West Point
Music Research Center

West Point Band Plexi Glass Barriers Overview

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Musician Plexi Glass Barrier: Materials and Process

End Product: 3 - sided, hinged, and stowable, clear plexiglass barrier with open front

Opened dimensions: Height- 60" (All Panels)

Rear Panel Width- 48"

Left and Right Panel Width- 47"

= 15.6 sq/ft of occupied space

Stowed dimensions: Height- 60"

Width- 48.5"

Thickness- 3/4" – 7/8" (for shield made with 1/8" thick plexiglass: total thickness dependent upon plexiglass thickness used)

Materials: Per each barrier:

1 piece of 48" x 60" plexiglass and 2 pieces of 47" x 60" plexiglass made from 5' x 8' sheets of 1/8" thick plexiglass (highly suggest 3/16" or even better 1/4")

2- 48" continuous (aka "piano") hinge with 1/4" diameter holes (highly suggest 60" if available)

36- Blind Rivets, 1/4" diameter, .475 length

Build Process: 1. Cut plexiglass to size- Piece 1: 48" x 60"

Piece 2 and 3: 47" x 60"

2. Center hinges on each 60" side of piece 1 so that they open/close towards each other

3. Mark holes onto plexiglass from hinge, drill holes with 1/4" bit, set aside piece 1

4. On pieces 2 and 3, center hinges on one 60" side of each piece

5. Mark holes onto plexiglass from hinge, drill holes with 1/4" bit, set aside pieces 2 and 3

6. Attach hinges to piece 1 by placing rivets so that the "tail" (not the broad flat "head") of the rivet is towards the back of each piece and using every 4th hole. (adjust amount of rivets/holes used as needed)

7. Attach pieces 2 and 3 to piece 1 by aligning holes and again placing rivet "tail" towards the back of pieces 2 and 3.

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Additional Notes:

- This design, while effective, is fragile and can be prone to cracking and breaking if handled roughly. It was used for its simplicity and materials available in a very short timeline. That being said, it fulfills the need.

- Setting up and tearing down each barrier requires two people and is recommended only as absolutely necessary. 3/16" to 1/4" thick plexiglass is ideal. 1/8" works, but is more prone to damage and was the only thickness available at the time of our build.

- This design also only becomes secure when each side panel (piece 2 and 3) are attached to each adjacent barrier along the front edge, otherwise the side panels are "floppy" and unstable. Clear packing tape has worked well here as it allows the angle of the barrier to be adjusted within the ensemble setup even after taping them together.

- The outside panels of the end barriers within a row will need some sort of extra stability, whether it be a stanchion or a purpose built addition.

- These barriers are best used indoors only. Wind, even slight, has a large effect on their stability and securing them, beyond their own weight, can be difficult.

- Finally, this is by no means the best design idea for a barrier. At best it will serve its purpose as is, but at worst will hopefully be a starting point for a better barrier to allow ensembles to more safely rehearse and perform together.