



# Empire Candle Increases Storage Utilization and Operational Efficiency and Extends its Stay in Current Facility

## 1 Introduction

Empire Candle is a full service manufacturer of candles, wax melts, and home fragrance accessories. Their core values are quality and tradition, and they have been delivering high quality candles and fragrance innovations for over 60 years. When the company faced storage challenges that threatened their operational efficiencies, they reached out to Alpine Supply Chain Solutions with the goal of extending their stay in their current facility and optimizing storage to leverage existing assets more effectively.

## 2 The Challenge

Empire Candle's primary issue was storage challenges that would shorten the time in which they would be able to stay in their current facility. The company wanted to maximize the space that they had but they were concerned about compromising product integrity. They also needed to make room for growing inventory, and were unsure if they needed to begin immediate expansion.

Empire Candle's stringent requirement of stacking pallets only two high to prevent product damage posed a unique challenge. The goal was to develop a solution that allowed for higher stacking while protecting the delicate nature of the candles.

### 3 The Solution

Alpine's primary objectives included increasing storage density to accommodate growing inventory and identifying pick and reserve rack types, along with optimal quantities. Alpine also focused on maximizing the use of available space without compromising product integrity and optimizing the existing layout to accommodate growth. They also needed to determine how long Empire Candle could stay in its current facility.

The Alpine team adopted a systematic approach to address Empire Candle's challenges. The project began with a detailed storage type analysis to understand the limitations and opportunities within the existing warehouse. The facility design phase focused on proposing innovative solutions, including pushback racking and optimized pallet opening heights, to maximize storage utilization. During the layout phase, Alpine carefully considered aisle directions, staging spaces, specialized equipment, and aisle widths to balance efficiency and safety.

### 4 Implementation

Alpine conducted a comprehensive analysis of Empire Candle's current storage practices and sales forecasts and considered product fragility and stacking limitations (pallets limited to 2 high) as primary challenges. Then the team optimized pallet opening heights to maximize clear height and space utilization and oriented aisle directions strategically for efficient flow. They also identified specialized equipment for layer picking and recommended pick and reserve rack types tailored to Empire Candle's specific needs, dimensions and ABC Pareto Classification. Then, they determined optimal quantities to be slotted for each rack type.

### 5 The Results

The implementation of the storage type analysis and facility design recommendations led to significant improvements for Empire Candle including increased storage density from pushback racking and pallet opening height optimization. Also, the adjusted layout and aisle configurations maximized clear height, providing additional space without compromising safety. Aisle orientation, staging space optimization, and specialized equipment for layer picking improved overall operational efficiency. Finally, the combined efforts resulted in Empire Candle being able to stay in their current warehouse for several more years without the immediate need for expansion.

Throughout the project Alpine justified rack cost through an improvement in both pallet positions (increased by 98%) and pick facings (increased by 59%), and by combining different rack types such as single select, pushback.

### 6 Conclusion

Alpine Supply Chain Solutions successfully addressed Empire Candle's storage challenges through a holistic approach that combined innovative storage solutions, strategic facility design, and meticulous attention to operational details. The implemented changes not only increased storage utilization and operational efficiency but also provided Empire Candle with the flexibility to continue thriving in their existing facility for an extended period. This demonstrates the value of thoughtful planning and strategic implementation in optimizing warehouse space and extending the lifespan of existing assets.