



BELVAC Container Engineering Services and the Pilot Line

Shaped and Standard
Cans or Bottles



PROVEN TECHNOLOGY *Sustainable Solutions* | FOR OVER 60 Years

CONTAINER ENGINEERING SERVICES

SIX PHASED DESIGN PROCESS

Belvac's Container Engineering Services (CES) exemplifies a structured and comprehensive approach to beverage can design, ensuring exceptional performance and cost-efficiency. This six-phased process is meticulously crafted to collaborate with clients in developing new beverage cans that boast superior weight efficiency and dome performance.

By leveraging advanced engineering techniques, Belvac offers the capability to refine existing can designs, optimizing coil thickness and material utilization for enhanced sustainability and cost savings.

Furthermore, Belvac's design expertise extends to the creation of a diverse range of innovative products, including uniquely shaped containers, straight wall designs, and specialized bottles or cans. This versatility and commitment to excellence position Belvac as a premier partner in the industry, delivering tailored solutions that meet the evolving needs of customers while maintaining a competitive edge.





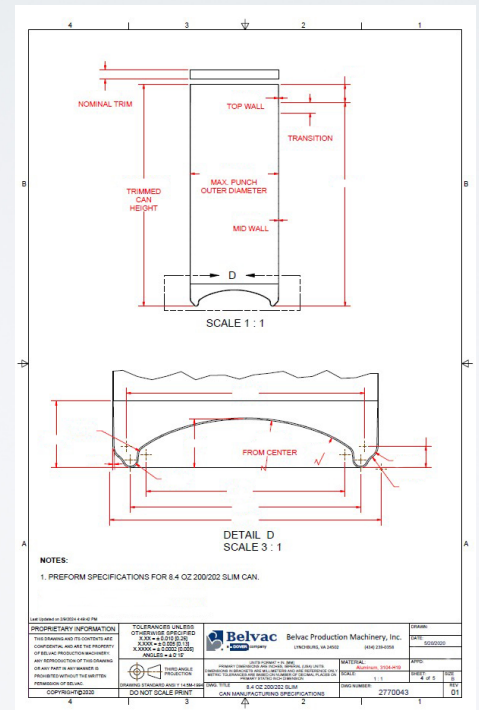
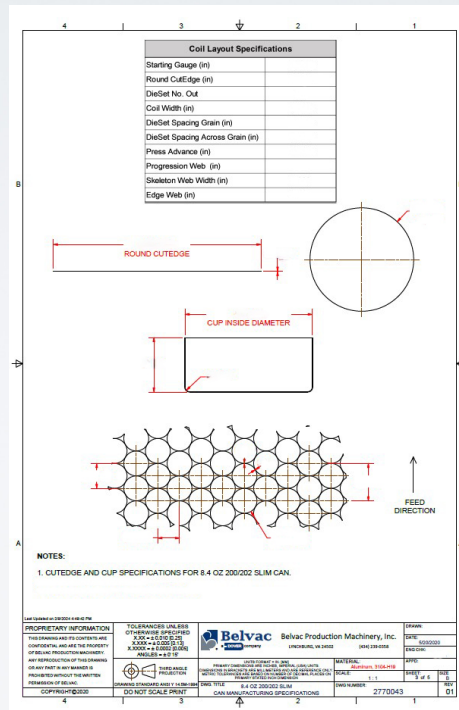
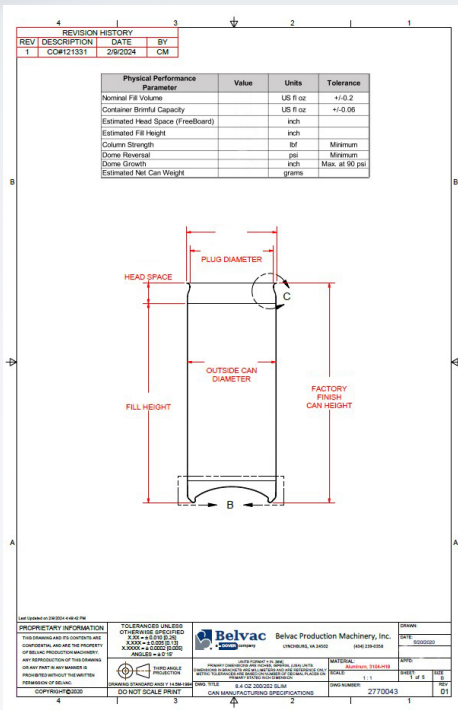
Using Belvac's expert **container design** services, a customer **reduced** their **annual metal weight** by over **7%**, **saving millions** per year.



