



Brewers Association Quality and Safety Plan for Mobile Canning



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Prepared by the Brewers Association
Quality Technical Subcommittee

INTRODUCTION

Mobile canning helps many brewers put their beer in to cans without the significant investment that comes with purchasing, installing, and operating a packaging line. While this strategy can save capital expense and staff resources, it should be carefully managed since it does not come without risks to employee safety and beer quality. By taking the time to prepare and communicate with a mobile canning company, breweries can exert greater control over these potential risks. Planning activities may be as simple as asking the right questions or may require more involved strategies to ensure that beer is in the best condition for packaging. If these action steps are taken ahead of time, the mobile canning company will also be better equipped to adapt their operation to a brewery's specific needs. This white paper will outline common safety and quality considerations when working with a mobile canning company. Finally, a planning checklist is intended to provide a blueprint for operating a successful mobile packaging run.

Topics to be covered include:

- Creating a Safe Packaging Environment
- Managing Quality
- Mobile Canning Checklist

CREATING A SAFE PACKAGING ENVIRONMENT

Start the planning process by having a conversation about safety with your staff and the mobile canning company. Several safety considerations are indicated below as important topics to discuss. Setting expectations and clarifying who is responsible for different areas (for instance, providing Standard Operating Procedures (SOPs) for equipment) will help protect your workers, ensure the safety of employees of the mobile canning company, and prevent damage to equipment. Steps can also be taken to proactively ensure a safe packaging environment.

Safety Considerations

- Does the mobile canning company provide SOPs or safety documents?
- Does the mobile canning company provide additional pressure gauges to validate brewery equipment pressures?
- What chemicals will the mobile canning company bring on site?
- Does the mobile canning company have hazard communication information / safety data sheets (SDS) for chemicals brought on site?
- What Personal Protective Equipment (PPE) will mobile canners use while on site and does it match up with brewery standards?
- What are CO₂ purge safety implications to the brewery and plans to ventilate properly?

1. Communicate and address safety hazards with brewery staff and the mobile canning company.

- a. Train staff to safely operate equipment and alert all staff to potential hazards. Make sure all employees (not just packaging staff) are aware of where and when the mobile canning company will be there and any hazards they might encounter if they end up near it (need for hearing protection, new trip hazards, mechanical hazards, etc). Conduct your own internal safety training or utilize free training modules provided by the Brewers Association. [Free Online Brewery Safety Training](#)
- b. Supply staff with appropriate PPE. Make sure staff is aware of and protected from hazards such as sound exposure to machine operation (sometimes higher than 90 db), and exposure to pressurized gases and cleaning chemicals. [PPE Best Management Practices](#)

- c. Make sure the mobile canning company is aware of your brewery's hazards and safety equipment. Per OSHA guidelines, you are required to let Outside Contractors know what hazards are present in your brewery and what safety measures are in place. This includes Hazard Communication, Emergency Actions Plans and any other hazards specific to your brewery. [Hazard Assessment Principles](#)
- d. Carefully consider ergonomics. The act of casing, palletizing, and depalletizing along with the speed of canning could lead to repeated injury and product failure. Downtime due to worker injury, equipment damage, or recalled product will result in unplanned setbacks.
- e. Consult safety data sheets (SDS) and have a plan for safe handling of chemicals. Discuss any emergency action plans and make sure eyewash stations or showers are available near equipment. Standard operating procedures (SOPs) should be created for routine cleaning and operating tasks to protect beer quality and worker health.



