



FORMING OPERATIONS OF OPAL GLASS

**CASE STUDY FORMING OPERATIONS
OF OPAL GLASS**

CLIENT - HOPEWELL TABLEWARE LTD.



Forming Operations of Opal Glass training Delivered to Client HopeWell Tableware Ltd.

Client: HopeWell Tableware Ltd.

Industry: Manufacturing industry

Hopewell tableware Pvt. Ltd. is one of the leading manufacturers and suppliers of Opal Melamine and Bone China Tableware in India. Situated in Gujarat, the company employs state of art production technologies through a dedicated team of professionals. The company provides an impeccable client profile along with a very strong distribution network which has been established over the year through the organizations' hard work and the establishment of faith in its clientele. In the process, the company has been able to establish itself as a reputed name in the corporate, retail and hospitality world.

The company relies on their quality control systems at the entry and exit levels in order to ensure that the products they develop are able to match up to the international standards of design and quality development. They deliver innovative designs in innovative and eco-friendly manner which are recyclable products through their manufacturing facility and have been able to carve a niche for them in the Opal Industry of India.



Technology: Forming Operations for Opal Glasses

Domain: Manufacturing

Opal glass has always been one of the most important materials for building fine tableware and cutlery. Opal glass is created by using opacifiers which are added to the melt. Most of the opal glass have opaque white glass appearance but can also be made pink, blue, yellow, brown and black. The formation of opal glasses is not a straightforward operation and several technologies have been patented to efficiently manufacture opal glasses with a minimum loss and high quality.

A number of processes can be used for this manufacturing where the focus is on size distribution and density of the particles of glass which controls the overall effect of Opalization. The opalization effects can range from mild opalization to completely opaque white. The added particles known as opacifiers are dispersed in the melt which can be insoluble or dissolve in the melt and finally precipitate as crystals when they are cooled.

Challenges Faced By the client:

Hopewell Tableware Ltd. With Larah Opal Borosil is one of the leading manufacturers of Opalware in India and has been providing client satisfaction through high-quality products. The company was aiming to refine their processes in a better manner and provide a better predictive forecasting and an output at the dispatch end, in order to meet the growing customer's demands and quality requirements. The following pointers had to be taken into consideration from the client's perspective:



1. Breakage of products in the process/supply chain which makes the production forecast haywire and decreases the output quantity at the dispatch end.
2. Certain articles had a high breakage rate while certain had low and there was no data which could identify the pattern.
3. No understanding of how the different process chains of forming, annealing, and tempering led to the kind of product that would break or not break.
4. No Understanding of the thermal homogeneity and its effect on the integrity of the opal glassware.
5. No understanding of the shape of specific parts of the glassware and the effects they had on the integrity of the product.
6. The correct choice of alloys and mold materials which would lead to strong and sturdy products.
7. The parameters of composition which would affect the production and the variation in the components to lead to the correct product.



8. Understanding the formation of gob and its effects on the end results of the products.

9. Usage of powdered china clay as an absorbent at the plant machine area in order to remove grease and oil which lead to safety hazards.

The challenge was to refine the procedures to the extent that the company is able to reach a very high level of productivity with very high quality and very low breakage ratio. The main focus was on collecting data and improving the assessment of what process and what parameters lead to what quality of the product.

Failing to overcome the challenges and creating a better and more robust manufacturing line which can deliver quicker and larger quantities of products, the companies faced a risk of slowing down on their profits and lose out on their client base.

In order to avoid this, Aurelius Corporate Solutions was brought in the picture to provide an insourcing solution which can essentially up skill their own employees who can thus provide the necessary growth and development to the organization.



Why Aurelius

Aurelius Corporate Solutions was brought in the picture when the need to develop a better manufacturing line was growing tremendously in the organization. Aurelius is a leading provider of insourcing solutions for the clients who are looking to develop in-house capabilities which can lead to long-term benefits and growth while developing quality products and long-lasting intellectual property.

