**Company:** Gypsum manufacturing industry – Brazil

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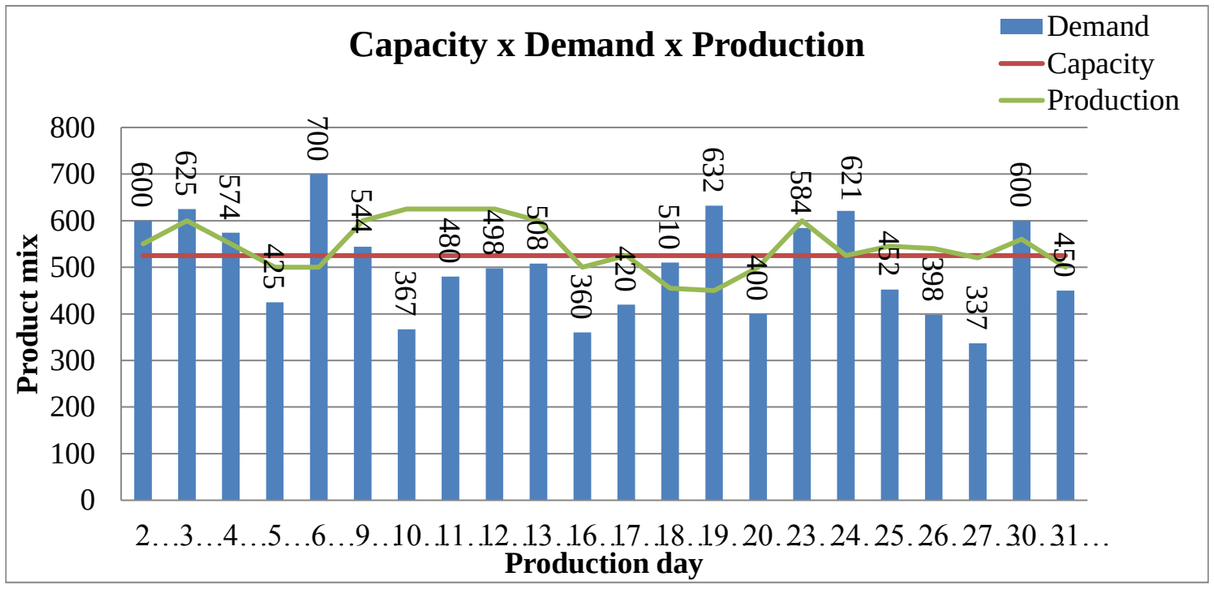
**Title:** Leveling of production through the application of the Heijunka method

**Problem / Root Causes:** It was noted the need to level the volume of items produced in the process over a month. It is expected to convert customer demand instability into a level and predictable manufacturing process and thereby prevent excess batches, product types, and fluctuations in the mix volume of items offered by the company.

**Current Situation Analysis:** Currently, it employs five types of products: alpha type plaster, beta type plaster, plasterboard (standart profile), cement sheets and drywall coatings. Each item has different demands and, consequently, requires production scheduling to be adjusted periodically to match the manufacturing resources to the sales / order level of each product. Graph 1 shows the relationship between demand versus production and capacity per product in a period of normal sales and production conditions.




**Tools Used for Solution:** To achieve the leveling of the production of the product mix marketed by the company, the Lean Heijunka tool was applied, with the aim of pulling the production to match the demand. To support this methodology, we also used:

- Pareto diagram to prioritize the most frequent and higher volume items;
- Takt time updated to establish the time in which a part or product, based on the rhythm of sales, must be produced to meet customer demand;
- SMED so that setup times can be kept low;
- Plan of action to list the planning and monitoring of activities that will contribute to the Heijunka to be effective.

**Action Plan:** The main actions adopted were described in the table below.

| What | Why | Where | Who | When | How |
|---|---|---|---|---|---|
| Studies on takt time | Determine time needed to produce according to demand | Production | Production Management | 30 days | Calculation between the volume of customer demand per shift for the available working time per shift, subtracting the times of losses, interruptions, setups. |
| Elaborate Pareto diagram | Check items with higher volume demanded | Production | Production Management | 10 days | Identify periodic registration by product based on volume |
| Conduct SMED training | Reduce tool changeover time | Production | Production Management | 15 days | Through an educational campaign |

**Results and Conclusions:** With the adoption of timely actions along the production line and in production scheduling, it was possible to notice, after 45 days of change in the internal culture of the manufacturing, 82% of the actual production due to the attendance of demand. This result represents a 47% improvement in customer service, that is, production started to have more balance in the use of resources, a regular demand in previous processes, it was still observed the elimination of waste and favoring the standardization of processes in general. In order to guarantee a better result in the leveling of production, other actions will be adopted in the next six months and with this it is expected to level 100% of production.