June 25, 2020

UW GUIDANCE FOR THE USE OF PHYSICAL BARRIERS AND BEST PRACTICES

The Environmental Health & Safety Department (EH&S), in partnership with Physical Plant, has developed this guidance and best practices for work environments that are considering physical barrier (aka plexiglass barrier) installation as a component of overall risk mitigation strategies to reduce the risk of SARS-CoV-2 transmission.

At this time, the primary route of transmission of SARS-CoV-2, the virus that causes COVID-19, is direct contact with an infected person’s respiratory droplets during, speaking, breathing, coughing and sneezing. Prolonged close contact with an infected person increases the risk of exposure. Other routes of exposure are being studied, such as aerosol transmission, and may be occurring. For the purposes of evaluating physical barriers, the hazard is “droplet spread via face to face contact”.

Risk mitigation strategies to minimize transmission of SARS-CoV-2 via droplet spread require interventions for the local work environment in most areas of the hierarchy of controls:

1. Elimination in the workplace: Continue to tele-commute whenever possible, eliminating the potential exposure. Eliminate the hazard of SARS-CoV-2 transmission by establishing expectations that those who are ill will remain at home when symptomatic or if exposed; isolate and send home workers if symptoms develop at work and encourage symptom monitoring prior to arriving at work.
2. Substitution: It is not possible to replace the hazard (SARS-CoV-2 transmission).
3. Engineering Controls: isolating people from the hazard may include changes in room ventilation rates, additional outside air, additional filtration and physical barriers.
4. Administrative controls: Administrative controls include careful review of the way people work (if work cannot be conducted remotely) and implementing where possible 6-foot distance, staggered schedules, handwashing, additional environmental surface disinfection, covering of cough/sneeze and frequent handwashing.
5. Personal protective equipment: Wearing PPE is the final strategy to implement. All staff are expected to wear face coverings when in buildings. Additional PPE may be necessary when unable to maintain 6-foot distance.

All practical steps to eliminate the hazard should be taken prior to considering a physical barrier. We are most safe if business processes are modified and close contact is avoided.

Plexiglass barrier is an engineering control that can prevent respiratory droplet spread when in close contact and reinforce physical distancing requirements. Physical/structural environment may not always be appropriate for installation of properly sized barriers AND should not be the only control considered and/or implemented. Factors to be considered for barrier installation include workplace type (e.g. healthcare) and risk level, occupancy and density levels and frequency of contact.
Advantages of physical barriers include:
- Blockage of large respiratory droplets produced by a person who is in close contact with the barrier.
- Create a physical separation between people when it is difficult to maintain six feet of separation.
- Support the continuance of transactional/face-to-face business process requirements.
- Many are easily cleaned and disinfected.
- A visual cue to workers and customers, and visitors to maintain distance.

Disadvantages of physical barriers include:
- Not one size fits all and do not fully protect anyone from COVID-19.
- Do not replace physical distancing of six feet.
- Create obstruction or interference with ventilation and or fire and life safety protection.
- Could create a physical (sharp hazard) when pushed against.
- Do not replace the need to follow other public health requirements such as practicing good hygiene.
- Do not protect aerosolized virus from moving over/around the barrier.
- May impede accessibility.

APPROPRIATE LOCATIONS
- Locations where barriers may be appropriate include patient reception desk (e.g. University Health Services and Veterinary Medicine Hospital), retail point of sale, grocery or dining checkout.
- Extending cubicle partition heights beyond 55 inches for sitting height or 72 inches for standing height is not considered to be an effective measure/control. Regardless, height of partitions and placement should be carefully considered so as not to block sprinkler distribution at ceiling or accessibility at work surfaces.
- Placing a physical barrier between co-workers on a shared desk would not be an effective control.
GENERAL GUIDANCE FOR BARRIER DESIGN

- The height should generally be sufficient to protect from the breathing zone on the tallest side of the barrier (e.g. one side standing, one sitting, the height must be above the height the person standing).
  - For standing height -- Top horizontal edge height of the barrier should be at least 72 inches, or 6 feet, above the floor.
  - For sitting height -- Top horizontal edge of the barrier should be at least 72 inches, or 6 feet, above the ground.
- Ideally, the width requirements shall be limited to commercially available width but are sized to extend slightly beyond the workspace being protected.
- Placement of an opening for document exchange may be needed and should be off center from the breathing zone, ideally at the bottom or in an alternate location that allows for natural and comfortable body motion to prevent musculoskeletal pain or injury.
- In some situations, communication may be difficult with barrier and if PPE is being worn and may require speak through devices.
- If needed, side panels may be attached.
- Should not interfere with existing ventilation (air must be able to move unobstructed around or over the barrier).
- Does not impede existing fire and life safety requirements including emergency egress (cannot block a walkway in any way and cannot be closer than 24 inches from the ceiling).
- Modifications to the arrangement and layout of existing spaces should be done in such a manner that they are temporary, reversible, and do not cause damage to the existing physical infrastructure.
- See Appendix B for a list of vendors offering surface mounted, freestanding or rolling barrier options.
- See Appendix C for examples of some installed barriers.

