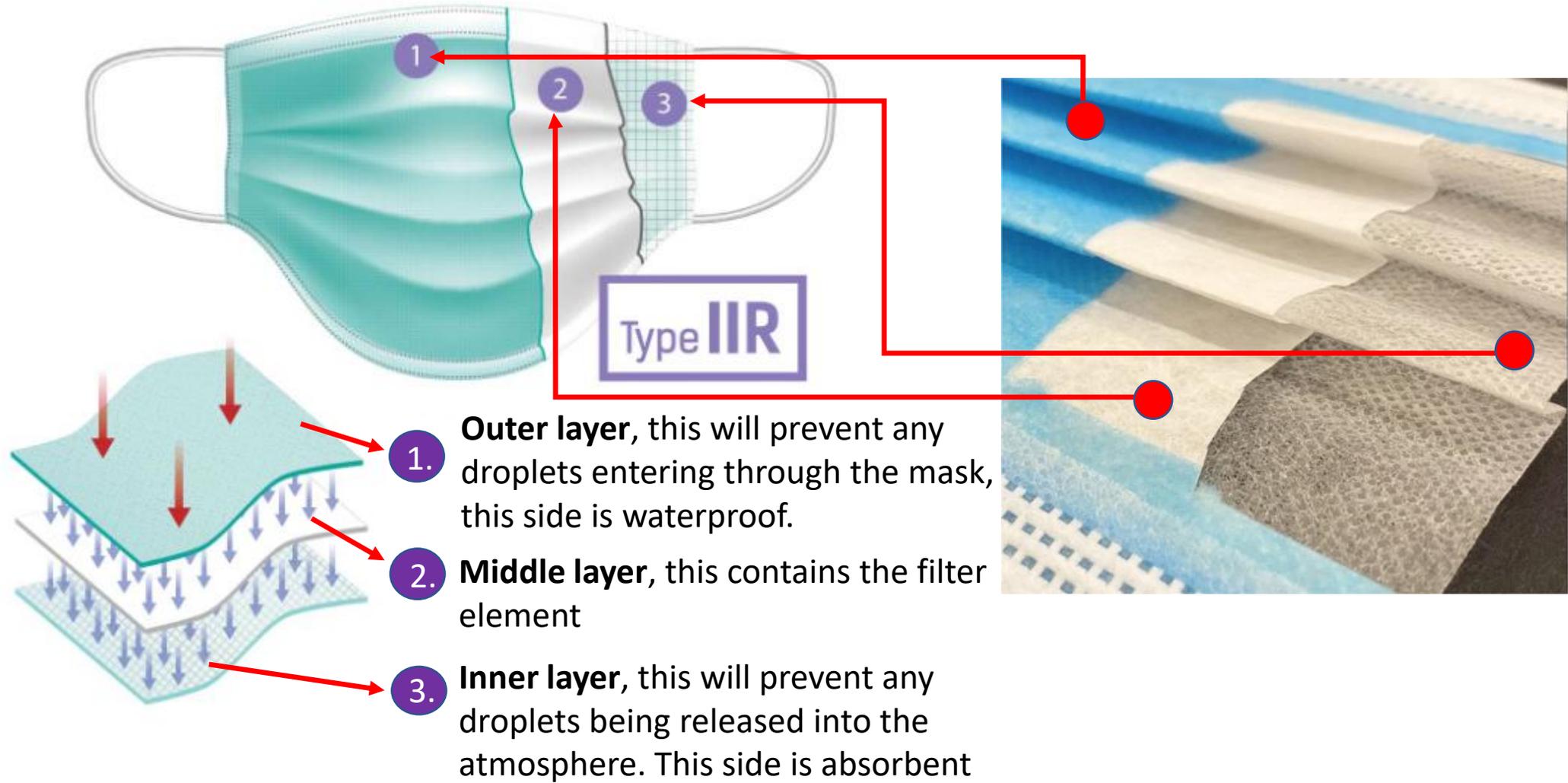
There are different types of Face Coverings/Masks that can be worn

Surgical Mask: -

Fluid Resistant (Type IIR) Surgical Mask or FRSM for short, this type of mask is a fluid resistant surgical mask commonly used for clinical settings within the Health & Social Care Sectors. The mask is made up of 3 ply's similar to what you find in toilet paper, however with a slight difference. The mask will be able to filter droplets (large particles) of more than 3.0 Microns.

