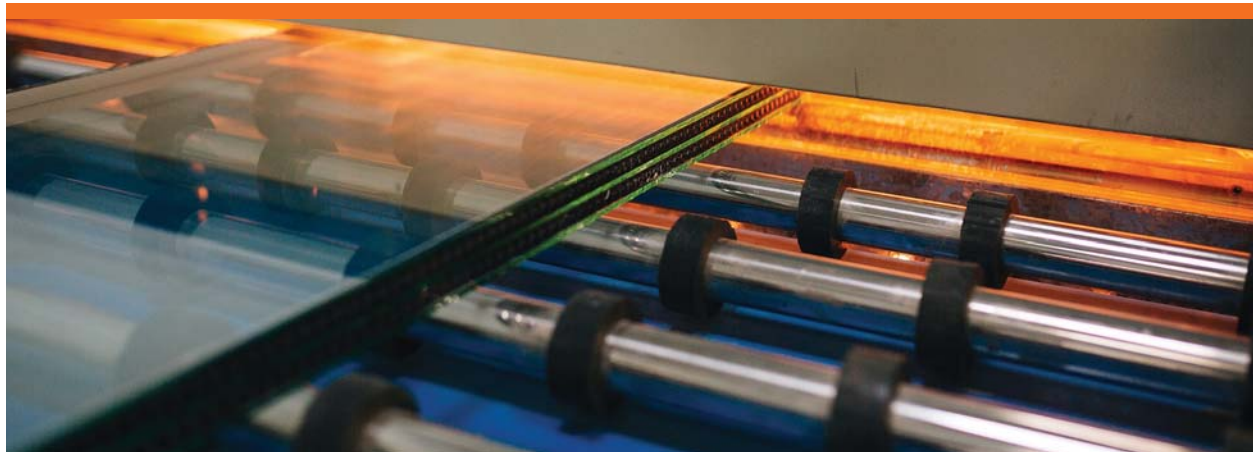




# BatchBan Tempering

Optimization Software for Flat Glass Fabricators



*BatchBan Tempering is a patented tempering software and the industry's first true dynamic layout and production optimization software.*

*Designed to work with any tempering furnace, BatchBan Tempering uses a state-of-the-art layout optimization algorithm that enables users to utilize a much higher percentage of their furnace bed, while keeping in mind such considerations as the importance of roll wave consistency and glass piece positioning due to varying temperature profiles.*

*The dynamic software optimizes only one furnace bed at a time, with a priority on completing racks to maintain a steady flow of racks leaving the tempering process.*

*BatchBan Tempering can enable your company to save money on energy costs while improving the overall manageability of your tempering operation and assuring the highest yield possible for each furnace cycle.*

## Tempering Equipment Independent

*Seamlessly integrates with any tempering furnace, regardless of the manufacturer*

BatchBan Tempering is designed to work with any manufacturer's tempering furnace, new or existing, making the transition to BatchBan Tempering as seamless as possible. There is no need to invest in new equipment. Users have direct access to all the necessary production data needed to achieve optimal efficiency for their tempering process.

## Dynamic Optimization

*Reacts seamlessly to any changes in the order sequence to deliver optimal yields and a constant flow of completed racks*

Unlike batch based optimization software where an entire batch of orders is optimized all at once, BatchBan Tempering optimizes only one furnace load at a time, right before the pieces are to be seamed. This dynamic approach to layout optimization allows for the set of pieces that need tempered to be changed and/or reordered to increase tempering yield and keep pace with the ever-changing mix of orders. The result is increased yield, minimized waste and a constant flow of completed loads.

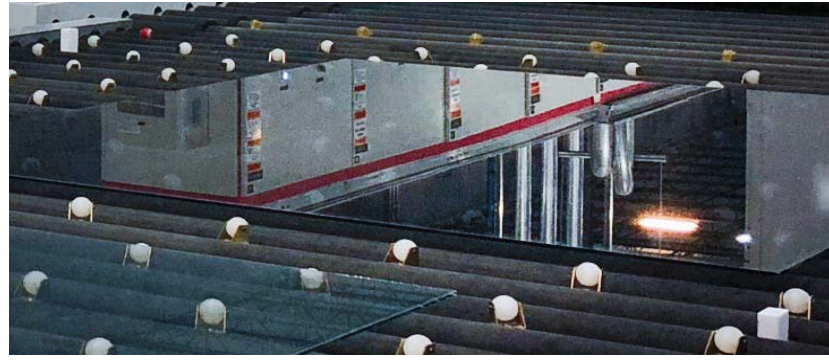
## Layout Optimization

*Patented layout optimization algorithm ensures maximum yield*

The software implements a state-of-the-art layout optimization algorithm that enables our customers to utilize a much higher percentage of their furnace bed, while also keeping in mind such considerations as the importance of roll wave consistency and glass piece positioning due to varying temperature profiles.

**More Features >**





## Instant Remakes

*Reproduces remakes effortlessly and intelligently, saving time and increasing yield*

Glass pieces that have been damaged or destroyed during the tempering process can easily be made available for cutting by simply clicking on the item in the layout. Once the pieces have been recut, they can easily be added back to a tempering schedule at anytime. This means, that there is no more need to manually reschedule the pieces to be recut, saving you time, and increasing the cutting yield.

## Rack Biasing

*Pieces are optimized according to their rack priority, giving precedence to pieces that will facilitate constant rack flow*

In order to ensure that there is a non-stop flow of completed racks leaving the tempering process, the dynamic optimizer biases pieces based on their rack priority. The higher the user defined priority of a piece, the faster it will be tempered. The user no longer has to wait for an entire batch to be completed prior to moving the racks to the next operation. At any given time, there is always a complete rack leaving the furnace, and at the same time we begin producing pieces for another. This feature provides for a much leaner manufacturing process.

## Dynamic Rack Priority

*Rush orders are quickly and seamlessly accommodated without sacrificing yield*

The priority of each rack can be dynamically changed at any time. During production, when a rush order comes in, the new racks are imported and assigned the highest priority. The optimizer will immediately begin producing pieces for the newly imported racks. This will ensure that rush orders are completed in a timely fashion and can increase cutting yields since racks with similar glass types can be grouped closer together.

## Look-Ahead Feature

*Rare pieces are utilized when a projected sheet yield falls below a user-defined level, increasing tempering yield*

In order to achieve the highest yield possible for each furnace bed load, the optimizer uses a feature commonly referred to as a "look-ahead" feature. The number of racks the software is permitted to look ahead is a setting that can be adjusted as needed by the customer. The look-ahead feature allows for pieces that normally, based on their rack priority, would not be selected for optimization to be looked at and selected in order to get a higher yield. If the yield for a particular furnace bed load is below a certain user-defined level, the optimizer will automatically select rare pieces and, by doing so, increase tempering yield.

Once tempered, rare pieces are stored in a holding rack, or rare rack, that is displayed on the HMI screen. The software keeps track of each individual piece and layout, as they go through the tempering process starting at seaming through staging, all the way to the unloading of the furnace.

## Enhanced Security

*Access to sensitive information can be controlled by the implementation of user defined levels*

## Microsoft SQL Database for Greater Data Integrity

*Reliable, redundant data storage and retrieval for higher productivity*

Microsoft SQL provides reliable and redundant data storage and retrieval which allows for less downtime and higher productivity. If a customer doesn't already have a version of Microsoft SQL, a free version of Microsoft SQL Server Express is included with the installation.