

Unit of Operations Work Flow: The Foundation of Sanitary Facility Design

Food safety constitutes a severe risk to companies operating in the food and beverage industry. Along with other common business challenges, food safety introduces an added level of susceptibility. Business losses due to damaged reputation, cost of recalls, loss of shelf space, and litigation represent a major threat to profitability.

We most often associate food safety with proper product handling, diligent pathogen testing or sanitation procedures. However, organizations should also recognize facility design as a viable deterrent to risks posed by food safety failures.

The American Meat Institute (AMI) recognized the importance of design in lowering food safety risks when it commissioned a task group to study the issue. The task group developed a list of 11 *Principles of Sanitary Facility Design*. General acceptance of these guidelines across multiple food related industries reflects recognition that facility design plays an important role in food safety.

The Unit of Operations Work Flow (UOWF), a significant pre-design tool, encapsulates the critical elements required for sanitary facility design. By mapping adopted business processes, procedures and policies, details of design can be analyzed in segments. Incremental risk reduction at each segment creates a cumulative reduction in risk as the process proceeds to completion.

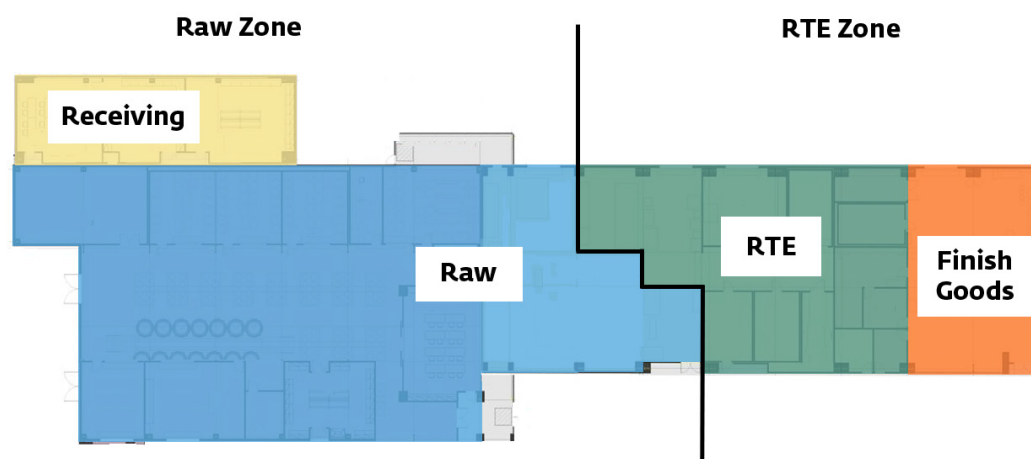
Industry Related Risks

Identifying industry related risks helps to fully understand the benefits of the UOWF for food processors. Primary risks to food and beverage industry companies include:

Regulation. The US Department of Agriculture (USDA) regulatory approach emphasizes identifying points of highest risk, known as the Critical Control Points (CCPs). The USDA's Hazard Analysis and Critical Control Points (HACCP) Plan requirements focus on prevention of adulteration at the CCPs. The UOWF helps to identify CCPs prior to design which prevents flawed design.

The Production Process. Flow of food materials, the number of workers operating the production line, cleaning procedures and many other factors present opportunities for food adulteration. In the event of a food safety failure, minor details in a production process can affect the size of losses during recovery. Due to its incorporation of business priorities alongside policy and process details, the UOWF allows for a thorough analysis with food safety as a focus. Weaknesses can be identified and addressed during the subsequent design phase.

Design. Facility design, as it pertains to food safety, relies heavily on details. When making design decisions, owners want to understand the cost benefits over



the operational lifetime of a facility. Selection of less expensive surface materials reduces cash outlays at the onset. Yet this may result in higher operational costs. The UOWF reveals solutions that achieve an acceptable median between costs and sanitary design principles. The resulting solution justifies initial investment, while reducing overall costs of ownership.

Unit of Operations Work Flow

The potentially deleterious consequences of food safety failures necessitate a concerted focus on prevention. Combined with regulatory, process-related, design and financial risks, a detailed and proven methodology for avoiding food safety failures should be implemented.

The UOWF provides a sound foundation to begin sanitary facility design. By thoroughly vetting processes, policies and business objectives with accepted design principles, risk from food safety issues can be greatly reduced during the planning stages. The ability to include many critical details in small process segments, allows for the development of a comprehensive design.

In addition to a sound design, owners benefit from a clearer understanding of future regulatory responsibilities. Strategic design coupled with value engineering can balance initial investment with long-

term requirements related to HACCP Plans and other operating costs.

Moving Forward

Haskell stands uniquely qualified to assist food and beverage companies with capital investment projects. We invite you to explore solutions we've delivered for numerous clients within the industry.

As part of our commitment to these clients, we employ full-time sanitary facility design experts. Their experience includes working on the task group responsible for developing the *11 Principles of Sanitary Design* commissioned by the American Meat Institute. We've delivered food and beverage facilities for some of the industry's largest corporations. Haskell's history also includes recovery projects for companies seeking to correct issues that led to food safety failures.

Haskell's resources also include a team of manufacturing process experts. Integrated with our design-build capabilities, complete Engineer, Procure and Construct (EPC) capital project solutions can be delivered with certainty of outcome.

We invite you to explore our portfolio of projects at www.haskell.com.

HACCP Process Flow Diagram

Process Category: Raw Product, Ground Product: Fresh Pork Sausage