- Type I:** bacterial filtering effectiveness > 95%
- Type II:** bacterial filtering effectiveness > 98%
- Type IIR:** 98% and splash-resistant

Diagram showing a 3 ply Surgical Mask, displaying each individual layer



FFP1, FFP2 & FFP3 (N95,99 & 100 Filtering Facepieces) Respiratory Protective Mask

N: This is a Respirator Rating Letter Class. It stands for “Non-Oil” meaning that if no oil-based particulates are present, then you can use the mask in the work environment. Other masks ratings are R (resistant to oil for 8 hours) and P (oil proof). An **N95 respirator** is a respiratory protective device designed to achieve a very close facial fit and very efficient filtration of airborne particles. The edges of the respirator are designed to form a seal around the nose and mouth. Surgical N95 Respirators are commonly used in healthcare settings and are a subset of N95 Filtering Facepiece Respirators (FFRs).

95: Masks ending in a 95, have a 95 percent efficiency. Masks ending in a 99 (FFP3) have a 99 percent efficiency. Masks ending in 100 are 99.97 percent efficient and that is the same as a HEPA quality filter.

0.3 microns: The masks filter out contaminants like dusts, mists and fumes. The minimum size of 0.3 microns of particulates and large droplets won't pass through the barrier, according to the Centres for Disease Control and Prevention (CDC.)

Material: The filtration material on the mask is an electrostatic non-woven polypropylene fibre.

Valve: Some disposable N95 masks come with an optional exhalation valve. The presence of an exhalation valve reduces exhalation resistance, which makes it easier to breathe (exhale).

Diagram showing an FFP2 (N95) Respiratory Mask, displaying each part

1.

95%: Removes 95% of 0.3 Micron particles

2.

Valve: Optional, reduces breathing resistance during exhalation

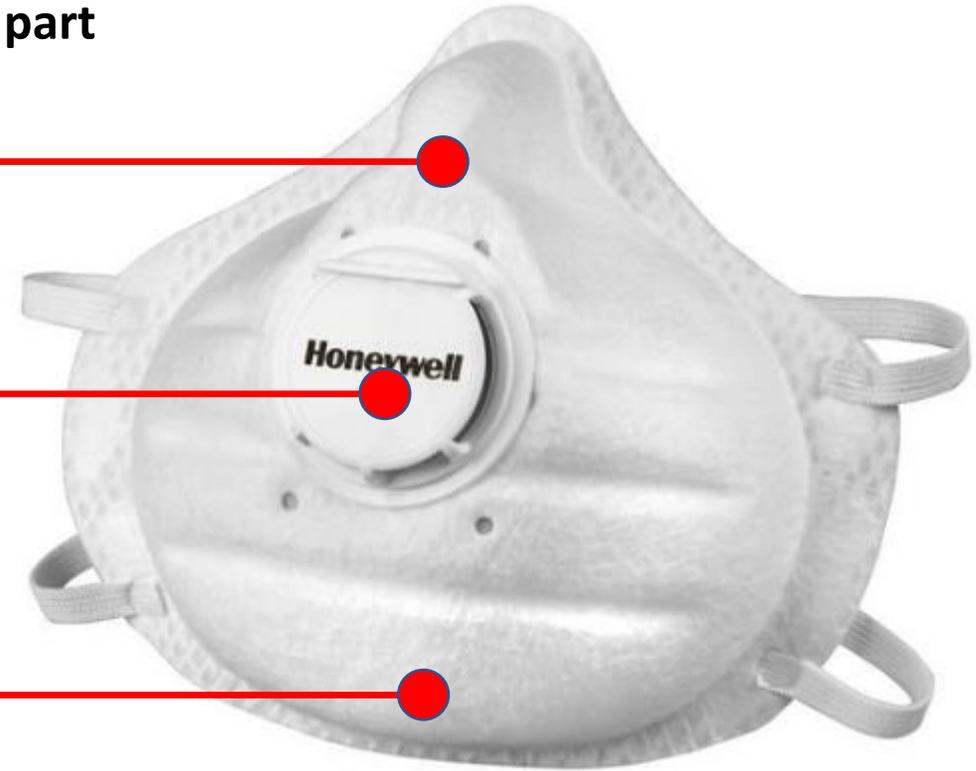
3.

Material: Tough, yet flexible, non-woven polypropylene fibre

•**FFP1** refers to the least filtering of the three masks with an aerosol filtration of at least 80% and leakage to the inside of maximum 22%. This mask is mainly used as a dust mask (home renovations and various types of work).

•**FFP2** masks have a minimum of 94% filtration percentage and maximum 8% leakage to the inside. They are mainly used in construction, agriculture, and by healthcare professionals against influenza viruses.

•**FFP3** masks are the most filtering mask of the FFPs. With a minimum filtration percentage of 99% and maximum 2% leakage to the inside, they protect against very fine particles such as asbestos.



