

SUSTAINABILITY & COST SAVING

Bottle Lightweighting

CLIENT NEEDS

A wine company was looking for a cost savings initiative with glass bottles. Breakage was their number 1 concern

Opportunity to lightweight large volume formats that would in turn reduce transportation costs and overall material costs

CHALLENGES



Fill heights and internal capacity needed to be verified to ensure there was not a loss of product by overfilling and regulations were maintained by not underfilling. Internal capacity changed due to reduced thickness of walls



There is a significant amount of vertical pressure applied to bottles during the filling, capping/corking machine centers as well as shock to the bottles during de-palletization and case packing



Infeed and discharge screws needed to be changed to handle the lightweight glass with more care and separation when entering into each machine center



Bottle tipping was important as the weight of the glass was distributed differently when forming the bottle



Case/pallet stacking (double stacking) was important to ensure no breakage occurred during warehousing / storage as well as withstand clamp truck force when pallet was moved from one location to another

STEPS TAKEN BY ADEPT

Adept wrote a plan that included material testing prior to line testing to verify the lab testing would pass prior to utilizing time on the line – this included vertical pressure, capacity, dimensional analysis, impact testing, leak testing, pressure test, clamp testing, COF, drop testing, stack testing

The equipment test was split into 2 phases: static and dynamic testing

Static testing was performed by running the bottle through the line without machine centers actively functioning. Ensuring heights were correct with fillers, capsulers, corkers/cappers, diameter was correct for the labelers

Dynamic testing involved water testing with a large volume of bottles to see several hours of run time at low, medium, and high speed through all machine centers

Daily choreography submitted by Adept of what was being tested/observed, number of samples, speeds, change overs



RESULTS

The project was moved forward with lightweight bottles