Figure 1: Carefully consider ergonomics of the packaging environment to avoid employee injury.
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2. **Ensure that all equipment will be operated safely and that electrical and pressure requirements are compatible with your facility.**
 - a. Questions to answer beforehand include:
 - i. What are the electrical power requirements?
 - ii. What is the type and size of beer hose and water connections?
 - iii. Along with line sizes, what are water and CO₂ flow capacity and pressure requirements?
 - iv. What are the CO₂ connections?
 - v. Will there be CO₂, Water or Steam pressure drops that negatively affect other processes as this new process works in parallel? How will this be dealt with?
 - b. Do not exceed the pressure rating of tanks. Vessels should have pressure relief valves and be ASME rated if pressures exceed normal operating limits (typically 14.7 psi). While the mobile canning company may request specific pressures for canning, it is the brewer's responsibility to ensure equipment is operated safely and within legal limits.
 - c. Make sure CO₂ monitoring devices are in place and ensure tight connections.
3. **Consider how the mobile canning company will get their equipment into the brewery.** Make arrangements for receiving equipment and clear a safe path to the entrance site. Be sure to size the door frame height and width, and the length that needs to clear a doorway without being turned.
 - a. How will the equipment be delivered to the brewery?
 - b. Will the brewery door height and width accommodate the mobile canning line?
 - c. Will the equipment length clear the doorway without needing to be turned?
 - d. Are brewery staff expected to assist with loading and unloading?

MANAGING QUALITY

1. **Determine what quality tests will be performed by the mobile canning company and your brewery.**
 - a. Who is responsible for quality testing of packages?
 - b. What tests will be performed during packaging?
 - c. If the mobile canning company is responsible, can previous examples of DO checks be provided?
2. **Clean and sanitize the whole system from tank to can.** Pay close attention to chemical concentration and times to ensure effective cleaning.
 - a. Who is responsible for cleaning and sanitizing the mobile canning line?
 - b. Who will provide cleaning and sanitizing chemicals?
 - c. What parts of the mobile canning line are cleaned or sanitized?
 - d. How will CIP chemicals be collected or drained and how does it affect wastewater?
3. **Consider package storage conditions and shelf life.** Make sure your brewery has sufficient room for cold and warm storage of finished, palletized beer, and if not, that an alternative is in place.
 - a. Make sure packages include date and lot codes for traceability. [Date Lot Coding Requirements](#)
 - b. Keep a beer library: Create and manage a can archive in your brewery to be able to follow up on concerns from customers and quality issues. For example, a simple CO₂ measurement at scheduled intervals using a Zahm and Nagel tester can alert you to refermentation issues in package. [Better Beer Shelf Life](#)

4. Set and manage specifications for beer and packaging conditions.

- a. Ensure tanks have accurate temperature and pressure gauges. Failing to do so may result in failure to hit quality targets and exposure to hazards associated with operating equipment at unsafe pressures.
- b. Store beer at appropriate temperature for packaging. Many mobile fillers do not utilize counter pressure, so it is important to optimize conditions that keep CO₂ in beer. Depending on the carbonation target, beer temperature in tank needs to be modulated to produce high quality tight fobs; sometimes this is just a matter of a few degrees (°F).
- c. Consult the mobile canning company on the recommended tank pressure. If not ASME rated, your equipment may only allow up to 14.7 psi. Work with your mobile canning company to agree on a pressure setting that does not exceed the maximum pressure rating of the tank. At the time of packaging, communicate the carbonation level of the tank to be packaged to help guide mobile canning company operations.
- d. Limit dissolved oxygen (DO) in package beer to less than 50 ppb. Remember that DO is not a static value, and while most mobile canning companies will aim for less than 100 ppb in package, this is in addition to oxidation that has already occurred prior to packaging.

5. Outline and perform beer and package quality analysis.

- a. Dissolved oxygen: Discuss and set expectations on whether the brewery or the mobile canning company will conduct DO checks on tank and packages, and at what frequency. Total package oxygen (TPO) should be tested at the start of every run.
- b. Seam checks: Specify clear rules and expectations from the mobile canning company if seam checks are performed (Ex. Run a tear down at the start of every packaging run). Dunking cans in hot water is not a safe or reliable substitute for a proper seam check.
- c. Can weights: Get clarification on who is responsible for weighing cans and setting specifications. Make sure the brewery has a scale and knows what their cans should weigh when adequately filled. Keep records of can weights for state or federal regulatory compliance (see sidebar).
- d. Micro: Fill and seam heads should be swabbed and tested on an ATP luminometer to assess the effectiveness of cleaning; if feasible, fill heads should also be tested for beer spoilage organisms. Ideally, a small number of cans should be tested for beer spoilage organisms at the beginning, middle, and end of the run.

