



Reusable Filtered Mask

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In settings where facemasks are not available, HCP might use homemade masks (e.g., bandana, scarf) for care of patients with COVID-19 as a last resort. Centers for Disease Control and Prevention

Timeline



3/22/2020 3/23/2020 3/24/2020 3/25/2020

3/26/2020

- Joe Savoie, Director of Imaging Services, texts 3D printed mask
- Prototype printed over night
- Meeting with Infection Prevention
- Fit test with Respiratory Support Asked Facebook to for people with 3D printers
- Connect groups in LA on getting masks made
 - CRASH Space <u>https://blog.crashspace.org/</u>
 - Sunweaver Creative
 - Trojan Family
 - Iovine and Young Academy
 - USC School of Architecture
 - USC School of Engineering

Reusable Filtered Mask



Reusable

- Can be sanitized in a hospital setting
 Filtered
 - Has to be able to provide filtration comparable to N95 or better

Mask

• Must be able to fit on the face of the healthcare worker

Disinfection



1.4% Hydrogen Peroxide



THE UV Box UV 254 nm germicidal wavelength

Pulsed Xenon Robot UV Disinfection



Filter Material



- We are not creating our own filter material.
- We are assessing different material for efficacy and ease of installation
- We are looking to partner with laboratories to quantitatively test filter materials.

Filter Material

Required Criteria:

- Needs to be MERV 16 or better
- Must not have fiberglass
 Nice to have:
- Easy to adapt

Honeywell HEPA Filter Model: HRF-R1



Model HRF-R1

3D Printed Mask





Finishing the Mask

ost King

PROFILE IUM PREM RUBBER Self-Stick Weatherseal # 5/16 in Wide x 1/4 in Thick x 17 ft Long Made from EPDM Cellular Rubber Foam Will not Harden, Grack or Freeze Retains Shape in Sub-Zero Temperatures Fils Gaps from 1/4" down to 1/8" GOMA PREMIUM Buriete autoadhesivo a 7,9 mm de ancho x 6,35 mm de grosor 5/16 WIDE

FILLS MEDIUN GAPS

x 5,2 m de largo Hather de expl.ma de gome de star GPDM # No endurement, agrietarà o congeleré # Mantieres au forma en temperaturas bajo com # Melleris huseage de d.3.mm a 8.2 mm





Finished Mask







3D Printed Mask





Reusable Filtered Mask



For more information:

https://keckmedicine.org/covid/ppe

FIGHT ON!