COMPLETE CONTAINER DESIGN

Belvac provides complete container drawings and specifications that cater to the diverse needs of the metal packaging industry. Belvac's expertise extends to every aspect of container design, ensuring that each element is meticulously crafted to meet the highest standards of precision and durability. Belvac's team of seasoned professionals leverages advanced metal forming technology to provide complete drawing and tooling design packages. Belvac's proficiency in container and tooling design for Cupper, Bodymaker, and Necker processes is unparalleled.

- Cupper Tooling
- Bodymaker Tooling
- Necker Tooling



CONTAINER DESIGN PROCESS

Beginning with a clear goal, Belvac begins with providing an overview of our services and the Container Engineering Process while simultaneously determining your specific requirements and framework conditions.

PROJECT REVIEW PHASE ONE



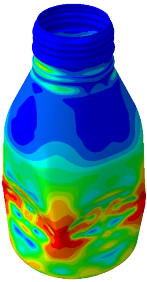
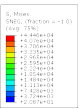
Images and modeling can provide a valuable tool for making technical comparisons or creating a common understanding of customer's requirements. In line with the project specifications, Belvac develops a wide range of options to help you visual and understand your packaging concept.

VISUALIZATION PHASE THREE



PHASE TWO CONCEPT DESIGN

With a clear path ahead, Belvac's Container Engineering team begins developing precise concepts unique to the scope of your project. Whether you're looking to down gauge or create an entirely new individual packaging concept, our expert team is here to help.



Utilizing Belvac's on-site can making Pilot Line, our expert team can manufacture test samples to perform further container testing. Belvac also tests the container's Tooling designs in real production conditions.

PROTOTYPE SAMPLING PHASE FIVE



PHASE FOUR FEA SIMULATION

Utilizing an expert team of Engineers, Belvac performs a Finite Element Analysis (FEA) which tests the package under various conditions ensuring its viability and structural integrity.



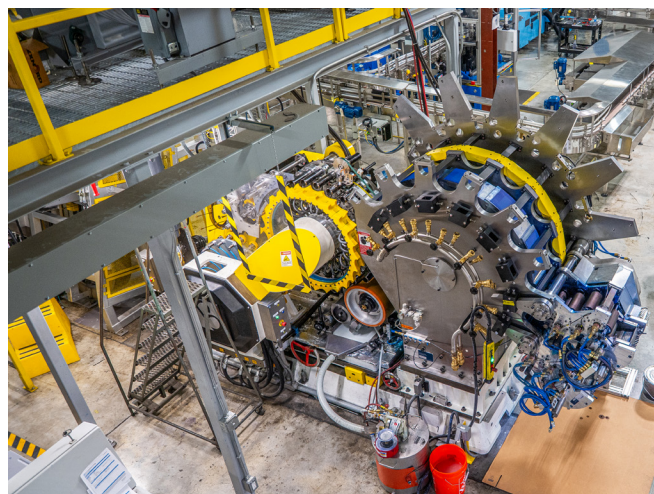
PHASE SIX QUALITY ANALYSIS TESTING

To ensure quality of the container designs, Belvac carries out defined testing procedures in our QA lab which is adjacent to our on-site Pilot Line. The progress and results of the test are documented with precision and transparency.



PILOT LINE

Belvac's Pilot Line is an unparalleled asset that enables the creation and testing of new container designs. This state-of-the-art facility allows for the exploration and development of innovative packaging solutions, ensuring that Belvac remains at the forefront of industry advancements. Available services on the Pilot Line are extensive and designed to maintain and elevate customer's operational efficiency. These services include label validation, down gauging, light weighting, and more.





