Overview
The TMP-5 team developed a testing method to effectively gather data from in-house cooler/freezer panels to avoid using outdated industrial data. Team TMP-5 tested the three types of cooler panels: floor, ceiling, and wall panels. The floor panels were tested for compression strength while the ceiling and wall panels were tested for deflection.

Objectives
The TMP-5 team’s testing method effectively gathered data from several tests that were considered most necessary by the team’s sponsor. These tests include deflection tests for the ceiling and wall panels as well as compression and wear tests for the floor panels. Additional tests that assess other aspects of the coolers and freezers (i.e., different supporting structures) were also conducted. The data gathered from each test was later analyzed to find a proper correlation between panel length, thickness, and material type.

Approach
- Gathered customer needs by conducting a site visit and meeting with project sponsor.
- Generated concepts after this meeting and chose testing method using concept selection matrix.
- Developed testing procedures for deflection, compressive strength, and wear resistance tests.
- Conducted theoretical analysis and finite element analysis of panel tests.
- Visited Tafco facility to conduct all of the predetermined tests.
- Analyzed data and found correlations between panel types.
- Gave sponsor final results and data correlations.

Outcomes
- Developed testing method for sponsor to conduct future testing.
- Generated quantitative results for deflection and compressive strength of panels.
- Gave the sponsor a better understanding of their product.