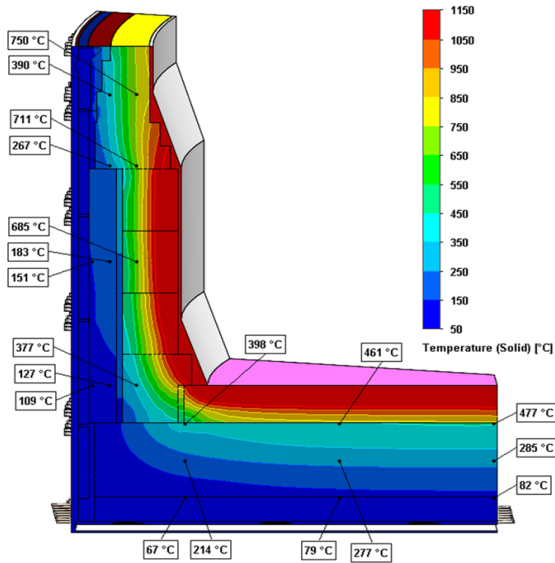


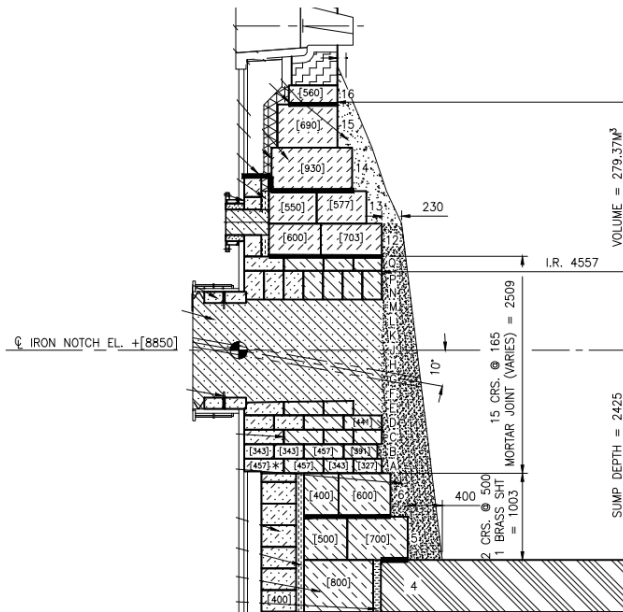
BLAST FURNACE HEARTH AND TAPHOLE System Design

Allied Mineral Technical Service, LLC. (AMTS) hearth designs are supported by many years of experience and consider the many design weaknesses observed in blast furnace hearths in the last half-century of ironmaking.

AMTS works closely with customers to design a hearth suited to its blast furnace operation to meet business production and campaign duration targets.



Furnace A - Hearth Modelling



Furnace B – Engineered taphole with a castable core and protective monument.

AMTS Benefits:

- Value added technical services
- Innovative design and engineering systems
- Provide a complete or partial package including refractory engineering, material cost estimate, and cost supervision.
- Experienced personnel to assist during a hearth reline

AMTS Capabilities:

- Modelling of several hearth designs to meet target productions
- Engineering of a selected design
- Preparation of material quality specifications
- Outlining of instrumentation requirements
- Preparation of installation procedures
- QA/QC during installation
- Provide detailed records of activities during execution of the job
- System monitoring
- Refractory selection

Research & Technology:

In addition to decades of experience in the industry, AMTS is supported by Allied Mineral Products' Research and Technology experts to provide customized solutions for system designs and refractory issues.

Services include:

- Application specific product development and improvement
- Extensive testing capabilities
- Post mortem analysis
- Experience with protective shotcrete and castable materials

