

# Choosing the Right Mask

## The Advantage of Surgical Face Masks Over Cloth Face Masks in the Construction Space

### Summary

The increase in concern regarding infectious diseases in the workplace has been thrust into the spotlight.

As safety directors, OSHA managers, and others procuring safety equipment and directing its usage, you need to be equipped to address these concerns and protect your workers through providing appropriate protective masks.

Curbing the transmission of microorganisms from one worker to another has now become just as important as crushing, falling, and other common construction and manufacturing concerns. While distancing and hygiene both contribute to the health and welfare of your workers, supplying them with proper PPE – in this case, masks – has become as much your responsibility as providing safety harnesses and hard hats. How do we tackle this new concern?

### Sensibilities for the Construction Industry

While numerous studies have been conducted regarding the efficacy of mask usage in the healthcare industry, the manufacturing and construction industries present numerous differences that must be considered.

- Proximity of workers
- Sterility of the environments
- Environmental conditions
- Wearability

For proximity of workers, in healthcare, the workers are generally in close proximity to known diseases, and to each other. This can dictate the need for advanced masks.

The second point of sterility of environments cannot be ignored. While those healthcare workers may be working in closer quarters and around confirmed ill patients, they are doing so in an environment that is habitually and thoroughly cleaned. For many shops and construction sites, this is pointless, if not bordering on impossible due to the man hours needed and the conditions of the sites.

Beyond that, environmental conditions need to be taken into consideration. For healthcare workers, a contained environment is generally temperate and comfortable. For workers in construction, civil, and manufacturing industries, the work can be hot and humid, and can make mask-wearing difficult at times.

Wearability is a final concern. Construction workers, manufacturing workers, and others in similar and support industries often have extensive movement throughout the day. Rapid twisting and turning, lots of steps, and plenty of opportunities for masks to be jarred loose or knocked off-center through movement. As noted in the Cardinal Health paper, a mask with excellent fit and features is necessary for both safety and comfort.<sup>1</sup>

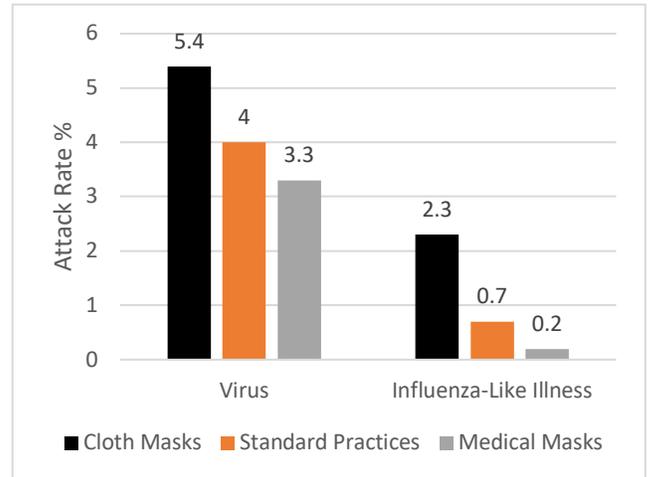
Taking these sensibilities into consideration, as well as looking at price comparison, it's clear that high-end N95 masks and respirators may not be effective or indeed appropriate for many jobs in construction, roadwork, and manufacturing.

This leaves two options: surgical masks, and plain cloth masks.

## Surgical Masks Versus Plain Cloth

In testing the efficacy of homemade masks, Davies et al considered the composition of the mask with a study across 21 subjects that compared basic cloth masks to surgical-quality masks. In their conclusion, the study stated that “An improvised face mask should be viewed as the last possible alternative if a supply of commercial face masks is not available, irrespective of the disease against which it may be required for protection.”<sup>2</sup>

While the Davies study was the first of its kind, and slightly limited in the group surveyed, this was expanded upon in MacIntyre et al, with a study spread over 14 hospitals and 1607 hospital healthcare workers in selected high-risk wards. In this study, the team determined that the moisture retention, reuse, construction, and poor filtration of cloth masks provide minor safety measures at best. Of the three test groups – full-time surgical masks, standard practice of wearing surgical or cloth as dictated by daily practice, and full-time cloth masks – the latter resulted in the most cases of laboratory-confirmed viruses and ILI (influenza-like illness, illnesses with symptoms including fever at or above 100°F along with a cough or sore throat) throughout the study, as seen at right.<sup>3</sup>



As demonstrated in the recent study conducted in Germany – perhaps the most successful country in the response to Covid-19 – masks of any sort help in the reduction of transmission of the disease. While the study Mitze et al caution that additional norms, climatic conditions, and spatial dependencies influenced the response, and that correlation does not imply causation, it indicates that while the reduction varies across regions, all regions in Germany considered in the paper noted a reduction in cumulative registered Covid-19 cases over a period of 10 days after the became compulsory. They concluded that face masks can reduce the daily rate of reported infections by around 40%.<sup>4</sup>

## Conclusion

From these studies, it can be concluded that face masks, while not a golden bullet, do certainly reduce the likelihood of the transmission of virus and influenza-like illnesses.

A surgical mask such as the [Altor Safety 3-Ply Disposable Masks](#), featuring nose clips for secure molding to the face and comfortable, light-weight material, is an excellent and affordable choice for the safety director or OSHA manager seeking to outfit their workers with proper PPE. They do not impact the N95 respirator availability that is necessary for healthcare workers, while providing exceptional filtration (95%+ BFE) and supply-chain security thanks to being locally produced. With better protection than homemade cloth masks while having better availability and usability than N95 respirators, these surgical masks are exactly what you need for reducing potential transmissions at your facility or work site.

<sup>1</sup> <https://www.cardinalhealth.com/content/dam/corp/web/documents/whitepaper/cardinal-health-choosing-the-right-mask.pdf>

<sup>2</sup> Davies, A., Thompson, K., Giri, K., Kafatos, G., Walker, J., & Bennett, A. (2013). Testing the Efficacy of Homemade Masks: Would They Protect in an Influenza Pandemic? *Disaster Medicine and Public Health Preparedness*, 7(4), 413-418. doi:10.1017/dmp.2013.43

<sup>3</sup> MacIntyre CR, Seale H, Dung TC, et al A cluster randomised trial of cloth masks compared with medical masks in healthcare workers *BMJ Open* 2015;5:e006577. doi: 10.1136/bmjopen-2014-006577

<sup>4</sup> Mitze, T., Kosfeld, R., Rode, J., et al Face Masks Considerably Reduce COVID-19 Cases in Germany: A Synthetic Control Method Approach *IZA Institute of Labor Economics* <http://ftp.iza.org/dp13319.pdf>

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