Summary

Everite Door Co., a small manufacturer of custom style wooden garage doors, presented our group with the task of analyzing why their custom wooden garage doors were experiencing excessive warping and bowing at the beginning of the semester.

At first, the original objective was to design 3 new styles of custom style garage doors for the company: a low cost design, a medium cost design, and a high cost design. However, after further investigation and analysis, it was apparent that Everite Door Co. did not collect enough information on their defective doors to correctly target and eliminate whichever factors were contributing to the warping of the door. Without this data, it is nearly impossible to tell which door designs are faulty.

Since there was not enough information to find correlations and similarities between their defective doors, an analysis was done on the wood, adhesive, and structural properties of the doors. Once this analysis was completed, several short-term recommendations regarding the wood types, adhesives types, and structural properties were made to Everite Door Co. that consisted of wood densities and shrinkage rates, different adhesive properties and applications, and the various structural properties of the door. The goal of these recommendations is to help slow down/eliminate the bowing of the wooden garage doors.

One long term recommendation the group made to Everite Door Co. was to implement a quality control plan and data tracking system. The purpose of this is track all the information about the defective doors so a statistical analysis or other techniques can be used to find the similarities between the defective doors. This is the most important recommendation. For example, even if Everite Door Co. followed all of the short-term recommendations and their doors stopped warping, they would have no way of knowing which factors are contributing to the warping and which factors are stopping the warping without a data tracking system.

With the data tracking system, Everite Door Co. would know exactly what stage the door is at in the manufacturing process, which suppliers/batches the doors components came from, and where the door is going to be installed. Knowing this information would greatly help in eliminating the faulty factors that are contributing to the garage door’s warping.