

Request for quote:

The designs of the “Bathtub insert” and “Ottoman” have been updated to better meet the needs identified during user evaluation. We are looking for a quote to create the tooling and produce rotationally molded polyethylene bathing fixtures for our Dept. of Veterans Affairs funded design program. Below is an overview of our project and a description of the parts.

The project:

We are developing assistive bathing devices to be used by spinal cord injured and other disabled Veterans for independent bathing. The fixtures will be used in existing bathtubs purchased as a set or, separately depending on the client's needs.

Water reservoir:

The hollow shell of the bathtub seat will hold water to add weight and stability. A filler cap and drain will be added to the space below the seat allowing people to add water, thus weight, to the chair and stabilize it within the bathtub.



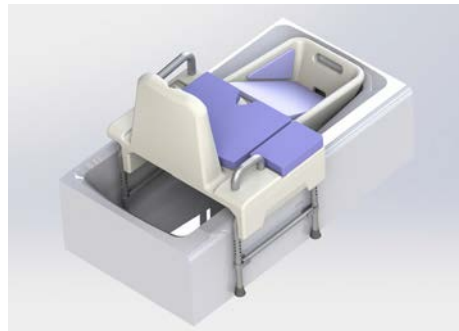
Bathtub seat with legs, padding and grab bars



The Ottoman foot support with padding



Seat in a standard bathtub



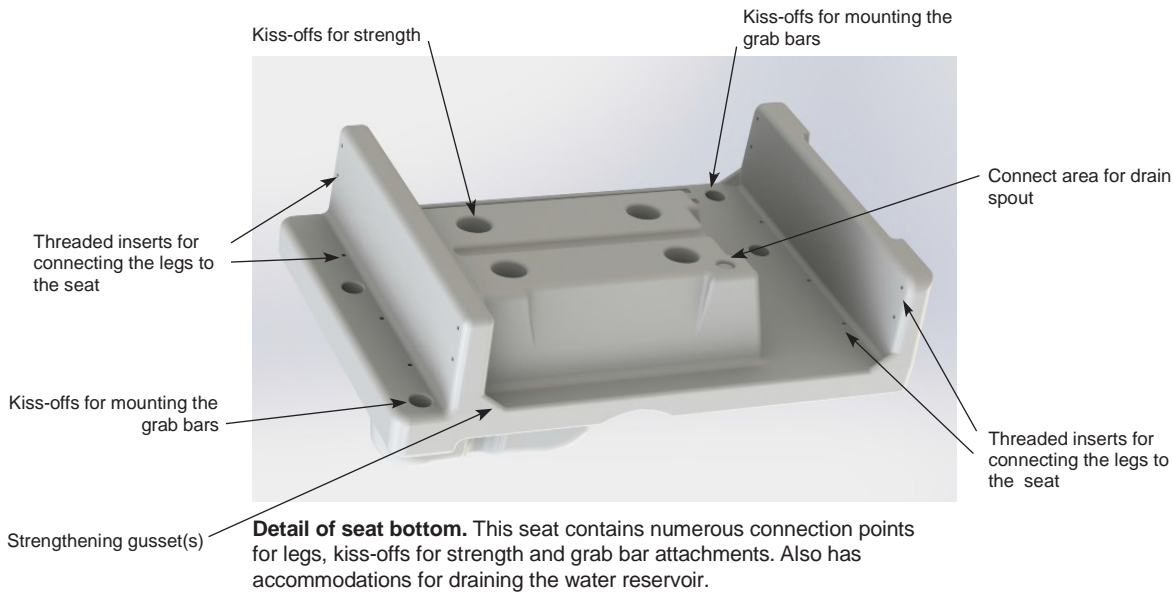
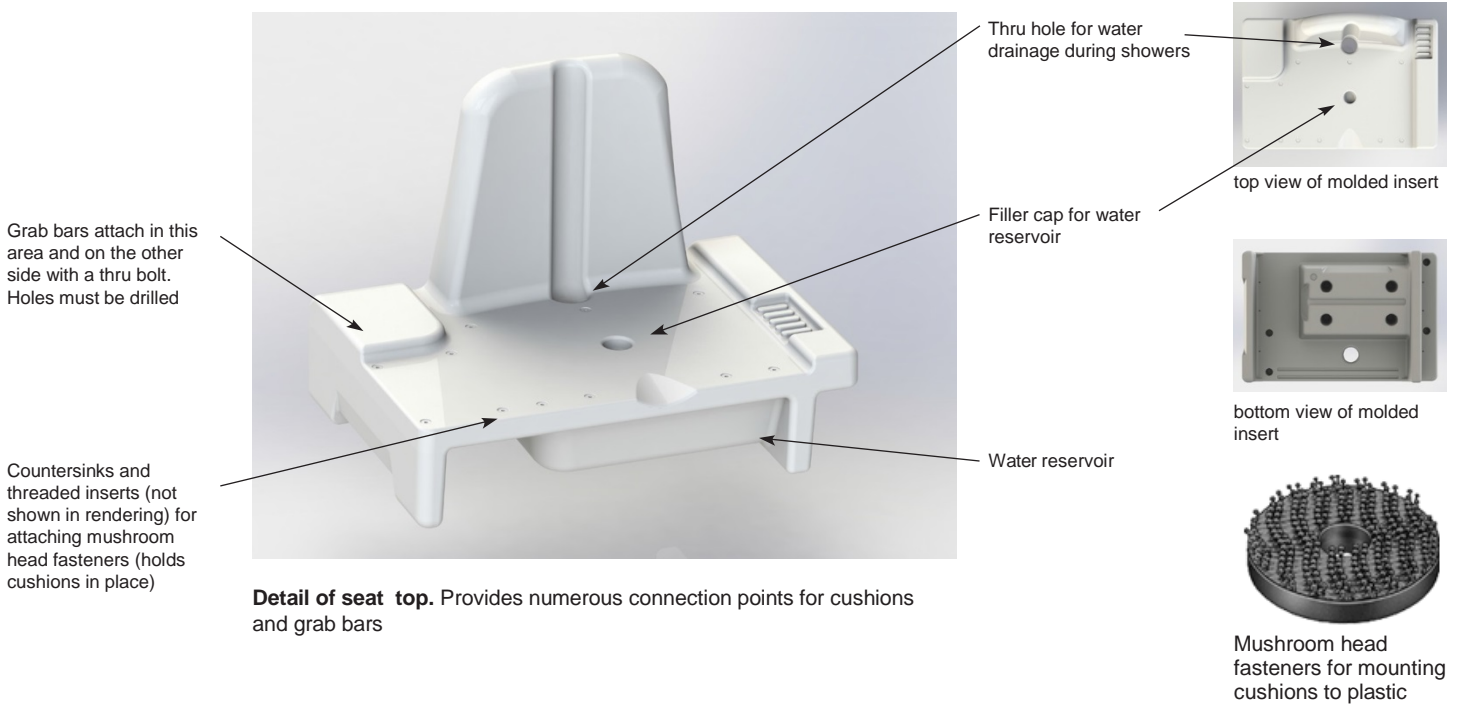
Seat and the Ottoman in a standard bathtub



Seat and Ottoman without cushions

Bathtub seat details:

The seat must hold water. It will be filled from the top middle and drained from below, a standard flush mount cap and spout must be included in the quotation. Textures will need to be applied where appropriate and a color will need to be chosen.



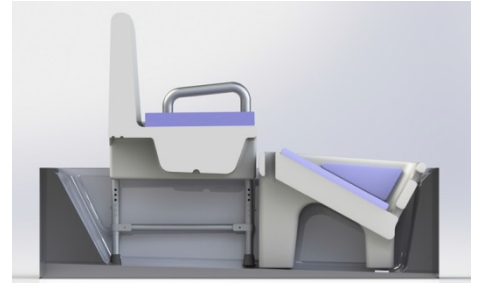
Leg system:

The aluminum legs are attached by screw to threaded inserts embedded in the plastic of the molded seat.

