

Explanation of Face masks types

Mask type	EU medical certification	Protection against inhaling particle	Protection against exhaling particles	Comments
<p>FFP2 (non-valved)</p> <p>Eg</p> <p>Commuter Breathe-Happy Mask</p> <p>Ties around back of head</p>	Yes	Yes	Yes	<p>FFP2 are the only types of masks which offer almost complete protection against Corona virus for both the wearer and the people nearby. FFP2 is a protected EU term and can only be applied to face masks which have undergone elaborate testing by a certified EU notified body. Such masks need to have an official test certificate, and the supplier needs to comply with rigorous standards to ensure continued compliance with the test norms.</p> <p>Testing is done per the EN 149:2001+A1:2009 norm. This norm prescribes also testing 'as worn' Since the FFP2 masks provide an almost perfect seal between the mask and the face skin, they provide reliable protection against aerosolized particles entering or escaping the mask. The FF2 filters any particles larger than 0.3 micron. This is 10 times better than the cheaper surgical masks.</p> <p>A qualified FFP2 mask will have the registration # number of the testing 'EU notified body' and the EN norm printed on it, together with the CE logo. Assuming it is not a fraudulently produced and imported mask, this provides assurance that the mask is legitimate. Doing one's homework and checking the certificate on the EU official website is always a good idea.</p> <p>The Breathe-Happy masks we wear have this certification. Also being made of silicone they are far more comfortable to wear and cause less skin reactions than fabric based FFP2 masks.</p> <p>Other newer designs have been launched eg Leaf mask which is a clear face mask with filters underneath so that the persons mouth and face are visible. The UVmask has in build UVC light to further enhance protection.</p> <p>Increasing studies are showing that N95 masks do prevent 100% of virus particles passing through the mask even when coughing. Compared to the TypeIIR mask where in the Min-Chul Kim study 3 of the 7 patients the virus was shown to have passed through the mask.</p>
Type IIR Surgical ear loop mask	Some	Limited	Limited	<p>CE certified surgical masks are tested according to EN 14683. This is a very different test from the FFP2 test procedure. For surgical masks, only the cloth properties are tested. But there is no 'as worn' test. The cloth is tested to stop particles of 3.0 microns and larger. That is 10 times larger than an FFP2 mask. Moreover they are 0.2um in thickness compared to the FFP2 mask of Breathe happy and others of 2.2mm. This extra thickness is where the added protection arises from.</p> <p>When looking at how these masks are worn by most users, it is clear that they provide limited real protection against air entering or escaping through all sides of the masks. These masks only provide protection against</p>

				<p>large droplets which travel in a straight line from and to the nose and mouth. There is very little protection against aerosolized particles which can also carry the corona virus.</p> <p>In addition, many such surgical masks are sold without CE mark, so it is even questionable how well they provide even the most basic of protection.</p> <p>Summarizing: a surgical mask offers much less protection than an FFP2 mask (filtered particles are 10 times larger; air is escaping along all edges of a surgical mask).</p> <p>They are better than cloth masks as the polypropylene will not be released, and they have a protective blue water resistance layer on the outside. Such masks are always worn with the blue side on the outside.</p>
Cloth masks	No	Limited	Limited	<p>Cloth masks are not subject to any EU standards. They vary wildly in fit and quality. A well fitting cloth face mask, made of good quality cotton provides fairly good protection, as demonstrated by an elaborate study by the university of Oxford. However other studies shows some material increases the risk of infection as the fibres of the cloth are easily released from the fabric and carry the virus like a dandelion seed floating in the wind.</p> <p>These are not acceptable in hospitals.</p>
Vented/Valve masks	No	Limited	No	<p>Masks with an exhale valve are a big no-no in the corona pandemic era. These masks are only meant to be used in a dusty or dirty environment (e.g. woodcutting or during air pollution) where the quality of the exhaled air is irrelevant.</p> <p>Many people in my experience are not aware that this valve passes unfiltered air out and is a risk to everyone around them. These are not accepted for use in hospitals.</p> <p>Using such masks as corona protection can be described as egoistical. The user benefits from whatever protection such masks offer to the user. But they seem to be indifferent to the fact that their exhaled breath and droplets escape the mask unfiltered through the exhale valve,</p> <p>For instance, the USA CDC has issued a strong recommendation against any masks with an exhale vale.</p>

References

<https://facemaskcorona.co.uk/ffp2>

www.nature.com/scientificreports Nature Journal Efficacy of face masks and face coverings

[Infect Dis \(Lond\). Nov-Dec 2020;52\(12\):908-912. Epub 2020 Aug 26.](https://doi.org/10.1093/infdis/jiaa112) Effectiveness of surgical, KF94, and N95 respirator masks in blocking SARS-CoV-2: a controlled comparison in 7 patients