Can Weights and Regulatory Compliance. The Tax and Trade Bureau (TTB) regulates excise taxation of beer produced at domestic breweries. Breweries are required to measure and keep records for taxpaid beer ([27 C.F.R. §§ 25.156](#) and [25.158](#)). In addition to the TTB, the Federal Trade Commission (FTC) administers the federal Fair Packaging and Labeling Act (FPLA) ([15 U.S.C. §§ 1451-61](#)). In most cases, compliance with TTB regulations should also meet FPLA requirements.

- TTB regulations on net contents and tolerances when packaging beer at a domestic brewery ([27 C.F.R. 25.142\(d\)](#)).
- TTB rule on short-fill bottles of beer at domestic breweries ([27 C.F.R. § 25.142\(f\)](#)).
- TTB labeling net content regulation for all (domestic and imported) malt beverages ([27 C.F.R. § 7.27](#)).
- The TTB provides an overview of [Compliance and Tax Issues Found During Brewing Audits](#)

States have the authority to adopt their own standards for labeling fill of products and may also have their own oversight on “standards of fill” for beer or container size prohibitions, so check with your local or state regulatory agencies.

6. Consider other operational needs such as equipment run time and supplies.

- a. Determine the estimated run time for packaging (ie. filler speed) and the brewery staff needed to schedule a packaging run.
- b. Identify a location for packaging over a clean, well-drained area.
- c. Ensure that hose connection from tank to filler is no greater than 50 ft.
- d. Does the mobile canning company need an air compressor to run and will the brewery need to supply it?
 - a. What air quality does the compressed air system need to be tested to?
 - b. Does the air compressor provide clean, dry air?
- e. Make sure there is adequate CO₂ supply at the brewery. You will need to have enough CO₂ to push beer to the filler and/or purge cans.
- f. If the brewery is ordering cans, make sure they arrive in time for scheduled packaging.
 - i. Make sure labels are ready in time and compatible with the mobile canning company labeler.
 - ii. [Can liners should be compatible with the beer being packaged](#) and also comply with local regulations. [Brewers Association on BPA can liners](#)
 - iii. Who is supplying and manufacturing the cans and can ends?
 - iv. When do cans need to be ordered by?
 - v. Is the labeler compatible with the brewery's label type?

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MOBILE CANNING CHECKLIST

Print and use this checklist as a planning tool for mobile canning. To fully utilize this checklist, the additional information included in the previous sections of this white paper should be carefully reviewed and used to inform any actions taken.

Planning Steps	Notes and Actions Completed
<i>Provide staff with safety training, protective equipment, and documentation.</i>	
Staff safety training	
Standard Operating Procedures (SOPs)	
Safety Data Sheets (SDS)	
Personal Protective Equipment (PPE)	
<i>Inspect pressure, temperature, and gas monitoring devices at the brewery.</i>	
CO ₂ monitoring devices	
Pressure gauges and relief devices	
Secondary pressure gauges	
Temperature gauges	
Tank pressure requirements (<i>tanks that exceed recommended pressure ratings pose a hazard to workers and customers</i>)	
<i>Order packaging supplies for mobile canning run.</i>	
CO ₂	
Cans and can ends	
Labels	
Other	
<i>Prepare to receive and operate mobile canning equipment.</i>	
Clear a path for delivering mobile canning equipment	
Prepare location for operating mobile canning equipment	
Schedule packaging run (consider staffing needs for delivery and operation)	

Hazard communication with brewery staff	
Hazard communication with mobile canning company	
Hoses and connections	
Cleaning and sanitation procedure	
<i>Set and communicate beer targets in tank to be packaged.</i>	
Temperature	
CO ₂	
DO	
Other	
<i>Perform quality testing during packaging and on finished beer.</i>	
Dissolved Oxygen (DO)	
Total Package Oxygen (TPO)	
Seam checks	
Can weights	
Microbiological stability	
Other	