FFP3 (N99, Filtering Facepieces) Respiratory Protective Mask

These masks are better shaped to your face for a more snug fit and typically have a valve to help breathe as the filtration material is much thicker. The valve also reduces the build up of moisture, lengthening the lifespan of the mask.

The FFP3 works by creating a seal between your face and the FFP3 Respirator, the air goes through the material of the Respirator which filters out the airborne contaminant.

Diagram showing an FFP3 (N99) Respiratory Mask, displaying each part

1.

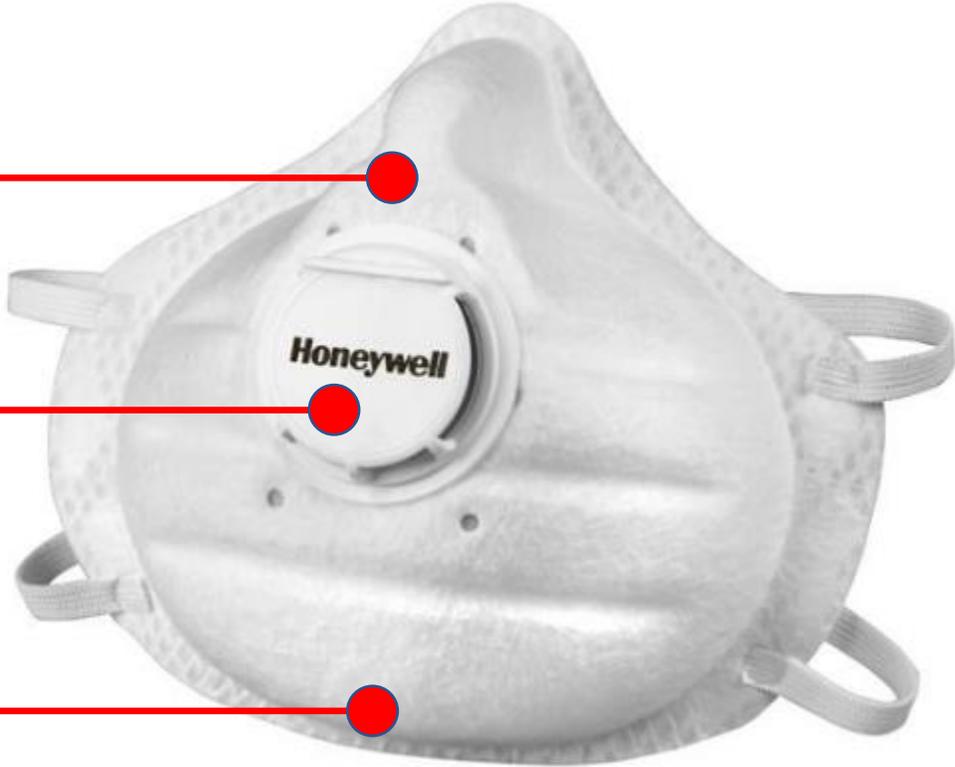
99%: Removes 99% of 0.3 Micron particles

2.

Valve: Optional, reduces breathing resistance during exhalation

3.

Material: Tough, yet flexible, non-wovan polypropylene fibre



AIR PURIFYING HALF MASK RESPIRATORS

Half mask respirators are made of rubber or silicon and provide heavy protection from gases, fumes, dusts, vapors, dust, mold, and other harmful air particles and particulates.

These respirators provide tight seal around the face and they are fitted with cartridges which purify the air as the wearer breathes. They are reusable and you just have to change the filters only.

Life of these filters is about 40 hours and should not be used more than this time frame. You can also change the filters when it gets tough to breathe through them.

The best part of half face respirators is that you can use different types of cartridges in them. Different types of cartridges are available for different types of air contaminants..

ADVANTAGES:

These respirators provide extreme protection to the wearer. They are easy to use and relatively lightweight.

These respirators provide airtight seal around the face and offer good protection from many air contaminants.

LIMITATIONS:

They do not provide protection to your full face and you have to wear extra protection for your eyes.

Also these air purifying respirators cannot be used for all types of air contaminants and are limited by the type and capacity of the filters/cartridges used.

They do not provide protection like full face-piece air purifying respirator. You cannot use them in the environment where the level of oxygen is low or in atmospheres which have high concentrations of contaminants.

Changeable Filters



AIR PURIFYING FULL FACE-PIECE RESPIRATORS

Air-purifying full face-piece respirators works on same principal as the half mask respirators works. Full face respirator covers your full face, providing protection to eyes, nose, chin, and mouth.

These respirators are also used with filters/cartridges. These filters/cartridges are same that are used in half face respirators.

ADVANTAGES:

Full face respirators are better than half face mask. These respirators provide better seal and more protection that half mask air purifying respirators.