Screws attach the legs to the embedded inserts from two directions



Legs attached to the insert



Cross section showing the Ottoman and seat in standard bathtub



right side 3/4 view



left side 3/4 view

Ottoman foot and leg support system:

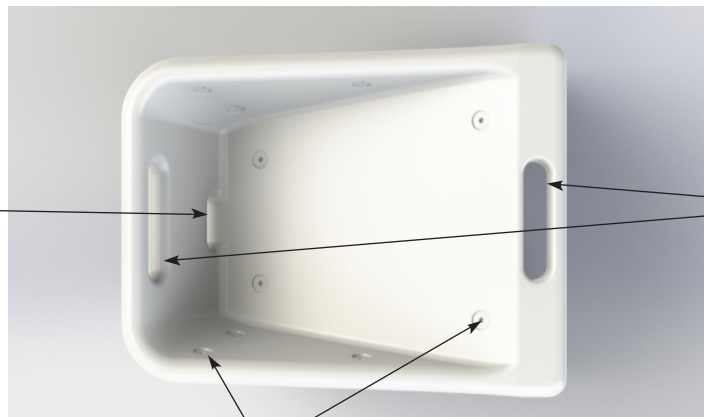
Molded leg support with cushions to protect the heels and sides of feet

Water drain



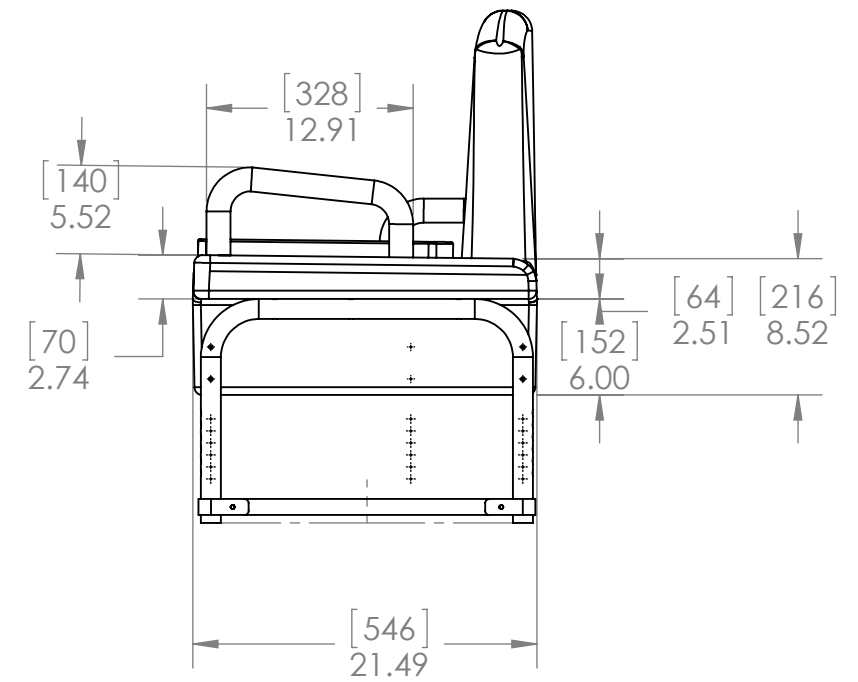
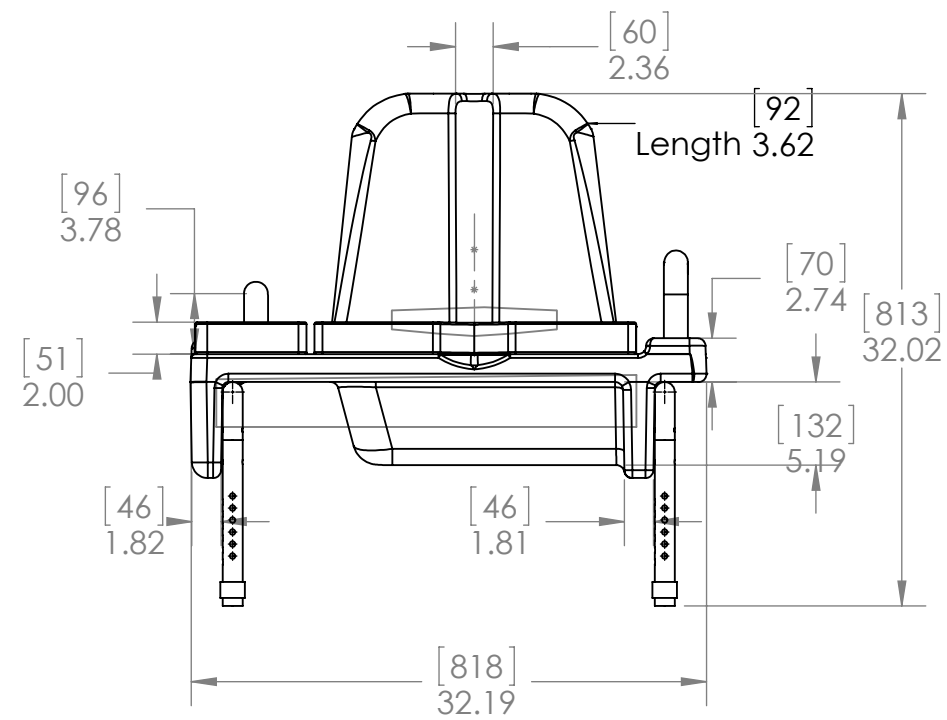
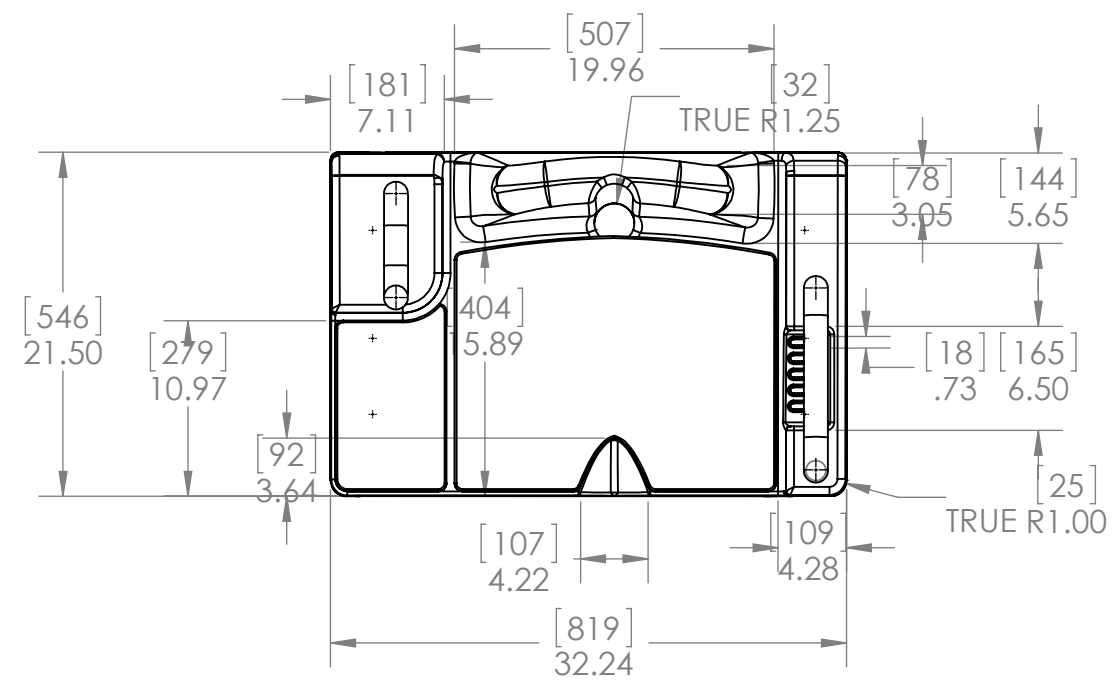
Threaded inserts for mounting rubber feet

