

Strong Points

The cot design implemented, or “The Sled” is well constructed and through analyses, it was found that the cot is over-designed for its particular application. As a result, the life cycle of the cot will be long and should last the shelter a long time. The fabric chosen is a sturdy material and adheres to all of the specifications that the customer required (breathability, wash ability, durability). The team did a good job at making changes requested by the customer, such as raising the bars that are around the bottom so the bins used at the shelter can fit underneath each cot. The steel conduit that the frame was made out of is sturdy and can easily withstand the 99th black male percentile.

Weak Points

Due to the reinforcements in the fabric being a steel rod, the fabric is not able to be thrown into a washing machine, which the customer suggested but wasn't a necessity. An adhesive was also applied around the edges of the fabric which could potentially become lose its adhesiveness and is another reason the material cannot be washed. The customer initially asked for a minimum amount of metal objects due to a theft problem in the home, but the team chose to use ratchet straps. The fabric was very elastic which resulted in the need for constant retightening of the straps. The customer also stated that the material has the potential to create a “peak and valley” phenomenon in which the cot users stated was uncomfortable. The solution to this discomfort was to tighten the straps, which could become tedious over time. It was then found that these straps had to be tightened after almost every usage. Another issue is that if these straps are tightened too much the material has the potential to tear. The actual steel conduit that the cot was made out of was heavier than initially hoped since these cots are to be hung from the ceiling.

What Would We Do Differently?

If the team were to do this project differently, the first thing that would be dealt with are more design considerations. We would also try and pick a different fabric that wasn't as elastic and can be easily washed. The team also would remove the straps completely and try other types of attachments, such as Velcro, sewing, etc. We would also choose a different material to make the frame out of to reduce the weight of the frame.

Lessons Learned

Midway through the project, we were tasked with changing the specification of a stackable cot to one that could be hung. This put behind by two to three weeks of work. Although we would have preferred to know this earlier on, due to the nature of the project and its simplicity, we were still able to pull through and bring the customer what they wanted.

In the two-quarter time period that the group had to work on this project, we faced many difficulties. The positive outcome is that we have learned that communication is key. Many of the issues that we had were related to poor communication. In working with other disciplines, we also recognized that not everyone thinks the same. It takes time and patience to relay information to those who do not think like you.

Group Dynamics

Many issues arose due to the group dynamics. Like mentioned below, communication added to that. Many of the ideas that were presented were highly disagreed upon and actions were taken without group consent. This caused immediate frustrations within the group; however, with the help from our guide and some communication with the customer, the issues were resolved.