Wearing full face respirator you can easily protect your eyes and face from irritating vapors, mists, and splashed chemicals.

LIMITATION:

Full face respirators are much heavier than half face respirators. They are less comfortable to wear as compared to half face mask.

They are also limited to certain type of air contaminants and are limited by the type and capacity of the filters and cartridges used.

You cannot use them in oxygen-deficient atmospheres, or in atmospheres which have high concentrations of contaminants.

APPLICATIONS:

These respirators are used for wide variety of job applications where eye and face protection is desirable.

Changeable Filters



Cloth Covering/Mask (Non-Medical Masks)

Cloth face coverings are recommended as a simple barrier to help prevent respiratory droplets from traveling into the air and onto other people when the person wearing the cloth face covering coughs, sneezes, talks, or raises their voice. This is called source control. This recommendation is based on what we know about the role respiratory droplets play in the spread of the virus that causes COVID-19, paired with emerging evidence from clinical and laboratory studies that shows cloth face coverings reduce the spray of droplets when worn over the nose and mouth. COVID-19 spreads mainly among people who are in close contact with one another (within about 6 feet), so the use of cloth face coverings is particularly important in settings where people are close to each other or where social distancing is difficult to maintain.

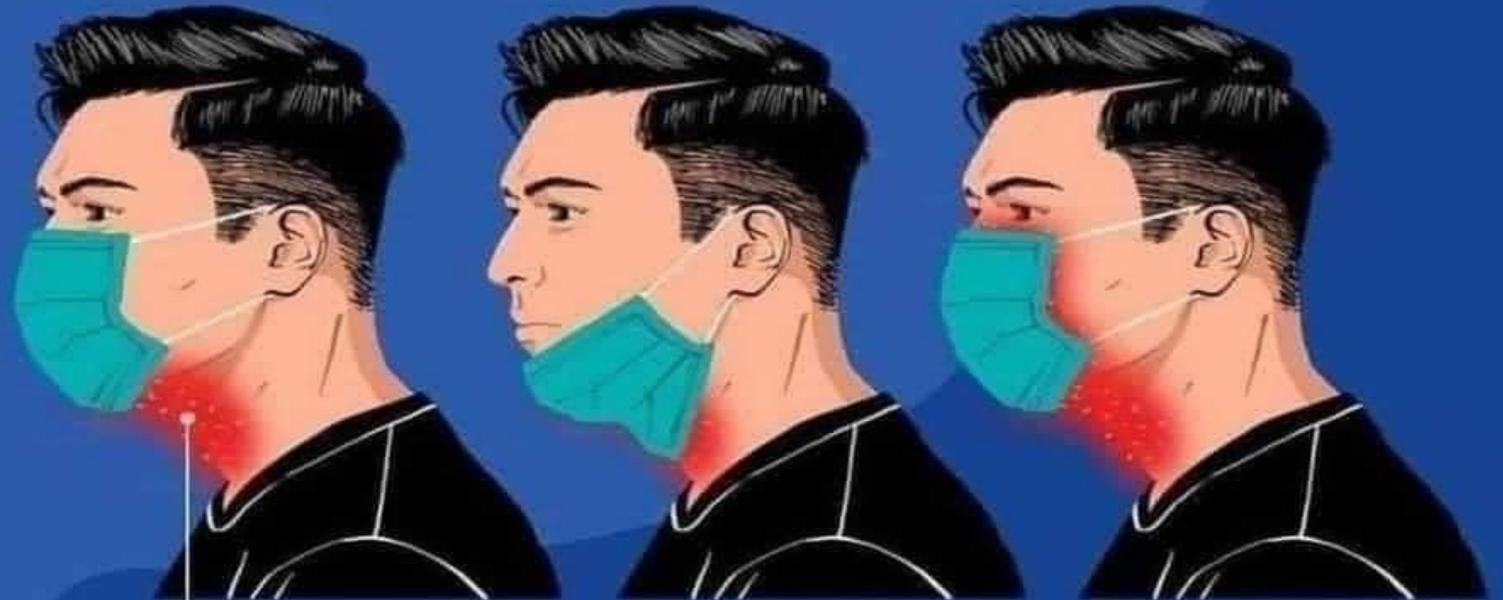


A well-fitted stitched mask made from two layers of quilting fabric seems to be the most effective in stopping the spread of droplets from emulated coughs and sneezes.





DO NOT BRING DOWN YOUR MASK TO THE CHIN



Exposed area

The inside of the mask will be contaminated

Mouth and nose will be infected by bacteria or virus or germs

When you want to eat, drink or do any activity where you have to remove your mask, just remove it completely.