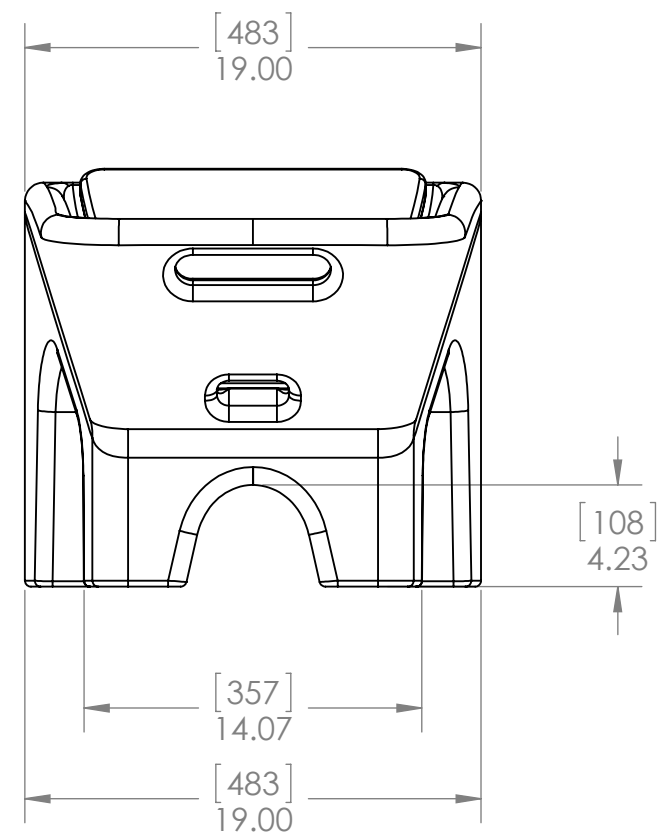
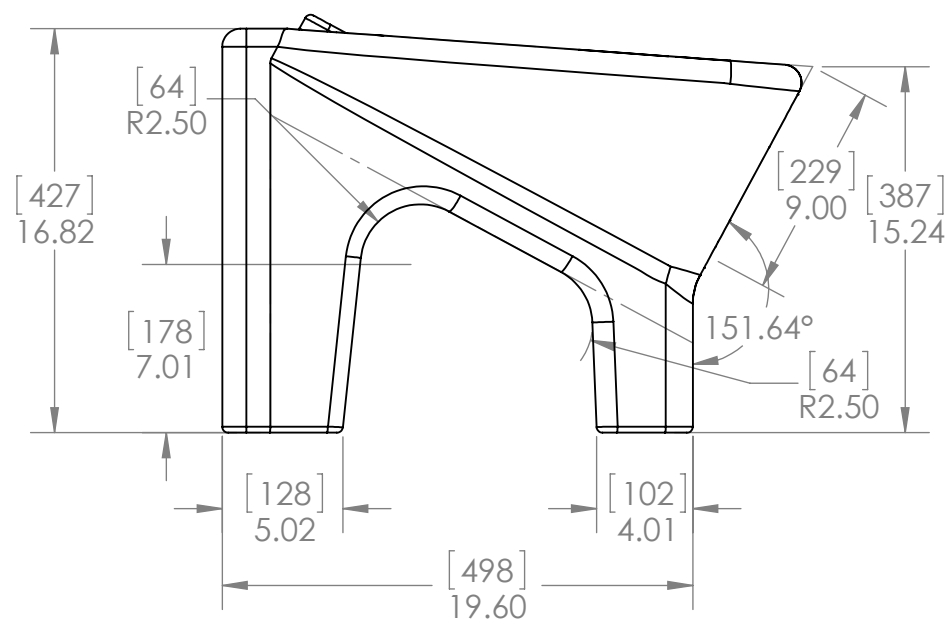
