For nearly forty years Boride Engineered Abrasives, located in Traverse City, has developed and manufactured abrasive products for industrial and consumer applications. BEA products include mold polishing supplies and polishing equipment.

In an effort to move forward with their motto, “Everything is accomplished with a process”, BEA began their lean manufacturing journey. They contacted the MMTC Northwest regional office for assistance. BEA wanted to reduce lead-times, increase on-time delivery and reduce Work-in-Progress inventory in its facility. Applying lean principles to production, order handling, development projects, elimination of waste, improvements in customer service, quality, productivity, safety, BEA achieved great success.

MMTC Northwest partnered with the Northern Michigan College (NMC) Training and Research staff to conduct a needs analysis based on the Human Performance Technology model. Once the analysis was complete and summarized, MMTC and NMC recommended appropriate services to address the identified gaps in performance.

Training was provided in the following areas by NMC staff:
- Lean Manufacturing Overview with simulation
- Value Stream Mapping
- Cellular Flow
- 5S – Workplace Organization
- Setup Reduction

NMC Training and Research staff facilitated project teams in order to:
- create current and future state maps of complete production flow
- identify first horizon Kaizen activities in the Mark and Pack process
- apply cellular flow in Mark and Pack process
- apply 5S to press area
- conduct Set-up Reduction in Hydro-met press area

The lead time to manufacture a mold and die polishing stone was significantly reduced. BEA customers are told every order received before 3PM will be shipped the next day complete. Backorders on mold and die polishing stone orders went from the 40-50% range on a monthly basis to the 5-10% range. Floor space was increased over 1000 sq feet which was used initially for manufacturing a new product line.

The 5S application has been dramatic. BEA’s facility is cleaner, brighter and more organized. Walls have been painted. Unused materials and equipment have been removed and tagged. Tools have their proper places and are being kept there. Machines in the wheel area were all painted, repaired and their hydraulic leaks fixed.

**Impacts Realized**

- Manufacturing lead time was reduced from 2-4 weeks to ship to 5 business days from receipt of order
- Backorders on mold and die polishing stone orders went from the 40-50% range on a monthly basis to the 5-10%
- Product line sales grew 44%
- Manufacturing output in core operations increased 70% since the year 2000