The Worker & Commuter Facial Mask Literature Review, July 2020

Wearing a mask has become increasingly important in the suppression of the COVID-19 virus. Many geographical areas both in Canada and globally are putting strict protocols in place for the use of masks in work and public settings. COVID-19 has negatively affected our economy, overwhelmed health systems everywhere, and has greatly affected vulnerable members of society. It is a virus that is highly contagious and has a long incubation period before signs show. In addition, investigation has demonstrated that 35% of individuals don't display symptoms and can spread the virus without knowing it. To protect others where social distancing is a challenge Canadians have been asked by chief medical officer Dr. Theresa Tam to wear masks. However to note, a mask in itself does not offer complete protection against COVID-19. It is a combination of wearing a facial mask, social distancing, hand washing/sanitizing, and disinfecting of surfaces and environments that is required.

A major factor that makes masks effective is the material the masks are made of. Both **The Worker & The Commuter** are produced from high quality and effective re-usable and washable high thread count quilter's cotton.

High thread count quilter's cotton has been proclaimed as a very effective barrier material to use in the manufacture of a fabric facial mask. In a recently published study from Florida Atlantic University, (Physics of Fluids, June 2020), titled "Visualizing the effectiveness of Face Masks in Obstructing Respiratory Jets" research provided significant data about the effectiveness of quilter's cotton to contain airborne droplets. Dr. Siddhartha Verma and his team used visualization experiments to observe the effectiveness of multiple face covering materials. They placed the different facial coverings onto a medical mannequin and through a cough simulation the following was discovered:

- Airborne droplets travel 8 feet when a cough is not covered
- A Bandana wrapped around a face reduces airborne droplet travel to 3 feet
- A folded cotton handkerchief reduces airborne droplet travel to 1 foot, 3 inches
- A cone-style store-bought paper mask reduces droplet travel to 8 inches
- Finally, a well-fitting mask stitched of two layers of quilter's cotton reduced airborne droplet travel to 2.5 inches.

In another study done at the Wake Forest Institute for Regenerative Medicine in North Carolina, Dr. Scott Segal used testing known as particulate filtration to determine what mask materials removed 0.3 – 1.0 microns in diameter, in comparison to surgical and N95 medical masks. Results showed that a double layer of high thread count quilter's cotton was 79% effective, while a surgical mask was 62% to 65% effective. Most efficient is the N95 at a rate of 97%.

The pathogen responsible for COVID-19 is found mainly in respiratory droplets. The droplets are discharged by infected persons while coughing, sneezing, talking and breathing and can attach themselves to another person or another surface. Therefore it is very important that before you put **The Worker** mask on your face you sanitize your hands. Clean your hands again before removing your mask and place it into a plastic bag destined for washing. Remove your mask from the plastic bag, machine wash in warm water and lay flat to dry, **each day**.

References:

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