

# ***Welded Frame Bin Instruction Manual***

This bin design is a heavy-duty option for outdoor use.



## **Materials**

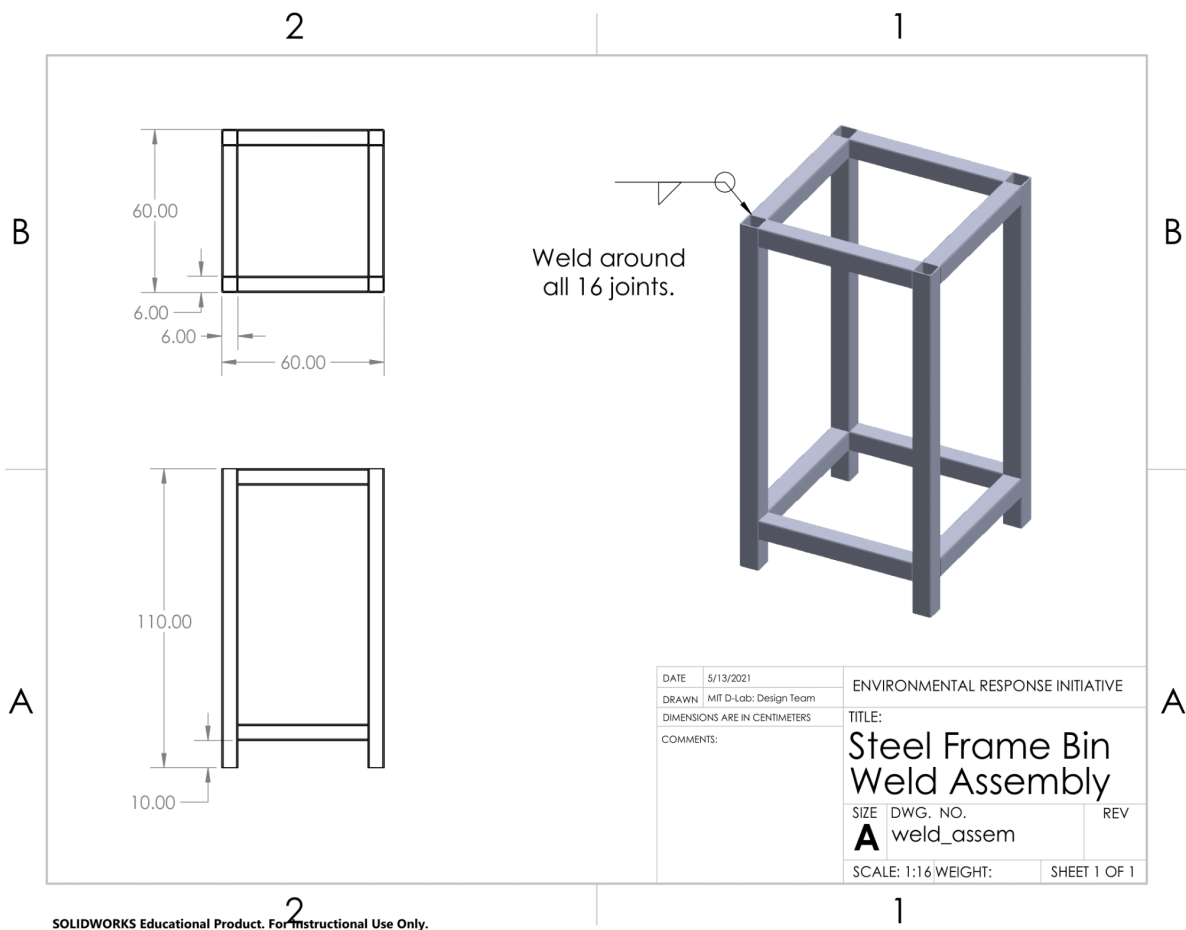
- Weldable rectangular metal tubing such as low-carbon steel (height = 60 mm, width = 6 mm, wall thickness = 4 mm)
- 308-by-192 cm 16-layer plastic sheeting recycled from water sachets [see *Making\_Plastic\_Sheets.mp4*]
- Parchment paper
- Hot iron or clothing iron

## Instructions

1. Weld the frame

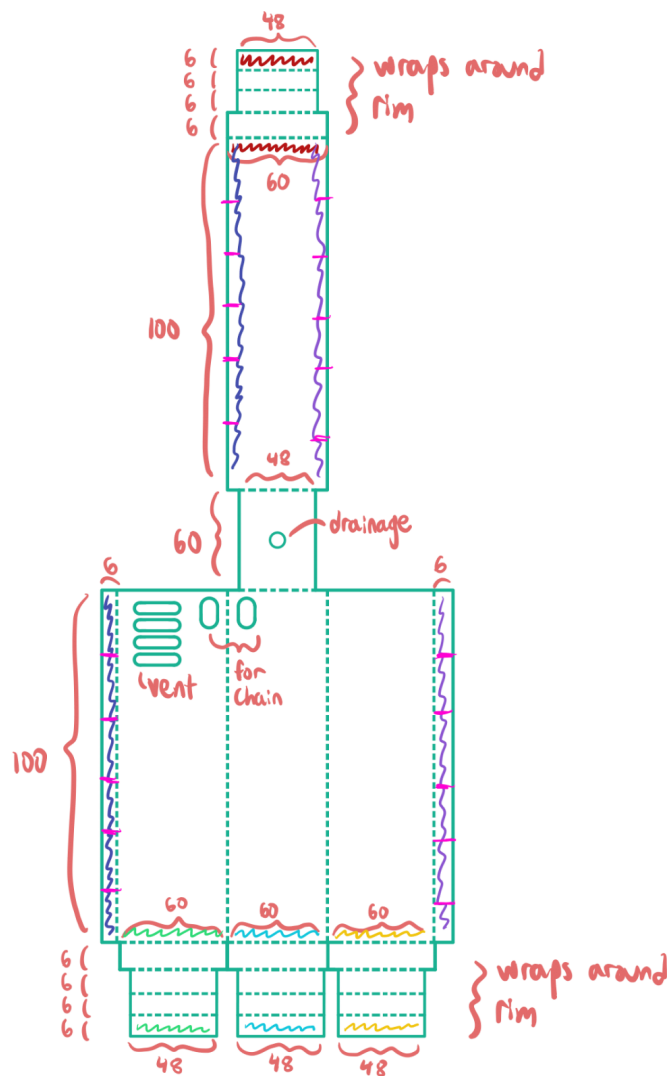
The following is a drawing produced in Solidworks that can be sent to a welder/manufacturer. The PDF can be found in *Steel Frame Bin > weld\_assem.pdf*.