SCALE WITH CONFIDENCE

- Small-Scale Production Mimicking Real-World Manufacturing Conditions
- Enables Businesses to Identify Potential Issues Before Committing to a Full-Scale Rollout
- Mitigates Risks with Large-Scale Production Investments
- Ensures While Scaling Up, Processes are Efficient and Effective as Possible
- Supports the Design and Testing of New Containers and Tooling
- Production of Market-Ready Samples for Conducting Thorough Consumer Research
- Engineered to Support Extensive Research and Development Testing
- Experiment with Different Coatings, Inks, and Light Weighting Materials

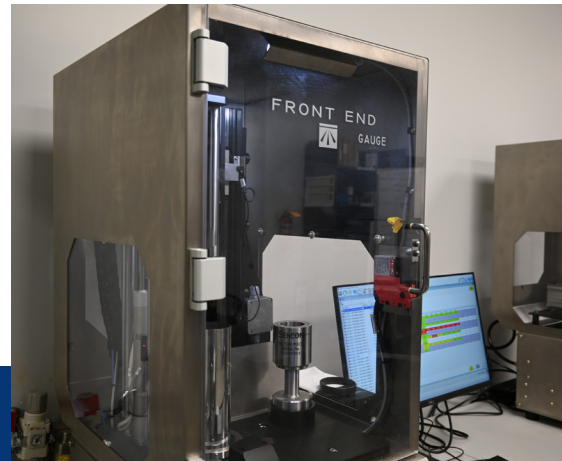
By facilitating such comprehensive testing, the Pilot Line ensures that Belvac's customers can optimize every aspect of their product, from durability and aesthetics to cost-effectiveness and sustainability.

PILOT LINE QUALITY ANALYSIS LAB



BUCKLE GAUGE

Measures pressure required to reverse the dome on beverage cans, and it also measures the can height growth when the cans are exposed to sustained internal pressure.



FRONT END GAUGE

The Front End Gauge measures can height, mid and top side wall thickness, and dome depth on un-necked, trimmed beverage cans.



AXIAL LOAD GAUGE

Measures the maximum force which can be applied in the axial plane before deformation or can collapsing.



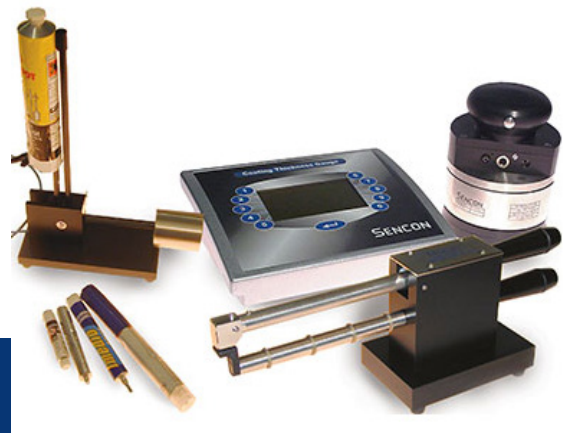
BACK END GAUGE

Non-contact measurement of key dimensions on finished beverage cans, including internal base reforming parameters.



METAL EXPOSURE RATER

The Rater checks lacquer/coatings integrity on cans and ends using the industry standard conductivity test. A small, safe voltage is applied between an electrolyte (conductive fluid) inside the can and the body of the can.



COATING THICKNESS GAUGE

Rapid and accurate measurement of lacquer film thickness (film weight) of internal and external coatings on beverage and food cans or flat sheets.



PILOT LINE SERVICES

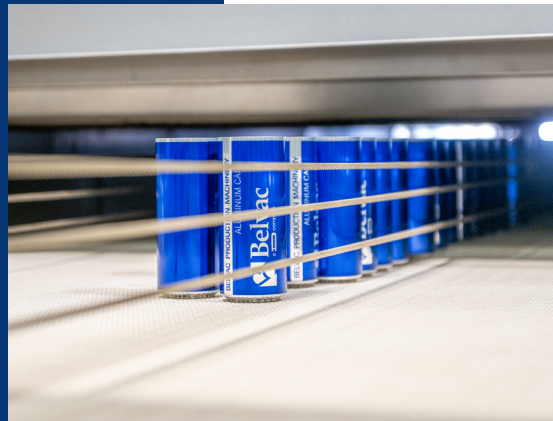
COATINGS & INKS TESTING

- Varnish Coating
- Inside Spray Coating
- Inks Coating
- Washer Chemicals
- Bottom Rim Coating
- Label Validation



COIL & CONTAINER TESTING

- Coil Specifications
- Cup Lubrication
- Midwall and Topwall Thicknesses
- Dome Profile
- Tooling Profile and Material
- Annealing
- Temperature Profiles



COMPREHENSIVE PACKAGES

- Container Engineering and Development
- Low Volume Test Samples
- Down Gauging Packages
- Lab Services
- Onsite Training
- General Research and Development





Ready to Learn More About Belvac's Container Engineering Services and Pilot Line?

Contact us today at sales@belvac.com to
discover how Belvac can help
enhance your operations.