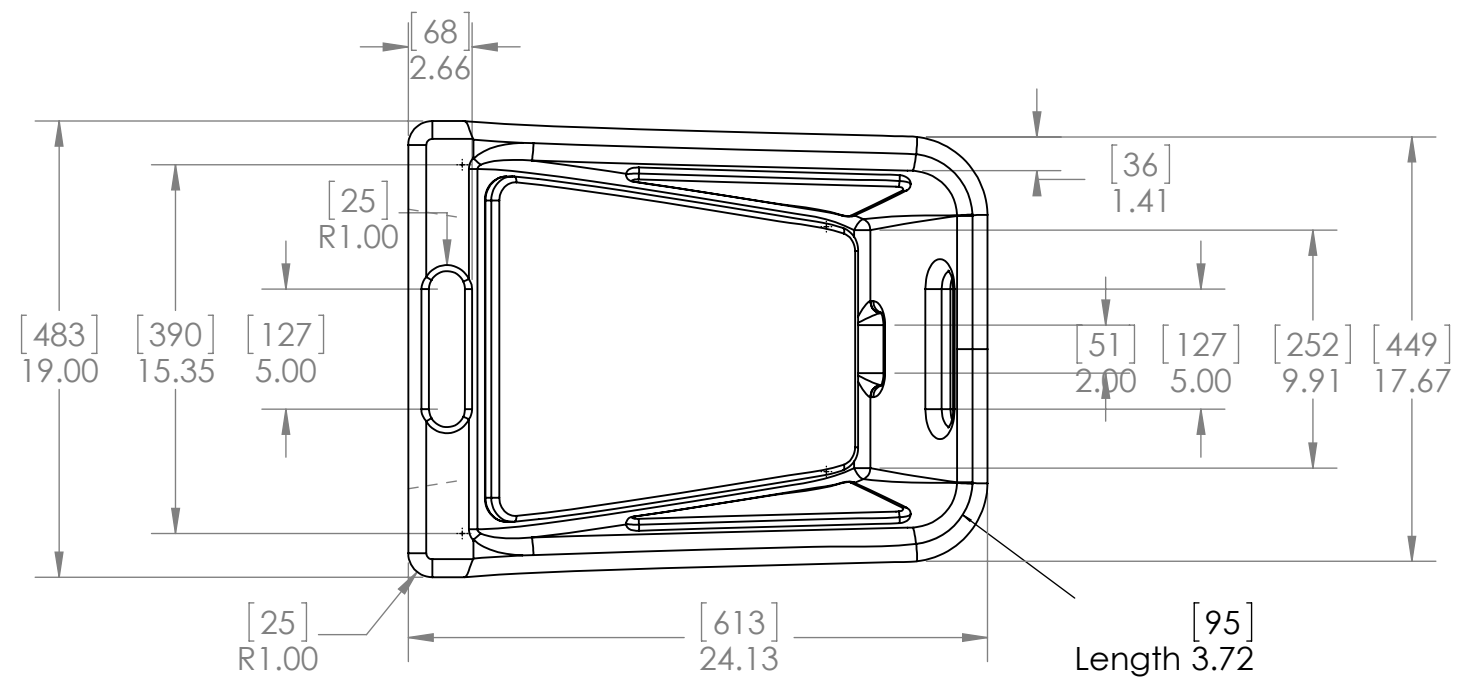
Water drain



