



Continuous Optical Temperature Measurement in Primary Steelmaking

The MINKON DynTemp® technology was developed jointly with our innovations partner BFI. It is a revolutionary method for providing continuous temperature measurement and is suitable for many molten metal applications. MINKON DynTemp® is based on feeding an optical fibre continuously into the molten metal. Thermal radiation is simultaneously transmitted to the remote measuring device and allows for exact 'real time' temperature control throughout the process.

Cost effective process control

One major source of productivity loss in primary steel making is the increase of tap-to-tap time due to insufficient bath temperature. Although required oxygen amount and blowing or power on times are calculated by sophisticated models there is too often a significant variation between estimated and real bath temperature.

The MINKON DynTemp® feeds the consumable optical fibre through a gas purged measuring tuyere into the liquid steel bath. The control of gas flows for fibre feeding and refractory shielding is fully integrated in the MINKON DynTemp® system. The system measures the actual steel bath temperature during the processing without interrupting the process to determine accurately the required end point.

The continuous measurement system enables the steel maker to monitor the actual temperature development directly. The measurement can be used either continuously or at specific times of interest. Operational trials show a significantly improved precision compared to the bath temperatures controlled by static charge model.



Main benefits are:

- Short response time (< 0,1 s)
- Continuous online monitoring
- Improved process control
- Reduced energy cost
- Time savings
- Raising output
- Refractory savings
- Improved health and safety