In this particular case, Aurelius conducted extensive research through its dedicated team of professionals to analyze the issues that the client Hopewell Tableware Ltd. was facing and further create an insourcing solution which can deal with all the issues and bring the workforce of the client to a very high skill set level.

The insourcing solution was developed through a dedicated team who first performed a data-driven analysis of the procedures to be targeted in the solution and further, search for the best subject matter expert having high expertise and immense experience in the same. The search for the subject matter expert was performed worldwide and several screenings were done to ensure that the exact requirements of the client will be perfectly met.

The client was then provided with complete on-shore and off-shore support through the solution providence period to ensure a hassle-free and smooth solution delivery.

The following key areas were targeted in the solution:

1. Essentials of Team Building taught.
2. Root causes analysis techniques used.



3. Data collection techniques taught.
4. Ability to connect the business processes.
5. Identifying process gaps.
6. Storage problems solutions
7. Costs of reworking minimization

Moreover, Aurelius was able to provide end to end solutions to several of their verticals involved in the manufacturing of the opal glassware including the following:

1. Change in glass composition involving Zircon leading to decreased structural integrity.
2. Keeping the ring of the press machine in good condition to ensure there are no cracks in the product.
3. Correcting Annealing process and barium content of the product to ensure correct crystal formation.
4. Ensuring correct homogeneity in the final product by correct heating procedures.
5. Using bead blasting to increase the surface areas of the shear to help to cool during the operations.

The participants by the end of insourcing solution project were able to understand that each glass composition is unique in its own manner and has differing softening point annealing and strain points. Each Glass composition has



to be designed to the glass forming machine it is supposed to be served with. The half-baked approach along with disregard to data collection interpretation has resulted in a chaotic firefighting approach of running the plant. This was thus corrected and best practices of the industry were brought into the system in all the technical areas to ensure that the client is able to perform the best operations possible as per their potential.

Solutions and Post Solutions Benefits

Aurelius was able to provide a complete overhaul of the entire process, and in this manner help the client understand many reasons and incidents which led to the breakages and decrease in the productivity and quantity of production of the opal glasses. The solution was delivered in-house to the participants through extensive practical training which would make the workforce hands-on with the new and better procedures. The subject matter expert was able to clear all doubts and provide immense technical and practical know-how to make sure that the organization would need no further 3rd party support for the development and delivery of their products.

The various processes such as correcting compositional parameters, gob formation, and its effect, mold formation, polishing of materials machines was corrected to decrease the number of breakages and further increase the available number of articles for sale.

Cost reduction was also taken into consideration by removing barium carbonate as a raw material from the composition along with the decrement in the mold cost by using allowed cast iron molds instead of the molds currently being used by the organization.



Under the guidance of the insourcing solution by Aurelius Corporate Solutions, the client was able to tackle the technical challenges and solve all the pain areas which led to the overall increase in the productivity of opal glasses from 70% to 90%. This further led to the increase in revenue profit of the company by 35% to 40% approx.

Insourcing Project Conclusion (Summary)

Post Insourcing Project, the client is now capable of handling all the challenges and gaps identified which were faced in the plant due to which they were incurring huge production losses. The production loss was primarily due to breakage and wastage of material which was the main challenge that the client was facing. The team at the plant is now updated about procedures which has reduced wastage and enhanced production to a considerable extent.

After the Insourcing session the client was able to obtain the ROI right from day one since the production rose from 70% to more than 90%. This has resulted in increased profit margins and reduced costs due to the overall increase in efficiency leading to higher production and less wastage. Thus the client had an added advantage in terms of increasing the global production demands at the same cost after the completion of this Insourcing project. This Insourcing project helped the client to increase the revenue of the company by 35% to 40% approx. and save any additional overhead expenses that now can be utilized for the capacity expansion.



The reduced cost would not only help the expansion in the plant to meet the increase in product demand but also fight competition at local and global levels. Insourcing also empowered their employees through the guidance provided by our SME assisting them to maintain their efficiency in production and educate their fellow employees in case of any queries/challenges faced.

Aurelius