Countersinks and threaded inserts (not shown in rendering) for attaching mushroom head fasteners (holds cushions in place)









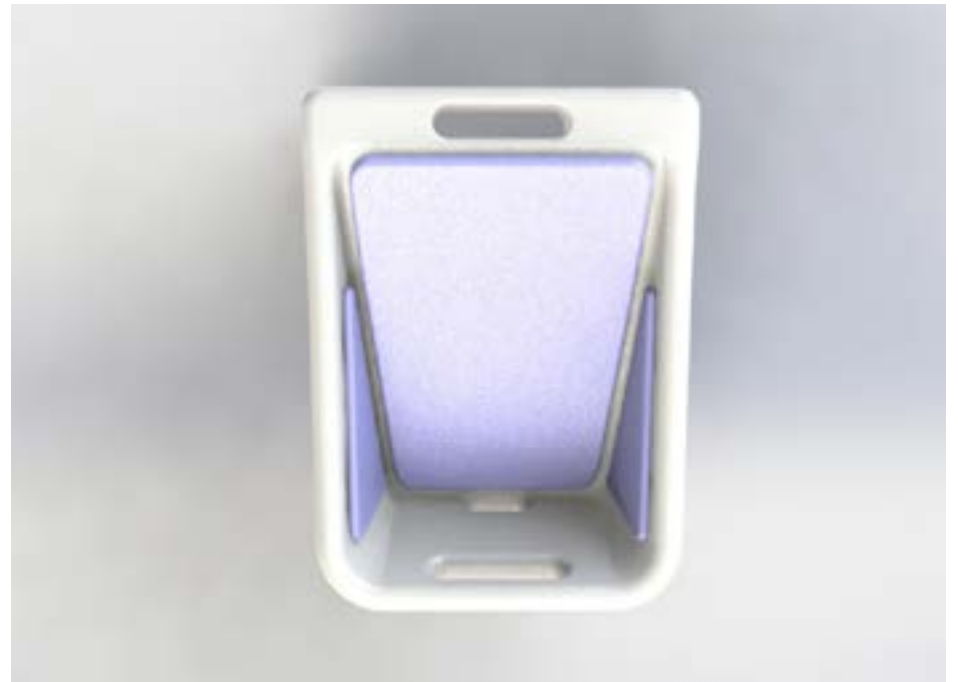
ottoman 3/4



ottoman front



ottoman side



ottoman top



bathtub seat insert 3/4 with pads



bathtub seat insert front with pads



bathtub seat insert side with pads



bathtub seat insert top with pads

Quote and engineering needs:

We have listened to the input of several knowledgeable industry professionals in our efforts to engineer these parts for production. We have done our best to apply the input received and are in need of help detailing the design, choosing the best fastening options and achieving alignment between the metal legs and the plastic insert. Please be sure to account for engineering time on the following topics as part of the quote.

Quantities of molds and parts:

We will be evaluating the fixtures with volunteers at the hospital once we have complete systems available. For these purposes we will need a small numbers of parts initially.

- (4) Bathtub seats
- (4) Ottomans

Part specifications (updated 11-10-14):**Insert:**

Surface area: 2885 in²/18,600 cm²

Volume: 3518 in³/ 57,650cm³

The seat load bearing capacity will be 200 kg (440 lbs) for combined seat and backrest and 1500 Newton - 150 kg (330 lbs) for the seat itself.

Threaded insert count: 25 total

Cushion attachment: 11

Leg attachments: 14

Ottoman:

Surface area: 2098 in²/13,530 cm²

Volume: 2521 in³/41,300 cm³

Threaded insert count: 14 total

Cushion attachment: 10

Foot attachments: 4

1. **Wet environment ready:** The fixtures will be used in a shower on a daily basis, it must be built to withstand those conditions.
2. **Water tight container:** In the interest of added stability we want to add weight to the bathtub seat by filling it with water. It will require a cap for the top surface and a drainage spout for the bottom
3. **Type of mold:** Will they be cast or CNC?
4. **Texture:** The surface needs a texture for additional grip when wet and to hide surface flaws. We will need assistance choosing this texture.
5. **Color:** We would like to know our options, white is the default with a light blue being an option
6. **Anti-microbial resin:** This will help in wet environment
7. **Part strengthening:** We would look to you for helping us optimize the strength of these parts through 'kiss-offs' and other structural elements to attain optimal strength and manufacturing efficiency.

Thank you for your quote submission, we look forward to hearing from you.

END