Note: We provided a very specific design for reference but the design can be altered for different trash can sizes and available metal stock.



## 2. Mount Plastic Sheeting

- 2.1. Prepare a plastic sheet as described in *Materials*.
- 2.2. Refer to the diagram below. Cut out the sheet along solid lines. Dimensions are in centimeters.
- 2.3. Align the "drainage" hole indicated with the bottom of the frame.
- 2.4. Using a hot iron at 400°C, covering the plastic with parchment paper to prevent it from sticking to the iron, fold and crease along dotted lines to wrap the frame.
- 2.5. Using a hot iron at 400°C, fuse matching colors in the diagram. *Tip: A strong grip can be made along the "blue" and "purple" tabs by making these areas 8 layers thick (instead of 16 layers thick), cutting along the pink lines, alternating the overlap, and then fusing them.*



With the plastic covering, the bin should look like this.



The gap in the front corner allows a chain to be wrapped around it to secure the bin. A vent at the bottom allows waste to air out and prevents rain from leaching out. A drain hole at the bottom allows for water seepage during the rainy season.

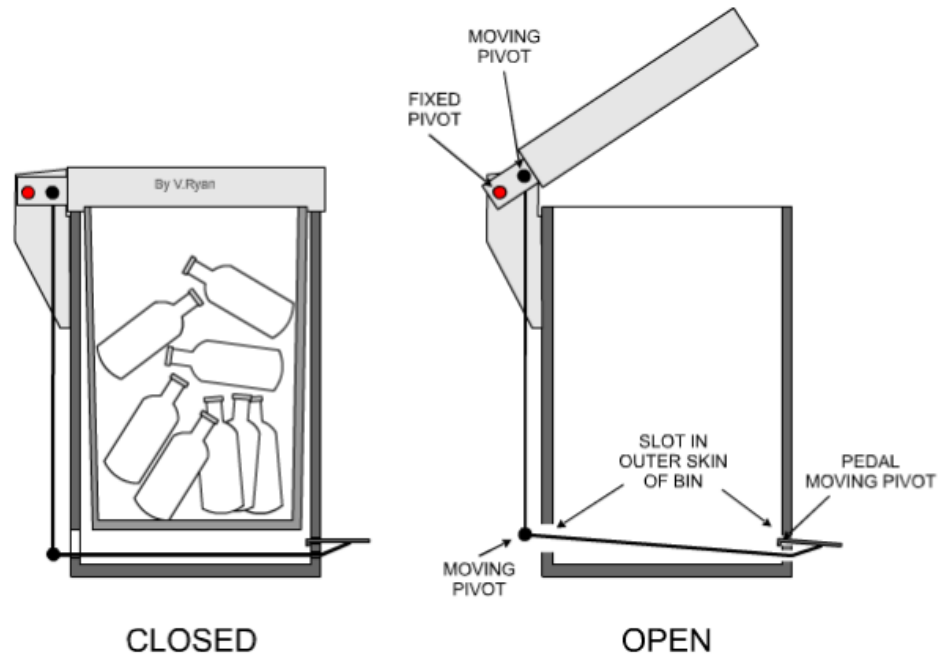


### 3. Further design considerations

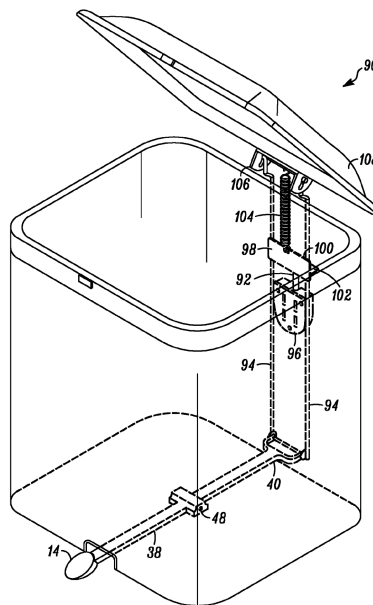
#### 3.1. Lid

- 3.1.1. A lid can be thermoformed from recycled plastic following methodologies in the “Thermoformed Rigid Bin” folder.

#### 3.2. Foot-pedal Mechanisms



Source: <https://technologystudent.com/rmprep09/ped1.html>



Source: Unknown