GUIDELINES FOR INSTALLATION

- Whenever possible, a surface mounted or free-standing barrier should be utilized.
- Large barriers should be carefully evaluated and installed to prevent inadvertent knocking over due to weight or imbalance.
- If necessary, use temporary adhesive when securing to a desk, but do so with careful consideration for the long-term impact to finishes.
- Mounting to the floor, wall, from ceiling, ceiling grid, building structure, mechanical system, or pipes requires consultation and assistance from Physical Plant.

CLEANING AND MAINTAINING PLEXIGLASS BARRIERS

- Barriers must be considered contaminated surfaces anytime occupants have been present and as such must be cleaned frequently.
- Units must establish a cleaning procedure. Some cleaning products may cause cloudiness in plexiglass; consider testing an inconspicuous area.
- Barriers must be cleaned at least twice daily or more frequently if indicated.

PROTECTIVE WORKPLACE BARRIER FLOWCHART

The UW Madison Protective Workplace Barrier flowchart found in Appendix A of this document provides the steps Units should follow if additional assistance is needed. As indicated in the
flowchart and consulting this document, if no additional information is needed the unit can obtain and install the barriers.

1. All protective workplace barriers will need to be paid for by the requiring unit. Included in Appendix B is a list of vendors that can be contacted for purchase. This is not expected to be an all-inclusive list or only vendors offering products.
2. Occupants shall consider changes in process, workflow, and business practice to de-densify and eliminate close personal interaction wherever possible.
3. If needed, EH&S is available to provide consultation for complex situations/scenarios, Physical Barrier Consult Request Form at https://uwmadison.co1.qualtrics.com/jfe/form/SV_a5KFZ0Vta8j3hmR
4. Modifications to the arrangement and layout of existing spaces should be done in such a manner that they are temporary, reversible, and do not cause damage to the existing physical infrastructure.
5. Physical Plant is available to assist and shall be consulted prior to modifying the building. This includes –attachment to walls, floors, ceiling, ceiling grid, mechanical system, pipes, building structure, etc... Contact Physical Plant Customer Service at (618)263-3333 or https://wiscready.assetworks.cloud/

REFERENCES
https://blog.ki.com/how-to-design-the-workplace-for-social-distancing
https://ncceh.ca/content/blog/physical-barriers-covid-19-infection-prevention-and-control-commercial-settings
A.K.A. Portable Clear Acrylic U Shape Barrier Shield; Sneeze Guards; Plexiglass Shields; Acrylic Barriers; etc...

1. All protective workplace barriers will need to be paid for by the requiring unit.
2. Occupants shall consider changes in process, workflow, and business practice to de-densify and eliminate close personal interaction wherever possible. Review the guidance found in this document for recommendations and best practices.
3. EH&S is available to provide consultation for complex situations/scenarios. Physical Barrier Consult Request Form https://uwmadison.co1.qualtrics.com/jfe/form/SV_a5KFZ0Vta8j3hmR
4. Modifications to the arrangement and layout of existing spaces should be done in such a manner that they are temporary, reversible, and do not cause damage to the existing physical infrastructure.
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6. List of known commercial vendors in Appendix B of this document

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**Physical Plant Plans & Executes Work**

**Physical Plant Consultation**

**Acceptable Solution?**

**Physical Plant Plans & Executes Work**

**Commercial off the shelf unit suitable?**

**Modify Building?**

**NO**

**Still Need Help?**

**YES**

**NO**

**SUCCESS!**

**Modify Building?**

**NO**

**Commercial off the shelf unit suitable?**

**YES**

**Still Need Help?**

**NO**

**YES**

**Review FP&M Guidance on the Use of Barriers and Best Practices**

**Physical Barrier Needed?**

**Athletics**

**Housing**

**Unions**

**All Others**

**EH&S Consultation**

**Still Need Help?**

**NO**

**YES**

**Physical Plant Consultation**

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**Appendix A UW GUIDANCE FOR THE USE OF PHYSICAL BARRIERS AND BEST PRACTICES**

**UW-Madison**

**Protective Workplace Barrier Flowchart**

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Appendix B
Vendors
PlasticsFAQ
https://www.plasticsfaq.com/online-store

PowerMation
https://www.powermation.com/protective-barriers/

State of Wisconsin’s BCE Furniture Sales
BCE Safe Space Catalog https://www.shopbsi.com/PDFs/BCE_SAFESPACE_FURNITURE_CATALOG_0620-FUR.pdf
Aubright
http://www.aubright.net/about-us.html
Power Mation
https://www.powermation.com/protective-barriers/
Vari (formerly VariDesk)
https://www.vari.com/walls-and-privacy/
Rockford Systems
Walmart Barrier:
https://www.walmart.com/ip/Window-Guard-Against-Employers-Shield-Customers-Screen-Barrier-Protective-Clear-Sneeze-Barrier-Workers-Sneeze-Plexiglass-Coughing-Acrylic-Count/581078069?wmlspartner=wlpa&selectedSellerId=101002393
Hanging Option:
https://www.shoppopdisplays.com/13102/ceiling-hanging-sneeze-guard-shield-315-x-475.html?gclid=CjwKCAjw_LL2BRAkEiwAv2Y3SUH_Ja-VIv6K8P_dv0ohIqP5S3MJbnjv37a4HX83qaSE0U5RFS6CQBoCAJgQAuV_BwE
Appendix C
Installation showing different heights, pass through windows and height does not block ventilation

Floor Standing Unit at retail counter, no installation needed
Examples of Counter/Desk units at high traffic areas