

## **Abstract**

This report shows the design, manufacturing, and testing process for the product development of a wine club shipment package for Niner Wine Estates. Niner has two different shipment sizes, 4 bottles and 6 bottles, and wishes to improve their current package by giving it a more “high-class” feel. After the new package was designed and prototyped, it went through standardized quality testing to be cleared for commercial use. This testing is intended to simulate the distribution cycle the package will experience and subject it to potential hazards such as being dropped and vehicle vibration during transportation.

After the package passed simulation testing, it was then tested for assembly line capabilities due to the large quantity of shipments Niner must send annually. It was found that the 4-bottle package took a standard time of 41.52 seconds to assemble, and the 6-bottle package 48.46 seconds. Taking into account the respective demands of 4-bottle and 6-bottle shipments, this new package took about 76 hours annually to assemble and pack, which would cost Niner approximately \$330 in additional labor fees. The new design also requires an additional 520 cubic feet of space for storage, but Niner’s current warehousing facility has space available to accommodate for the 30% increase in spatial requirement.

While this new package design requires more time and more material to produce, the benefits of the package are intangible and are up to Niner’s discretion. Niner Wine Estates expressed their satisfaction with the final product and is willing to accept the increase in costs in order to improve their brand identity through their wine club shipments.